Thesis for the Degree of Doctor of Medicine.

"A CLINICAL STUDY OF SOME RENAL CASES".

by

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During my residence for two years as House Surgeon in various Hospitals in Glasgow, a considerable number of Renal cases (excluding Bright's Disease) came under my notice. It seemed worth while to try to arrange these cases, and in describing them to point out some features of interest which suggest themselves from observation and from perusal of the literature of the subject.

I must acknowledge my indebtedness to Dr. Finlayson, Dr.Newman and Dr.Core by whose kind permission I am enabled to make use of these cases.

I N D E X

The first series of 13 is entirely composed of cases of "Movable Kidney".

Case I. Mrs.H., aged 28, was admitted to the Royal Infirmary on 16th. October 1901 complaining of pain, and a movable tumour in the right loin.

She enjoyed perfect health up till about three years ago, when she accidentally noticed one day, on putting her hand to her side, a movable lump in the right loin. She had not been over-exerting or straining herself in any way, and knew of nothing to cause it. It has been more or less movable ever since, always movable, and always more easily felt when lying on her left side. Previous to this she had felt no discomfort or pain, and for some time afterwards it gave her no trouble beyond the mental disturbance at discovering what she considered to be a tumour in her side. A few months after the discovery of the lump, however, pain gradually developed in the right loin, and has been present ever since. It was of a gnawing character, and although sometimes when moving about it was very severe, yet it was never unbearable. It was strictly limited to the right loin, and did not shoot down to the groin or thigh, and was much improved by lying on her back in bed.

She had no difficulty or pain or increased frequency in micturition, and no change in the character of the urine was observed by the patient. There is no history of any variation in the quantity of urine passed daily, at least not to any noticeable degree.

During

During the last three years she has suffered from indigestion, but has seldom vomited, and there have been no symptoms of jaundice. She has always been of a nervous excitable temperament, but this has been more marked since the development of this illness, and for some time previous to admission she had frequent attacks of giddiness and headache.

There is no history of Dysmenorrhoea or of any uterine trouble. She has been married for ten years, and has had two children, but both of them were born before the onset of this illness. She has had no miscarriages.

When admitted on 16th.October the patient was thin and sallow with dark rings under the eyes. She was a little nervous in her manner, but there were no distinct neurotic symptoms.

The abdomen was flaccid and easily palpated. The right kidney could be felt to be distinctly movable. On making her take a long breath it slipped downwards until the upper border of kidney could be felt to be at the lower costal margin, while when she lay on her left side it could be felt almost at the middle line a little above the umbilicus. The urine had a specific gravity of 1030. It was muddy amber in colour, and acid in reaction. It contained a faint trace of albumen, and phosphates came down on heating. Tube casts, pus, blood, and bile were absent.

No changes were made out in the fundus of either eye.

There were no signs of dilatation of the stomach or of Enteroptosis. There was frequently pain in the epigastrium after food, and the bowels were very constipated. Examination of

of the lungs and heart revealed nothing worthy of note. A sphygmographic tracing shewed the pulse to be a little high in tension.

On 21st.October the kidney was fixed in position by stitching it to the lumbar muscles. The sutures were passed through the cortex of the kidney as the fatty capsule was not strong enough to anchor it securely. The operation was not followed by any Haematuria.

On 25th.November she was allowed up. The wound was quite healed, and the kidney could be felt perfectly fixed, but a little lower down than the normal position. The albumen in the urine gradually diminished after the operation until it completely disappeared, and no tube casts were ever found.

On 27th.November she was allowed to go home as she was perfectly well except for a faint trace of albumen which reappeared in her urine after being allowed up. A few hyaline tube casts were found in the urinary sediment, the first day aftershe was permitted to move about.

The interest in this case centres in the gradual disappearance of the albumen after operation, and its reappearance with a few hyaline tubecasts the day after she was allowed to get up.

Case II.Mrs.S., aged 34, was admitted to the Royal Infirmary on 28th. January 1902.

About six years ago patient first noticed accidentally a movable lump in the right side of her abdomen. It was quite easily

easily felt with the hand, and became more prominent on lying round on the left side. At this time she had no pain or other subjective symptoms, and previous to this her health had always been excellent.

For the last five years she has experienced almost constantly a feeling of discomfort and dragging in the right loin most marked when moving about, and disappearing almost entirely when lying down. This feeling of discomfort which could hardly be called pain was confined to the right loin and never travelled down the ureter or to the thigh. Occasionally it made her feel faint and sick. but never made her vomit. Since the development of these symptoms she has been troubled with pain after food, flatulence, and marked constipation. There is no history of Jaundice. Haemorrhoids have developed during the last few years, and these are always worse during pregnancy.

During the last five years she has frequently had pain in the bladder and urethra immediately after micturition; this has generally been aggravated by pregnancy. There has been great variation in the quantity of urine passed daily, but no enlargement was ever noticed at any time of the tumour felt in the loin, nor was it associated with severe pain in the loin. For some time before admission she was confined to bed with Rheumatism, and during that time the quantity passed did not vary much. Some days when going about (never when in bed) she noticed that she passed urine very frequently, sometimes as often as once every twenty minutes. Before November 1901 on several occasions she observed blood in the urine occasionally passed in the form of small clots.

She

She has always been very thin, but has become more so since the onset of this illness. She always considered herself a nervous person, but lately she has been much more easily upset.

Menstruation has never been irregular, and there is no history of Dysmenorrhoea. It is fourteen years since she was married, and in that time she has had seven children of whom one died in infancy. There havebeen no miscarriages. Three of her children were born after the discovery of this movable kidney, and it is worthy of note that her symptoms were always least marked when she was pregnant.

Except for the symptoms described above she always enjoyed good health until November 1901 when she was confined to bed for nine weeks with acute Rheumatism. There was some swelling of the joints, and she was told at that time that her heart was involved. There is a Rheumatic history in the family.

When admitted to Hospital on 28th.January 1902 she was an extremely thin sallow complexioned woman. She was timid in her manner, but otherwise shewed no nervous symptoms.

On taking a long inspiration the right kidney could be felt quite plainly passing right down to lie in the Iliac Fossa, and on lying on her left side it moved across to the left side of the umbilicus. It could almost be grasped with one hand through the flaccid abdominal wall, and did not seem to be enlarged. On manipulating it with the hand she felt the usual sickening renal sensation.

At the time of admission there was no pain or increased frequency of micturition. The urine was amber in colour, acid

acid in reaction, and had a specific gravity of 1026. It contained a few leucocytes, but no albumen, no blood, no bile, no sugar and no tubecasts.

The liver and spleen were normal in size and in position. There was no dilatation of the stomach, and no sign of Enteroptosis.

There was a slight mitral systolic murmur, but little or no cardiac hypertrophy. The tension of the circulatory system was normal.

Nothing worthy of note was discovered with the Ophthalmoscope in the fundus of either eye.

On 4th.February the usual lumbar incision was made, and the kidney was stitched to the parietes by sutures passing through the cortex. The day after the operation there was a faint trace of albumen in the urine, but no blood, and no casts.

On 6th.March as the kidney seemed securely anchored, and the wound was perfectly healed she was allowed to get up for a little. On 14th.March she was permitted to go home, the pain and other symptoms having entirely disappeared.

While in Hospital there was not much variation in the quantity of urine passed from day to day, except that it was noticeable that before operation she passed considerably more urine than after operation, which was probably to be explained by the fact that after the operation she was lying in bed inactive.

No blood or tube casts were found in the urine at any time although it was carefully examined every day and centrifugalised

centrifugalised frequently. A faint trace of albumen was occasionally present in the urine, but only for a day at a time.

There are several points worthy of notice in this case:-

1. The extreme degree of mobility of the kidney
2. The presence of Hydronephrosis as indicated by the great variation in the quantity of urine when going about before admission to Hospital.
3. The increased frequency of micturition.
4. The occasional presence of blood and albumen in the urine.
5. The amelioration of all the symptoms while lying in bed ill for nine weeks with Rheumatism.

Case III. Mrs.H., aged 60, was admitted to the Royal Infirmary on 4th. December 1901.

She always enjoyed excellent health up till five years ago. About that time she began to be troubled with a feeling of discomfort in the right side. About a year later this feeling of discomfort appeared in her left side also. It was always worse when up and moving about, but never really amounted to pain. When lying in bed on her back it entirely disappeared.

Since the onset of this illness she has become very nervous, easily startled, and subject to a general tremor. She has also suffered from Dyspepsia, flatulence, vomiting and obstinate constipation. There has never been any Jaundice.

She has had 10 children, the youngest of whom is 15 years

years of age. There is no history of miscarriages.

She cannot remember any over-exertion or strain which would be likely to bring on this illness. Her doctor outside could feel both kidneys movable, the right one with ease, and the left one with more difficulty. Dr.Newman saw her four years ago, and made out movable kidney on both sides, but the patient at that time refused operation.

When admitted to Hospital on 4th.December 1901 she was a healthy looking woman, inclined to be stout, and with a pendulous and flaccid abdomen.

There was slight tenderness in both lumbar regions on palpation, and in the right loin the kidney was found to be slightly movable slipping up and down for several inches between the fingers. Patient stated that when she was up and moving about she could put her hand on it herself. Nothing definite could be made out about the left kidney, as the abdominal wall was fat, and rendered palpation difficult.

There was no pain on micturition, but slightly increased frequency, as she needed to get up about once every night to micturate. There was no history of variation in the quantity of urine from day to day. On admission the urine was amber in colour, acid in reaction, and had a specific gravity of 1012. It contained a trace of albumen, but no blood, pus, sugar, or bile, and no tubecasts were found.

The liver dulness was normal, and there were no signs of dilatation of the stomach. The precordial dulness extended from midsternum for four inches to the left. The apex beat was in the fifth interspace. The first sound was booming in

in character, and followed in the mitral region by a short systolic murmur. Nothing worthy of note was observed in the lungs.

She was very excitable in her manner and nervous about her condition, but no tremor was made out, although she said it was generally present. No changes were observed in the eyes.

On 10th.December she was examined with the Cystoscope. The left ureter could be made out quite distinctly, and close to it a small depression of the mucous membrane. The orifice of the right ureter could not be made out so well, but it was thought to be lying at the base of a depression which was dark in colour, about the size of sixpence, and probably due to the cicatrisation of an old ulcer. The difference in colour between the trigone and the rest of the mucous membrane was not so well marked in this case as usual.

Since admission her urine has contained almost invariably a trace of albumen, hyaline tubecasts, and crystals of oxalate of calcium. For the last four or five days it has been impossible to feel the movement of the kidney no matter how one moved the patient about. She was made to get up and work in the ward, but although frequently examined the movement could not be detected. Patient says that so long a time had never elapsed before during which she could not feel the movement herself. The prolonged rest in bed had probably something to do with this.

Under the circumstances it was thought inadvisable to operate upon her, so she was recommended to wear a belt, and

and was sent home.

The interesting features in this case are:-

1. The patient was obese rather than thin.
2. The first symptom did not appear until she reached the age of 55.
3. Both kidneys were undoubtedly movable on good evidence before admission.
4. The disappearance of the symptoms, and the inability to make out the movement after resting in bed for some days.
5. The presence of a trace of albumen and hyaline tubecasts in the urine.
6. The presence of oxalate crystals in the urine.

Case IV. M.C., a man aged 29, was admitted to the Western Infirmary on 10th.June 1901, complaining of pain in the right side of the abdomen and back of 12 months duration.

He is a lithographer to trade and had light work up till about a year ago, At that time he was moved into a department of the business where the work was heavier and involved a good deal of strain in the way of lifting heavy lithographic stones. He blames this for bringing on his illness which dates from the time of the change in his work.

The first symptom was pain in the umbilical and lumbar regions, which shot down the leg a little, but did not travel to the testicle. This pain was as a rule of an aching character. Occasionally, however, it was so severe that he could not stand erect, and frequently he had to sit bent forward

forward in his chair until the severe paroxysm of pain passed off.

He never suffered from indigestion, or sickness or vomiting, but has been troubled with constipation.

He noticed no variation in the quantity of his urine, and there was no undue frequency of micturition. Eight months before admission to Hospital his urine was examined by a doctor and pronounced to be normal.

He has always been a nervous man, but has been still more nervous and frightened about himself since the onset of this illness. Previous to this his general health was excellent. His family history is good. He has been married three years, but his wife has no family, and there have been no miscarriages.

When admitted on 10th.June 1901 he was a thin spare man. He affirmed that he had become thinner since the onset of his illness. The abdominal wall was flaccid and easily palpated. In the right loin the kidney could be felt slipping up and down for a distance of several inches, but it did not travel across the abdomen. There was sometimes considerable difficulty in feeling the kidney, but as a rule the movement was very distinct. He had no difficulty or pain on micturition. The urine was amber in colour, acid in reaction, and had a specific gravity of 1025. It had a mucous sediment and contained a trace of sugar, but no blood, no albumen, and no bile.

On 2nd.July he was sent home with a closely fitting belt and airpad to keep the kidney in position and diminish the pain.

All

All the time he was in Hospital his urine retained the same characters. It almost invariably, although not always, contained a trace of sugar, but never albumen or bile. The specific gravity was as a rule about 1024, but on one or two occasions it rose to 1030. No tubecasts were ever found.

He was admitted to the Royal Infirmary on 3rd.March 1902. After leaving the Western Infirmary the pain had been more severe, and the paroxysms most agonising often causing him to knock off work and sit down. During the last fortnight he felt in addition a slight pain in the left loin.

When admitted on 3rd.March the kidney could be felt in the same state of mobility as on previous examinations. It slipped down from above until the upper edge of kidney could be felt about 3 inches below the costal margin. It was tender, but did not seem enlarged. The urine was amber in colour, acid in reaction and had a specific gravity of 1030. It contained no albumen, blood, sugar, bile, or tubecasts. A few leucocytes and crystals of calcium oxalate were found in the sediment.

The liver and spleen seemed to be normal. Nothing of note was made out about the heart, and the arterial tension was not raised according to the sphygmographic tracing. Nothing abnormal was discovered in the fundus of either eye.

On 11th.March Nephropexy was performed. The fatty capsule was hard and firm so it was not found necessary to pass stitches through the cortex of the kidney. On 4th.April the wound was completely healed, and the kidney firmly anchored, so he was allowed to get up, and on 15th.April he was sent to the

the Convalescent Home with the pain entirely absent.

When admitted to Hospital this time no sugar was found in the urine until 12th.March , the day after the operation. After that it was almost invariably present. On testing the urine after each act of micturition it was found that the sugar varied much in quantity. In the morning there was frequently none. A couple of hours after dinner it was distinct, towards evening only a trace could be found, while by midnight it had often disappeared altogether. That no fallacy might arise it was tested with Fehling's solution, Nitropropiol, and Phenyl Hydrazin. The greatest amount of sugar measured was 3.21 gr. to the ounce. It was found that by cutting down the carbohydrates in his food the amount of sugar could be diminished, but this could not be rigidly enforced owing to his condition of convalescence after an operation.

There was no great thirst and none of the accompanying symptoms of Diabetes. The amount of urine passed in 24 hours never exceeded 50 oz., all the time he was in Hospital. The specific gravity on only one occasion reached 1032. It usually was about 1024.

For three days after the operation a faint trace of albumen was found in the urine, and again after being allowed up there was for several days a trace of albumen which gradually disappeared. No tubecasts were ever observed. Leucocytes were generally present in the sediment, as also were crystals of calcium oxalate, sometimes in such quantity as to produce the "powdered wig deposit".

The

The significance of this case depends upon:-

1. The ability to trace the mobility of the kidney back to heavy strain in lifting.
2. The intermittent glycosuria.
3. The albuminuria occurring for a few days after operation, and again for a few days after being allowed to get up.
4. The almost constant presence of crystals of calcium oxalate.

Case V. Mrs.F., aged 34, was admitted to the Western Infirmary on 18th. August 1898, complaining of sickness and vomiting, and pain in the abdomen.

About two months previous to admission she was seized with severe pain in the abdomen which confined her to bed for eight days, and was so severe as to necessitate the administration of morphia. This pain was at first principally in the epigastrium, but after the first few days it was confined to the right side of the abdomen. At the time of its first appearance she noticed an ovoid swelling about the size of a hen's egg in the hypochondriac region which could be easily felt and was quite visible to the eye.

At the first onset of the pain she had a bad attack of vomiting and since then she has vomited regularly once or twice a week, and on account of this and the pain in the epigastrium and loin, she has been confined to bed. There is no history of Jaundice, although she states that two months ago her motions were quite white for two or three days.

She has been married for eighteen years, and has always enjoyed good health.

When

When admitted to Hospital on 18th.August she was not emaciated and her colour and appearance were good. The heart and lungs were normal. The house physician who examined her immediately after admission could see quite distinctly an ovoid tumour about the size of a hen's egg in the region of the gall bladder. When I examined her this was gone, but on palpation a hard and firmly consistent, but easily movable mass about the size and shape of a kidney could be felt in the right hypochondriac region.

On 22nd.August Dr.Dalzell seeing her along with Dr. R.S.Thomson decided that it was a case of movable kidney and she was removed for operation before I could make any further observations.

The notes on this case are too fragmentary to be of much value, but the position in which the tumour was seen and felt seems to indicate that it is quite possible for the movable kidney to rise up and impinge upon the gall bladder and bile duct, and in this way it is quite conceivable that jaundice could occur.

Case VI. A.C., aged 38, a lady housekeeper was admitted to the Royal Infirmary on 6th.January 1901, having been recommended to come for treatment for a "movable kidney."

Eleven years ago patient one day over-exerted herself running up a hill. When in bed that night she was seized with an agonising pain in the small of the back. This pain troubled her for several years. It was not continuous, but came

came on after exertion and during menstruation. She consulted several doctors and was told by one of them that she suffered from displacement of the uterus, and prolapse of the right ovary. This he rectified and ordered her to wear a pessary. She did this for two years, and by the end of three years the pain had disappeared. She has always been regular in menstruation, but has suffered a good deal from Dysmenorrhoea, and since wearing the pessary she has had a leucorrhoeal discharge.

About three years ago she began to experience an uncomfortable sensation in her right side as if something were moving there, but she never could feel any lump with her hand. This sensation often made her feel sick and faint, and has continued more or less ever since.

She has never noticed anything wrong with the composition of her urine, but states that about once a month for two or three days she would pass a very large quantity of urine. This was always accompanied by a severe pain and feeling of distension in the right loin (not over the bladder) and also 64 a sensation of "something twisted in the side". On these occasions she never noticed any tumour in the loin, nor preceding these attacks did she notice any special diminution in the quantity of urine passed.

There has been no increased frequency of micturition except when passing a large quantity of urine. On those occasions she was compelled to pass urine every half hour during the day, but not so often at night, and on this account she was simply unable to go anywhere any distance from the house

She has always been subject to indigestion, and since she

she experienced this sensation in her right side the indigestion has been worse. She suffers from flatulence, constipation, neuralgic headaches, dizziness, and ringing in the ears. She has always been a very nervous woman, but this has been more marked during the last few years. She states that all her family are highly strung, but none of them have ever suffered from "movable kidney."

When she was admitted to Hospital on 6th.January, she was very thin. She said that she had always been of a spare habit, but that she had lost what little subcutaneous fat she had since the commencement of this illness. There was some suspicion of enlargement of the thyroid gland, but if present at all the enlargement was very slight. There was no exophthalmos, tremor, or pigmentation of the skin. The lungs and heart were normal, and the sphygmographic tracing shewed a pulse of ordinary tension.

The abdominal wall was very flaccid, and one could make out by palpation in the right side a movable body like a kidney in shape. It moved downwards into the Iliac Fossa, and when the patient lay on the left side it moved towards and almost reached the umbilicus. There was no marked enlargement, and the normal kidney tenderness and a sickening sensation on grasping the organ were present.

The liver and spleen were normal in size and position and there were no signs of Enteroptosis or dilatation of the stomach. Nothing worthy of note was made out by vaginal examination. There was no swelling of the feet or of any part of the body. The fundus of each eye was examined for Retinitis with

with a negative result. The urine was amber in colour and had a specific gravity of 1022. It contained a few leucocytes, but no blood, albumen, sugar, or casts.

On 15th.January Dr.Newman performed lumbar nephrarraphy, passing the sutures through the cortex of the kidney. The morning after the operation a trace of albumen was found in the urine, but no blood and no casts were present.

While lying in bed after the operation the patient was extremely hysterical. She was very querulous and difficult to manage; she was always wishing she were dead, and wept on the slightest provocation. While lying thus on her back she suffered a good deal from flatulence and constipation.

On 16th.February, as the wound was quite healed and the kidney firmly fixed, she was allowed to sit up for a little, but she soon complained of dragging pain in the right side. Next night she had a 'hysterical turn' after getting up. A trivial incident caused her to laugh immoderately, and finally she wound up with a paroxysm of tears.

On 25th.February she was allowed to go home.

Before operation her urine varied a good deal in amount, the quantity one day being 280 c.c.s., and the next day 740 c.c.s. It has always been amber in colour and acid in reaction, and the specific gravity has kept about 1020. It has never contained blood or pus. The day after operation a trace of albumen was present in the urine, but it disappeared next day. A trace of albumen was again present from 25th. January till 2nd.February, and again on 17th.February the day after being allowed up. Epithelial and hyaline casts were found

found on 27th.and 30th.January, but never either before or after those dates. Crystals of oxalate of calcium were frequently present.

In this case the points of interest are:-

1. The association of right movable kidney with displacement of the uterus and prolapse of the right ovary.
2. The hysterical element in the case.
3. The hydronephrosis as indicated by the variation in the quantity of the urine, the occasional paroxysms of pain, and the feeling of something twisted in the right side.
4. The occasional increased frequency of micturition, associated with the feeling of twisting in the side. This frequency probably had a reflex origin depending on the congestion of the kidney.
5. The occasional presence of albumen and tubecasts in the urine. The three periods when albumen appeared can be explained in the following way. The first time was the day after operation, and was due to the operation or the chloroform. The last time was the first day after being allowed up, and could be explained on that ground. The other times it was probably due to some movement of the patient in bed causing strain to be put upon the sutures, which were passed through the cortex of the kidney.

Case VII. Mrs.B., aged 30 was first admitted to the Royal Infirmary on 29th.May, 1900.

In

In June 1899 she was confined with her second child. After the birth she only lay in bed for eight days, and she herself thinks that her illness was due to this. In December 1899 she first began to feel pain in the left side. It came on gradually and was gnawing in character. She felt it on taking a deep breath, and it was always there when going about, but on lying down it disappeared and only a feeling of discomfort was left. It became rather acute on stooping or doing any heavy work, and occasionally it was almost excruciating.

Shortly after the commencement of the pain she noticed for the the first time that she had two movable bodies, one on each side of the abdomen. It was only in connection with the left one that there was really any severe pain which was localised in the left loin and did not shoot down to the labia or thigh. In the right side there was only a feeling of discomfort. There was no pain or micturition, and at that time no variation in the quantity of urine passed daily was noticed.

She was admitted on 29th.May 1900. The right kidney which was the more movable although the less painful of the two was stitched on 31st.May, and she was dismissed on 6th.July. This operation did not alleviate the pain at all.

On 12th.November 1900 she was readmitted, on 26th. November the left kidney was stitched, and on 29th.December she went home. The pain completely disappeared after this operation.

In November 1901 the feeling of discomfort reappeared in the right loin, and made it impossible for her to lie on her left side in bed. There was never any acute pain, but she felt

felt as if the right kidney were distended. This feeling of distension would occur about once or twice a week, and would last a whole day at a time. On those occasions she needed to pass urine every hour, and the passing of the urine left a burning sensation in the urethra. There was always a large quantity of urine passed as the feeling of distension diminished and the urine then was always pale in colour. At no time has there been blood in the urine. She never observed any enlargement of the kidney although she could easily put her hand on it as it slipped about.

She has never suffered much from pain after food, or from marked constipation. She has had occasional attacks of vomiting.

After the birth of her last child, i.e. after the onset of the pain, menstruation was irregular up till the time of the first operation, and there was also considerable Dysmenorrhoea. She also noticed that during menstruation the pain in the loin was more severe.

Her medical attendant before admission to Hospital told her before the first operation that to the right of the uterus he could make out on vaginal examination a swelling "caused by the kidney". That, however, has entirely disappeared since the operation.

She has been extremely nervous for some time. She says that she was not at all like this before the commencement of her illness. One of her sisters also is very nervous in manner, but there is no distinct neurotic history in the family.

Her

Her health has always been excellent. She has been married seven years, and has had two children and no miscarriages.

When the patient was readmitted on 7th.February 1902, she was extremely thin but looked healthy enough. She was so timid and nervous that it was very difficult to make a thorough examination. She herself admitted that if she saw any one coming near to her bed as if to speak to her it made her tremble all over and quite upset her.

The abdominal walls were flaccid and the pulsation of the aorta was very distinct. The right kidney was very freely movable. It could pass down to the Iliac Fossa and across almost to the umbilicus. It was somewhat enlarged, but not to any marked degree. No tenderness or mobility could be made out in the other kidney.

The liver and spleen were normal in size and position. There were no signs of Enteroptosis. The lungs and heart were normal, and according to the sphygmographic tracing the blood tension was not raised. Nothing of interest was observed in the fundus of either eye.

The urine was amber in colour, acid in reaction, and had a specific gravity of 1024. It had a sediment composed of mucus and epithelial cells, and contained no albumen, blood, bile, or tubecasts.

On 17th.February Dr.Newman stitched the capsule of the kidney to the parietes. There was some difficulty in getting hold of it owing to old cicatricial adhesions caused by the previous operation. The wound healed up rapidly, and the kidney

kidney seemed firmly anchored, so she was permitted to get up on 15th.March. On 22nd.March she went home completely free from pain.

All the time she was in Hospital, the urine contained a good many leucocytes, but never any albumen, or blood, or tubecasts. The quantity of urine passed daily did not vary much in Hospital, but then it must be remembered that up till the time of operation she was lying in bed, and after the operation the kidney was fixed in position.

In this case one would like to draw attention to:-

1. The fact that both kidneys were movable, and that, at least at first, all the symptoms were referred to the kidney which was less movable.

2. The feeling of distension in the right loin followed by the passing of a large quantity of urine, and probably caused by a certain degree of Hydronephrosis due to kinking of the ureter.

3. The occurrence every now and then of days when she had to pass urine about every hour, and when the passage of the urine was followed by a burning sensation in the urethra. This was probably, as in the previous case a reflex irritation of the bladder and urethra arising from congestion of the kidney.

Case VIII.Mrs.R., aged 31, was admitted to the Royal Infirmary on 19th. May 1901 complaining of pain in the right loin.

The

The patient who is a thin sallow woman has always been of a nervous temperament, but since the onset of her illness this has almost bordered on Hysteria. She enjoyed perfectly good health up till five years ago. About that time shortly after her third confinement she noticed the gradual appearance of pain in the small of the back and right loin. The pain was as a rule of a gnawing character and almost constantly present except when lying down, but it occasionally became very severe, especially if she stooped or exerted herself in any way. The pain was localised absolutely to the small of the back and right loin, and did not travel down the ureter to the lower urinary tract or to the groin or thigh.

She says that she cannot account for the pain by any strain or over-exertion at that time. It gradually became more severe as time went on, but beyond that she had few other symptoms. She had no undue frequency of micturition, and she observed nothing wrong with her urine, either as regards its appearance to the naked eye, or as regards variation in the quantity of water passed.

During the last few years she has been troubled greatly with pains after food, flatulence, and extreme constipation, but there has been little or no vomiting. She has been a martyr to headaches, and has suffered a great deal from palpitation and giddiness.

She has been married ten years, and during that time she has had five children, and no miscarriages. Two of her children were born after the onset of this illness, and she says

says that pregnancy tended rather to aggravate than diminish her discomfort and pain. Since the birth of her last child on 13th.May 1900 she has been very irregular in menstruation, and has suffered a good deal from Dysmenorrhoea.

When admitted to the Infirmary on 19th.May 1901 she was a thin nervous woman. The abdomen was extremely flaccid and easily palpated. The right kidney was found to be distinctly movable. There was some tenderness on grasping the kidney, and the usual faint sickening sensation. The urine contained neither albumen, nor blood, nor pus.

The heart and lungs were normal, and no displacement or abnormality of the uterus was made out. There was a considerable degree of exophthalmos of the right eye and some limitation in the movement of the eyeball which was probably mechanical, but she states that her eye has been in this condition since she was fifteen years of age, and that she has practically never had any vision with it.

Nephrorraphy was performed and she was dismissed on 26th.June 1901 with the kidney anchored securely and the pain in the back and loin almost entirely removed.

A few weeks after the operation she states that she was seized with a severe headache and a feeling of a ball in her throat, and seemed at the same time to lose the power of her whole body. This apparently complete paralysis passed off in a day or so, but she says that for some weeks afterwards she trailed her right leg in walking. Since then she has felt very helpless and weak, and unfit for any work, and the pain has been

been troubling her a little in the right loin.

She was readmitted on 14th.January 1902 and thoroughly examined. There were no signs of motor paralysis affecting any part of the body, and the reflexes were absolutely normal. No localised anaesthesia or paraesthesia was found in any part of the body. There was marked proptosis of the right eye. There was also a slight external squint due probably to mechanical obstruction to the action of the Internal Rectus of the proptosed eye. Visual acuteness of the right eye was extremely feeble, and on ophthalmoscopic examination a posterior Staphyloma and -18 D of Myopia were found. There was no limitation of the field of vision. No localised pigmentation of the skin, no goitrous swelling, no tachycardia, and no tremor were observed

While in the ward she behaved like an irritable and self centred hysterical woman, but none of the major signs of hysteria were observed.

The kidney was found firmly anchored, and the urine was examined regularly both chemically and microscopically all the time she was in Hospital without discovering any abnormality. Her pain did not seem to be very severe, if present at all.

She was sent home on 31st.January 1901.

The significance of this case depends upon the extreme development of the nervous symptoms. There can be little doubt from her description that the paralysis which developed some weeks after operation was hysterical, although I did not have the opportunity of confirming it by personal observation.

The

The sallowness of the complexion and the exophthalmos made one think of the possible co-existence of "exophthalmic goitre" and "movable kidney". That such a combination might occur one cannot help acknowledging, when one remembers that by many observers in the production of both these conditions the neurotic element is thought to play an important part.

It is worthy of note in this case also that the nervous symptoms were not ameliorated but seemed rather to be accentuated by the operation. This seems to corroborate the teaching of many who say, that, though in many cases one can improve the neurotic condition of a patient by fixing a movable kidney, yet in other cases no improvement results.

Case IX. M.S., a woman, aged 29 was admitted first to the Royal Infirmary on 19th.October 1900.

For many years she had been troubled with pain in the left loin and increased frequency of micturition. In June 1899 Dr.Dalzell performed nephrolithotomy in the Western Infirmary and removed a stone from the left kidney. After this she was considerably improved, the pain disappeared, and she could retain her urine for two or three hours although previously she had passed it every hour. A few months later pain recurred in the left loin, and she passed five small stones during the next year, her water at these times being very highly coloured.

On admission to the Royal Infirmary on 19th.October 1900 there was very definite enlargement of the left kidney, and

and some tenderness on manipulation, but the cicatrix was quite healed and firm. She was passing urine every half hour, and the urinary sediment contained a large quantity of pus and granular tubecasts, but no tubercle bacilli were found.

She was put on urotropine and kept in bed, and on 11th.December 1900 she was sent home practically well. Up to this time she had not complained at all of her right kidney.

On 5th.November 1901 she was readmitted to Hospital. Since leaving in December 1900 micturition had not been so frequent; about once every three hours. The pain in the left lumbar region had been for the most part less severe. In February and again in August 1901 she had for one day very acute pain in the left loin and on each occasion, the day after the pain ceased, she passed a small stone 'per urethram'. She also noticed on one occasion at least that one day she would pass very little urine, and the next day there would be a very large flow indeed.

About eight months before admission she observed for the first time, without apparent cause in the way of over-exertion or strain, a feeling of discomfort and aching pain in the right loin. This was almost constantly present when moving about, but would disappear on lying down.

When admitted on 5th.November 1901 she was somewhat anaemic, but moderately well nourished. She was very nervous, and was much perturbed when spoken to or examined. The left kidney could be felt to be enlarged and tender, but it did not seem to vary in size from day to day. It was quite firmly fixed.

In

In the right loin one could feel the right kidney distinctly movable. It slipped down until the upper edge of kidney was quite below the costal margin, but it did not come much over towards the mesial line. It could be grasped in the hand, and the pressure caused patient to have a curious sickening sensation. The constant aching pain which she felt while moving about was confined to the right loin, and although sometimes more severe than at other times, yet it never approached the pain of renal colic.

There was no pain on micturition, but she passed urine about once every two hours. The urine was muddy straw in colour, slightly alkaline in reaction, and had a specific gravity of 1010. It contained a distinct quantity of albumen, a considerable amount of pus, and numerous granular tubecasts, but no blood. There was no oedema of any part of the body, and nothing abnormal could be detected in the fundus of either eye. The heart and lungs were normal, and a sphygmographic tracing shewed no increased tension of the circulatory system. There was no dyspepsia, and no sign of dilated stomach or enteroptosis, but the patient was very constipated.

When menstruating the pain in the right loin was generally more severe than at other times.

On 15th.November Dr.Newman cut down on the kidney and fixed it to the parietes by means of sutures passed through the capsule. For some days after the operation there was more pus in the urine than previous to it, but no blood.

On 2nd.December she was examined with Leiter's cystoscope without chloroform. On the whole the mucous membrane of

of the bladder looked fairly healthy, as did also the orifice of the right ureter. The orifice of the left ureter was somewhat oedematous and craterlike. On watching the orificefor a minute or two one could see occasional spurts of pus which when diffused through the urine in the bladder rendered the view cloudy and the mucous membrane difficult to see. It was not thought wise to attempt to catheterise the ureters.

She was put upon 10 gr. of urotropine thrice daily.

On 16th.December the urine did not contain quite so much pus, but otherwise it was unchanged. She was allowed up as the wound was quite healed and the kidney seemed firmly anchored. No variation in size could be made out in the left kidney. On 6th.January she was allowed to go home, feeling perfectly free from any pain in the right loin.

The urine was examined daily all the time she was in Hospital. It varied in quantity between 500 cc., and 1600 cc., per 24 hours, and in specific gravity between 1008 and 1012. It was generally slightly acid, but occasionally alkaline, and sometimes contained crystals of triple phosphate. Pus gradually diminished, but was never entirely absent. Blood appeared at intervals, but was never associated with pain, as she had no pain at all after admission. Coarsely granular casts and débris could always be found.

It is probable that the condition of the urine had nothing to do with the movable kidney but was entirely due to the condition of "calculous pyelitis" in the other kidney.

This case illustrates a very interesting condition: the

the coexistence of "calculous pyelonephritis" on the one side with "movable kidney" on the other. There is no reason to suppose that calculi were also present in the movable kidney and that the mobility was secondary to the calculous condition.

The story seems to indicate a certain degree of hydronephrosis but it is difficult to say in which kidney it occurred, or whether it was present in both.

Case X. S.A., a man, aged 25, was admitted to the Royal Infirmary on 26th.August 1901 complaining of pain in the left loin.

Patient enjoyed excellent health at home before going out to India in May 1899. He had two slight attacks of Malarial Fever, one in September 1899 when he was in Hospital ten days, and the other in June 1900 when he was off work three days. His only symptoms were a feeling of languor and headache; there were no rigors.

While in India he had gonorrhoea twice. The last attack was in 1900. It was not followed by gleet or stricture. Shortly after this attack of gonorrhoea he began to feel pain in the back and left loin. This pain came on gradually and was not much increased on stooping or exerting himself. It was not always present, but some days it would be more severe than others, although never bad enough to cause him to stop work. In October 1900 he was seen by a doctor who examined his urine, but said nothing about albumen.

In January 1901 he had a very severe pain affecting the

the whole of the right side of the abdomen. It came on suddenly, lasted about one and a half hours, and was so severe that he was rolling on the floor in agony. It passed off gradually. No stone was passed in the urine and there was no jaundice. The urine was again examined at this time but no mention was made of albumen.

In May 1901 he thought that the pain was becoming worse, so he consulted a doctor in Burmah, who said that he had albumen in his urine, and that an operation on his kidney would probably be necessary. Patient himself had never noticed anything abnormal in his urine, and he never had any pain or difficulty or undue frequency of micturition. There was no oedema of any part of the body, no headache, and no failure of vision.

On admission to the Royal Infirmary on 26th. August 1901 he looked strong and healthy. There was no tumour to be felt in the left loin, and no tenderness was elicited on pressure. The pain that he complained of was confined to the left loin, and did not shoot down to the testicle or groin. It was a dull gnawing pain, worst in the morning, and not increased by movement or exertion.

There was distinct enlargement of the left External Abdominal Ring, and some impulse on coughing. Patient stated that sometimes when exerting himself a small tumour appeared over the ring about the size of a hen's egg.

He was not of a neurotic temperament. His digestion was good, and his bowels were not constipated. There were no signs of tubercle in the lungs, testicle, or any other part of the body, and he had no varicocele. Nothing abnormal was made out in

in the fundus of either eye. The heart seemed normal and the blood tension according to a sphygmographic tracing was not raised.

The urine was acid in reaction and amber in colour, and had a specific gravity of 1020. It contained a distinct trace of albumen, but no blood. Neither tubecasts nor tubercle bacilli were found in the deposit.

As his symptoms were so indefinite he was advised to try rest at home without operation, but on 2nd.October 1901 he had to be readmitted as there was no improvement in his condition. On 7th.October a lumbar incision was made over the left kidney. It was found to be distinctly movable, but no stone or evidence of tubercular or cystic disease was made out by inspection and palpation. The kidney was fixed in position and the wound closed.

On 1st.November he was dismissed from Hospital with the wound quite healed and the kidney firmly fixed in position. The urine still contained a trace of albumen, and the pain in the left loin, although much diminished, was not quite gone.

On 4th.December 1901 he was readmitted again as the pain still continued. An X Ray photograph of the kidney was taken, but revealed no calculus. On 10th.December his bladder was examined with the cystoscope. The mucous membrane appeared perfectly healthy. The trigone was dark in colour and easily demarcated from the rest of the bladder wall. The orifices of both ureters were slitlike and difficult to see, but on watching them for some time one could see them opening. They seemed perfectly normal.

It was thought inadvisable to do anything more at present in

in the way of operation unless some other indication should arise, so he was sent home on 19th.December.

All the time he was in Hospital his urine contained a trace of albumen but no blood. It was always acid and generally contained a few leucocytes, but not sufficient to give the "Liquor Potassae reaction" for pus. The specific gravity kept about 1020, and the colour was always clear amber. Oxalate crystals were frequently present in the mucous deposit. Tubecasts and tubercle bacilli were never found, although they were hunted for constantly. There was no oedema of any part of the body, and nothing to indicate Bright's Disease was present.

It is difficult to say exactly what the condition of the kidney was here, but it is probable that there was some other lesion besides the preternatural mobility. When nephrorraphy was being performed the kidney was thoroughly palpated, but no enlargement was made out and no calculus could be felt. Still it is not improbable that a calculus embedded in the cortex may have escaped notice. It is strange that no tubecasts were found. Although the sediment was centrifugalised frequently the result was always negative.

X Ray photographs, frequent examinations for tubercle bacilli, and a cystoscopic examination threw no light upon this case.

ase XI. H.M., a man aged 29, was admitted to the Royal Infirmary on 12th. September 1899 complaining of pain in the right side which had been

been present as long as he could remember, but which had been worse during the last few years.

This pain was always brought on by exertion and its nature was twofold. There was a dull gnawing aching pain in the right loin accompanied by a feeling of pressing downwards. This gnawing pain preceded and followed acute paroxysms of pain, which shot from the loin down the ureter to the testicle, but not to the thigh. There was no variation in the quantity of urine, and it contained only a trace of albumen, no blood, and no sugar. The right kidney was found to be slightly movable, and was stitched in position. He was dismissed on 14th. December 1899 with the pain gone, the albumen absent from the urine, and the kidney firmly stitched in position.

Almost immediately after dismissal from Hospital the pain recommenced, and has been more or less present ever since. Its character was much the same as before, but it was not so severe, and it only came on about every seven weeks, although there was an almost constant feeling of dragging in the right loin. The pain was never at any time unbearable, and never caused vomiting, rigors or sweating. He noticed no variation in the quantity of urine, nor did he pass any gravel. There was no increased frequency of micturition or pain during micturition. There has never been any sudden stoppage in the stream of urine.

Towards the end of September 1901 he observed blood in the urine for the first time. It was mixed throughout the urine and distinctly coloured it. There were no drops of pure blood passed either at the beginning or at the end of micturition. Since

Since that date there has been almost invariably blood present in the urine. The quantity of blood varied considerably, but it was generally greater at night and after exertion. He said that a good smart walk would cause the urine to be bright red in colour. On 7th.January 1902 I examined his urine after he had walked up to the Infirmary, and found it loaded with blood and albumen. No pus corpuscles or tubecasts were seen.

His general health had always been good in every way. He was a worker in steel and often had occasion to lift heavy weights.

When readmitted on 14th.January 1902 he was pale and not over well nourished. The cicatrix of the old operation was visible in the right loin. There was tenderness in the right lumbar region but no tumour, enlargement or mobility of either kidney was made out. There was no pain on micturition or undue frequency. The urine was amber in colour, and acid in reaction. It had a specific gravity of 1028, and contained a distinct trace of albumen and some blood. On centrifugalising the sediment leucocytes and red blood corpuscles were found, but no tubecasts.

The heart had a reduplication of the second sound in the pulmonic area, and the first sound was a little prolonged in the mitral region, but the precordial dulness was normal. The arterial tension was not raised. The lungs shewed nothing of note. On examining the eyes no signs of Retinitis were found in either fundus.

All the time that he was in Hospital his urine contained albumen, but never pus. On two occasions granular casts were found

found after centrifugalising the sediment. Numerous examinations were made for tubercle bacilli with a negative result. With rest in bed the blood in the urine gradually diminished until on the fourth day after admission it was entirely gone. As soon as the blood disappeared he was allowed to get up and go about the Ward. As this failed to bring on the haematuria he was made to do dumb-bell exercise with a heavy pair of dumb-bells for quarter of an hour every forenoon. This at once caused blood to appear in the urine, and the blood persisted all the time that he took exercise in this fashion. It was very curious to notice that in the early morning before he had done his exercise there was as a rule no blood in the urine, whereas about two hours after the dumb-bells had been used blood was always present in the urine.

On 24th.January the bladder was examined with the cystoscope to see if there were any indications of renal calculus or tubercular disease of the kidney. The mucous membrane of the bladder appeared to be healthy and the orifices of the ureters were not inflamed or pouting.

On 27th.January he was allowed to go home.

The interest in this case turns upon the recurrence of the symptoms and the appearance of blood in the urine for the first time after operation. This haematuria cannot be explained on the ground that the kidney being movable caused torsion of the renal vessels, for at the time the haematuria appeared the kidney had been fixed by operation and could be felt to be firmly anchored.

It is unlikely that the anchored kidney by dragging on its

its adhesions would cause haematuria. A possible explanation is that the kidney was anchored in an awkward position so that the renal vessels were pulled upon or slightly twisted. In this way there would arise a chronic congestion of the kidney, which would be worse when the patient began to go about after the operation, and would finally lead to a condition of "chronic nephritis" as indicated by the granular tubecasts that were found on one or two occasions.

Possibly in addition to the mobility of the kidney there was a calculus embedded in the parenchyma, which was not suspected at the time of operation. The symptoms of this, however, were not conclusive, and the cystoscopic examination did not strengthen this diagnosis.

Tubercular disease of the kidney can, I think, be dismissed. No tubercle bacilli were found in the urine. The epididymes and spermatic cords were normal, and no indications of tubercle were found in the lungs. Also there were no signs of infection of the bladder, which would have been almost certainly the case, had the kidney been the seat of tubercular disease.

Case XII. W.J., a man aged 46, was admitted to the Royal Infirmary on 6th. February 1902 complaining of pain in the loin of two years duration.

This patient was a forester and his occupation often required him to lift heavy weights of timber. Two years ago, when stooping to lift a heavy tree, he felt suddenly a sharp pain in his back and right side. The pain although severe was not agonising and

and did not cause him to have a rigor, or sweat or vomit, but was sufficient to make him knock off work for the next two days, and consult a doctor who recommended fomentations. The treatment removed the pain for the time being, but ever since then he has had a sense of weakness in the small of the back, and distinct pain in the right loin every time he stooped or exerted himself at his work. For the last two months before admission pain has been practically continuous in his right side. It was never very severe but was of a constant gnawing nature. It had its seat in the right loin, but travelled across the abdomen, up to the shoulder, and down the ureter to the testicle.

Two weeks after the commencement of this continuous pain jaundice developed and coloured his skin and conjunctivae. At this time he had headaches and shivering and felt very unwell. He was sick and vomited a good deal, but there was no increase in the pain. The motions were not specially pale in colour nor did the patient observe any change in his urine. He was treated by his medical attendant for jaundice, and was off work for a fortnight, but not confined to bed. There is no previous history of jaundice, and there is nothing in his story to suggest the passage of gallstones.

For the last ten weeks the patient has noticed that he has had to get up once every night to micturate. He has had no pain on micturition, but occasionally a little difficulty in starting the flow of urine. There has never been any blood in his urine to his knowledge, and he has never noticed any variation in the quantity of urine passed daily.

Since the onset of his trouble two years ago he has suffered

suffered a good deal from indigestion, but the symptoms were never very aggravated. There is no history of vomiting except during his attack of jaundice. All his life his bowels have been inclined to be loose rather than constipated. During the summer of 1901 he was ill for six weeks with diarrhoea, which he thought might possibly be due to drinking bad water.

He has always been timid and frightened about himself, but has been much more nervous since the commencement of this illness. There is no neurotic history in the family.

When a boy he had a bad attack of rheumatic fever. Twenty five years ago he contracted gonorrhoea, and ever since then there has been some thickening of both epididymes.

When admitted to hospital on 6th.February he looked strong and healthy, but somewhat spare in build. His manner did not appear to be at all nervous, in fact he seemed rather lethargic.

The abdominal muscles were not very flaccid, but on palpating the right loin one could feel a hard kidney shaped body slipping down below the ribs for several inches until the upper border of kidney corresponded with the level of the lower costal margin. On making him lie round on his left side it did not seem to come forward much or to travel across the abdomen. It had all the characteristics of a normal kidney as regards consistency shape and renal sensation, but it seemed slightly enlarged.

Nothing of interest was observed in the lungs. The precordial dulness seemed normal and the heart sounds were pure, but the position and height of the dierotic wave in the sphygmographic tracing seemed to indicate a slightly higher arterial tension than normal.

The

The liver and spleen were normal in size and position and no signs of dilatation of the stomach or enteroptosis were observed.

The urine was amber in colour with a slight mucous deposit, and a specific gravity of 1024. It contained a faint trace of albumen, a few leucocytes and some crystals of calcium oxalate, but no blood, sugar, bile or tubecasts.

There was no appearance of Retinitis in either eye.

On 10th.February through a lumbar incision Dr.Newman sutured the kidney to the parietes. The sutures were not passed through the cortex, but only through the capsule of the kidney. After the operation the wound soon healed, the pain disappeared, and the kidney became firmly anchored so far as one could judge by palpation. While lying in bed convalescent after the operation he suffered a good deal from flatulence and dyspepsia, but this soon disappeared on allowing him to get up.

He was sent home on 18th.March apparently perfectly well.

All the time he was in Hospital his urine had much the same characteristics. It was always clear amber with a slight mucous deposit, and the specific gravity varied between 1016 and 1026. It never contained blood, sugar, or bile, and tubecasts were never found although the sediment was centrifugalised and examined frequently. Leucocytes were almost invariably present as were also crystals of calcium oxalate, sometimes in large enough numbers to give the "powdered wig deposit". A faint trace of albumen was found on two occasions as well as on the day of admission, and when he came up to Hospital on 8th.April to report progress a trace of albumen was again found in his urine.

The

The facts in this case to which I attach importance are:-

1. The commencement of the illness distinctly dating from one day when he over-exerted himself in trying to lift a log of wood.

2. The occurrence of jaundice, the exact relation of which to the movable kidney will be discussed later.

3. The occasional presence of albumen in the urine.

4. The fact that crystals of calcium oxalate were almost constantly found in the urinary sediment.

Case XIII. Mrs.E., aged 50, was admitted to the Royal Infirmary on 20th. March 1902.

She enjoyed good health in every way up till six years ago. Just about that time she began to feel pain in the back and in the right side. This pain gradually became worse and compelled her about a week after its onset to take to her bed to which she was confined for eight weeks. The pain was more or less constant, but varying in severity and always worse when moving about. It did not make her sick, or shiver, or vomit, and was never nearly as bad as "labour pains". She had no jaundice and she never noticed any gall stones in her motions.

The doctor who examined her said she had a "watery tumour" in her right side, but the patient could not feel it herself. At this time she noticed no variation in the quantity of her urine. The pain gradually passed off, but she does not know

know whether the tumour disappeared or not. During the next two years she had three attacks of the same nature, each of them laying her up in bed for eight or ten weeks. The symptoms completely disappeared between the attacks. On each occasion a tumour was made out in the right loin, and at the onset of the last two attacks she noticed that she passed very little urine, and when she was recovering she passed a very large quantity. There was never any severe pain like renal or biliary colic.

At the last attack which occurred four years ago she was treated as a uterine case and had leeches applied to the cervix and the vagina.

She kept quite well until a month ago when she began again to feel a little dull pain more or less constant in the right loin. In the beginning of March she noticed that she was passing very little urine, and the pain became more severe compelling her to keep to her bed. On 9th.March she commenced vomiting and continued until the 16th. On the 16th.according to her own statement she vomited material very like "cocoa". There was no pain in the stomach at this time but a curious feeling of distension of the abdomen. The motions were never pale; on the contrary they were rather dark, but not more so than one would expect in a person who was generally constipated.

On 16th.March she herself felt the tumour for the first time with her hand, in the right side of the abdomen.

For the last six years or so she noticed that her urine was frequently thick and muddy with a white sediment on standing. This was most noticeable at the times when she had the pain in the right side. At other times it would be quite clear

clear. There was no definite history of blood in the urine and so far as she knew there had been no gravel passed.

Since her first attack six years ago she has had to get up on an average once every night to pass urine, and three or four times every night at those periods when she had the pain in her side.

Her bowels have always been rather constipated, and during the last six years she often passed "matter" from the rectum with the motions.

She has had twelve children of whom seven died in infancy. The rest are alive and well. She has had five miscarriages, four occurring after her tenth child: Then she had two live children and later one miscarriage. She was just recovering from her first miscarriage when the symptoms described above appeared.

When admitted on 20th.March she was a moderately stout well nourished woman, and did not look urgently ill. There were no signs of jaundice in the skin or conjunctivae.

The abdominal wall was flaccid, and on palpation one could make out a hard freely movable mass in the right side of the abdomen. It was continuous with liver dulness and extended from the right costal margin downwards and towards the mesial line reaching its lowest point just below the umbilicus. It did not extend into the iliac region. It was fairly movable and tender and the percussion note over it was relatively dull, but only slightly so. Although it was movable, still it could not be replaced into the loin as one would have expected had it been a movable kidney.

There

There was no ascites or oedema of any part of the body.

The urine was amber in colour, acid in reaction and had a specific gravity of 1026. It contained a deposit of mucus, no albumen, no blood, no sugar, and no bile. In the sediment on microscopical examination were found leucocytes, numerous epithelial cells of all shapes and sizes, and crystals of calcium oxalate, but no tubecasts.

Nothing of interest was found in the lungs or heart. The liver and spleen by percussion seemed to be normal in size and position.

On 25th.March, on examining her under chloroform, it was found difficult to believe that the tumour was in the kidney, so the abdomen was opened to the outer side of the "rectus abdominis" muscle. A very distended gall bladder was found, and it was evidently this that had been felt on palpating through the abdominal wall. It was stitched to the abdominal parietes and then opened. A large quantity of bile stained thickish fluid escaped full of fine gravel and crystals of cholestearine. A sound was passed well up into the bile duct, but no stone could be felt. A large drainage tube was left in the gallbladder. During the operation it was discovered that the liver was movable and could be pushed up and down for a considerable distance. No tumour could be felt in the kidney.

The symptoms were completely removed by this operation. The fistula gradually closed up and she was able to be sent to the Convalescent Home on 16th.May.

The urine remained practically normal all the time she was

was in Hospital except on one or two occasions when a trace of albumen was found.

In this case the story pointed distinctly to a certain degree of hydronephrosis, and when on operation the liver was found to be movable, then one was justified in at least suspecting that the kidney also was movable, and that it was on account of this movement that the hydronephrosis had arisen. In this patient the kidney was not felt to be movable, and it was only by a process of reasoning that it was thought to be so.

What is the exact significance of the five miscarriages after the onset of the illness it is difficult to say. They might possibly be due to pressure on the enlarging uterus of a distended gallbladder, or a hydronephrotic kidney.

No matter in what way one views this case it is one of interest. If regarded as a case of "movable liver" and distended gallbladder associated with a movable hydronephrotic kidney it is of extreme interest, but it is no less of interest if regarded as a case of "movable liver" and distended gallbladder mistaken before operation for "movable kidney" and hydronephrosis, for here it would illustrate the great difficulty that arises sometimes in diagnosing the one condition from the other.

Case XIV. Mrs.D., aged 37 was admitted to the Western Infirmary on 10th. April 1902.

Except for an uncomplicated attack of scarlet fever as a child she enjoyed excellent health up till ten or eleven years ago

ago. In the year 1891 she first experienced a sensation of weakness in the 'small of the back', which was constantly present and made itself more felt when she stooped or exerted herself. She knew of nothing that she had done to cause this, but she herself attributed it to a strain. Shortly after the first symptoms appeared she consulted a doctor who did not examine her with much care, but assured her that she would soon be all right. The weakness, however, has persisted ever since. It has never amounted to pain, and has always confined itself to the small of the back except during the last few years when it seemed to affect more the right lumbar region behind. At that time she was earning her living as a cook.

She was married in 1893. Next year, after the birth of her first child she was confined to bed for three months with 'childbed fever'. During this illness she says that her face, hands, and legs were much swollen, her urine contained blood and was bright red in colour and she took several 'turns of unconsciousness' each one lasting for an hour or two. No fits were recorded. Three months after the birth of her child she had apparently completely recovered, but she has never quite regained her standard of health. Every year since the first illness she has been laid up with two similar attacks of haematuria, each lasting two weeks, but unaccompanied by unconsciousness or swelling of any part of the body. In the twelve months immediately previous to admission to Hospital she had four such attacks.

She herself ascribed these recurrent attacks to catching cold, and she always found that they yielded to dieting, rest

rest, and purging. They were generally heralded by a severe headache, but she never noticed during them any failure of vision. It is worthy of note that neither at the commencement of nor during any of these attacks of haematuria was there any severe pain in the loin.

She was not aware that she suffered from "movable kidney", until she was told so when seeking admission to Hospital on 10th.April on account of the haematuria.

She has always been liable to "bilious attacks", but sickness and vomiting have been more frequent during the last few years. Her bowels were naturally rather constipated, but the constipation has been more marked lately. She has never had jaundice.

Since her marriage in 1893 she has been irregular in menstruation, but has never suffered from dysmenorrhoea. She has had four children born alive, but each one of them was premature and born about the eighth month. Since the birth of her last child, she has had two miscarriages occurring in each case about the fourth month. Pregnancy neither increased nor diminished the feeling of weakness in the back.

When admitted to Hospital on 10th.April she was inclined to be thin and of a somewhat sallow complexion. There was no oedema of any part of the body, but she stated that on walking about her ankles became swollen. Her temperature was normal.

She complained of weakness in the back more marked in the right lumbar region than the left. It never varied in position and never amounted to pain. The abdomen was flaccid and

and on palpation one could make out that the kidney slipped up and down for several inches, but the upper border of the kidney was never lower than the costal margin. The organ was not enlarged or tender, and did not travel across the abdomen.

The heart and lungs shewed nothing worthy of note, and the liver and spleen seemed normal in size and position. No dilatation of the stomach or enteroptosis was made out, and she did not complain of dyspepsia.

The urine was red in colour, and acid in reaction. It had a specific gravity of 1020, and contained abundant albumen and blood. On microscopical examination blood corpuscles, and hyaline, and epithelial tubecasts were found.

She was confined to bed with a restricted diet, and put upon a mixture containing iron alum. The urine gradually improved. The blood disappeared on 3rd.May to return for one day on 9th.May, but since then it has been entirely absent. The albumen gradually diminished, until by the time of dismissal it was a mere trace. On the day she went home a few hyaline and epithelial casts could still be found. The amount of urine steadily increased from 38 oz. per day to the normal quantity.

She was anxious to get home, and was allowed to leave Hospital on 24th.May.

In this case the mobility of the kidney probably dates back eleven years to the time when she first felt the weakness in her back. Although she states that she does not know the cause, it does not seem far to seek when one remembers that she was

was employed as a cook, and that she would often need to exert herself considerably in lifting heavy pots off the fire.

The attacks of haematuria are difficult to explain. There was nothing in the history to indicate calculus or tubercle, and even if one were to accept either of these explanations it would not cover all the facts. On the other hand one cannot ascribe the haematuria to torsion of the renal vessels and ureter, for, had this occurred, the patient would have complained of more or less acute pain in the side. Also had this occurred, it would not have accounted for the general oedema which was present in one at least of these attacks of haematuria.

It seems rather bold to assert that one individual might have more than a dozen attacks of acute Bright's Disease, but I believe that this is the correct explanation here. It has been pointed out in some of the cases recorded above, that, where the kidney is movable, one often finds a transitory nephritis manifesting itself by the presence of a trace of albumen and some tubecasts in the urine. Where movable kidney has occurred in a person who is naturally susceptible to Acute Bright's Disease, as some people undoubtedly are, is it not possible that the sudden movement or slight impaction, which in an ordinary case would cause a transitory albuminuria, would in such a case as this bring on an attack of Acute Bright's Disease?

I would like also to draw attention in this case to the fact that none of her pregnancies went on to full time, and that her last two pregnancies ended in miscarriage at the fourth month. This may have been due to a displacement of the uterus, and in this case it would be of interest on account of its association

association with "movable kidney." The patient, however, had no symptoms pointing distinctly to any displacement of the uterus. Unfortunately I could not make a vaginal examination at the time I saw the patient as she was menstruating. Another explanation of the miscarriages and premature deliveries is that the movable kidney impinging upon the enlarged uterus induced premature labour.

In studying the literature of "movable kidney" it is amazing to find how much has been written on this subject, especially within the last few years. No doubt much has been written, but there are still many points to be elucidated.

It may not be quite useless in making a few remarks on "movable kidney" in general to indicate wherein these cases that have been described agree or disagree with the opinions expressed by other writers.

For the sake of clearness I have divided the following remarks into divisions and numbered them.

1. There is a considerable divergence of opinion as to the frequency of "movable kidney" in the living human being. It must be remembered that statistics on a subject like this can only be drawn from hospital practice, and that here one is not dealing with a series of normal human beings, but with those who are in a more or less morbid state of health. From calculations made on this basis one would be led to believe that "movable kidney" occurs more frequently than it really does. On the other hand it cannot be denied that there are many people going about their ordinary occupations in whom either one or both kidneys are distinctly and pathologically movable without any symptoms having arisen which would lead them to take cognisance of the fact. It is extremely probable however that this proportion of cases is much smaller than that which has been led to seek medical advice on account of symptoms arising from the condition.

Dealing with hospital statistics the percentage in women

women computed by different writers on the subject has varied between 3 and 46. Edebohls says 18%, Glenard 22%, and Lindner and Küttner 20% in women, but Henry Morris, from whose work these statistics are taken, states that probably 7 to 10% is nearer the mark in women, and less than 8% for men. This seems to me rather high for men.

In my series of 14 cases, 10 were in women and 4 in men. For the purpose of statistics, however, I can only use 12 of these cases, as only 12 came under my notice while House Surgeon in the Royal Infirmary, and it was only during that period of 6 months that I made a routine examination for "movable kidney" in every patient admitted to the wards.

Out of 104 patients admitted to the female ward during six months 8 suffered from "movable kidney", and out of 151 admitted to the male ward during the same time 4 were afflicted with the same condition. This gives a percentage of 7.6 in women and 2.6 in men.

In none of these cases was the condition discovered accidentally in the ward; all were admitted complaining of symptoms arising directly or indirectly from the movable kidney.

2. There is no age which has absolute immunity from the condition of "movable kidney", for several cases have been recorded in girls between one month and 14 years (Comby and Guinon - La Semaine Médicale 1894), and on the other hand one of my cases (III) had reached the age of 60 before she was admitted to Hospital.

Of the cases I have recorded 6 occurred between the ages

ages of 25 and 30, 5 between 30 and 38, one at the age of 46, one at the age of 50, and one at the age of 60. This agrees with the observations of most writers that this condition occurs most frequently in those between 25 and 40 years of age. It might be argued that there is some relation between the tendency for it to occur at that age and the fact that this is the principal childbearing period of a woman's life.

3. Of the 14 cases described above, in 11 of them the right kidney was movable, in one of them the left kidney was movable, and in 2 of them both kidneys were movable. On so small a number of cases it is impossible to base statistics upon which any reliance could be placed as to the relative frequency of right and left movable kidney and unilateral and bilateral movable kidney, but, taking the statements for what they are worth, the ratio of unilateral to bilateral mobility is 12 to 2, and of right-sided to left-sided mobility is 11 to 1.

Dealing with the proportion of unilateral to bilateral mobility Edebohls in his statistics ("Annals of Surgery" Feb.1902) taken from ten cliniques states that, out of 578 cases of movable kidney operated on, 107 had both kidneys movable. This gives a ratio of 4.4 to 1. Landau whose statistics are older, but probably more correct, gives the ratio as 18.2 unilateral to 1 bilateral. On working out the figures given in Keen's tables the ratio is 21.7 unilateral to 1 bilateral.

When we come to deal with the relation between right-sided and left-sided mobility, on adding up the cases quoted by Landau (Translation of Sydenham Society p.246), which comprise the

the work of most continental observers up to the year 1884, we find 152 right-sided cases as compared with 12 left-sided cases, or to put it another way the ratio is 12.6 to 1. Keen's tables shew a ratio of 10.8 to 1, and Henry Morris (Surgical Diseases of the Kidney, Vol.I., p.107) says that the right kidney is from 12 to 13 times more often affected than the left.

4. The consideration of the causation of movable kidney naturally falls into three divisions:-

(1) The general causes of movable kidney.

(2) The reasons why females should be affected more than males.

(3) The reasons why the right kidney is more generally affected.

Very many theories have been brought forward to explain the condition of "movable kidney," but no one of them has been absolutely proved to be the determining factor. It is perhaps simplest although perhaps not quite accurate to classify the various theories under the headings,

(A) Anatomical and Physiological Factors.

(B) Pathological Factors.

(A) <u>Anatomical and Physiological Factors</u>.

(1) Deletzine and Volkoff quoted by Henry Morris have proved by measurements and casts that the fossae in which the kidneys normally lie are "narrower and more open below" in females than in males, and therefore it is suggested that

that on this account kidneys are more liable to slip out of position in women than in men.

(2) Zuckerkandl also quoted by Henry Morris describes an aponeurotic layer in front of the left kidney which is absent in the right, and this is put forward as an explanation of the comparative immunity of the left kidney.

(3) The position of the right kidney where it is pressed down upon from above by the weight of the liver and the movement of the diaphragm in respiration. Along with this some associate tight lacing which they say presses the liver down on the kidney, but on the other hand Newman (Lectures to Practitioners p.35) believes that here the liver is actually a protection to the kidney.

Kendal Franks (Twentieth Cent.Pract.of Medicine Vol.IX.) says the kidney is kept in position by the simultaneous action of two forces, the pressure of the liver from above, and the pressure of the intestines from below. "The resultant of these forces will be a force acting almost directly backwards, wedging as it were the kidney into the position it usually occupies". "Now if the balance between these forces be lost so that their resultant acts in a more or less downward direction it is easy to conceive how the kidney itself aided by this downward force and by its own weight would gradually sink making a way for itself behind the peritoneum which lines the loin below it".

(4)

(4) The greater length of the right renal vessels is said to predispose to mobility of the right kidney. Also the connection of the left suprarenal capsular vein with the renal vein, and the fact that the left renal vessels are closely connected by cellular tissue with the head and neck of the pancreas, these may help to keep the left kidney in position.

(5) Landau (Sydenham Translation p.278) asserts that the attachments of the descending colon help to keep the kidney better in position on the left side than the ascending colon does on the right side.

(6) Laucereaux lays some stress upon the close connection between the vascular plexuses of the kidney and ovary on the right side whereby the right kidney becomes more congested than the left during menstruation.

(7) Another theory brought forward by Guéneau de Mussy and mentioned by Landau (p.276) is that the right kidney is more pressed upon by the uterus, which during pregnancy tends to rise to the right side.

(B) <u>Pathological factors</u>.

(1) Relaxation of the abdominal walls after repeated and closely following pregnancies said to predispose to "movable kidney". In the majority of cases the abdominal wall is undoubtedly very flaccid, but that this is invariably due to numerous pregnancies my series of cases does

does not prove. In only 7 out of 13 cases was there a history of pregnancy. Of these one had had 12 children, another 10, another 7, another 5, and 2 had had 2 children. In the case of the other married woman the number was not ascertained.

Flaccidity of the abdomen resulting from frequent pregnancies may no doubt play a part in the production of this condition, but pregnancy is a more important causative agent when looked at from the point of view of the length of time a patient remains inactive in bed after the birth of the child. In case VII. the patient herself attributed her illness to the fact that she did not lie in bed for a long enough time after the birth of her second child. The "bearing down" efforts during labour may also have some place in the aetiology. "Küttner, however, thinks movable kidney as frequent in young girls and women who have never borne children as in others". (Morris Vol.I. p.108).

(2) Rayer had a case where the cause seems to have been the dragging of a femoral hernia. In one of my cases (X) there was a small inguinal hernia on the same side as the movable kidney, but here it is difficult to believe that the kidney lesion was caused by the hernia.

(3) Newman (Lectures p.37) suggests that displacement of the uterus may drag upon the fundus of the bladder and through the ureters upon the kidney, or by kinking the ureter may set up a hydronephrosis and secondarily cause the

the kidney to become movable. Landau (p.255) describes a case of Urag's where pressure of an enlarged uterus (not displaced) caused hydronephrosis and "movable kidney".

In case VI., eleven years before admission to Hospital the patient was treated by Dr.Duke of Cheltenham for displacement of the uterus and prolapse of the right ovary. On admission I examined her and found nothing wrong with the uterus and ovary, and this was confirmed by Dr.Kelly of the Royal Infirmary, but possibly the displacement had been rectified by the treatment she received.

(4) Calculus in the pelvis of the kidney is said sometimes to be a cause. In case IX., the patient passed numerous calculi, and a calculus was removed by operation from the left kidney, but it was the other kidney that subsequently became movable, and there was no evidence either by cystoscopic examination or otherwise to lead one to assume the presence of calculi in the right kidney.

In cases X. and XI., the nature of the symptoms and their persistence after the mobility of the kidney had been rectified pointed somewhat to calculus embedded somewhere in the parenchyma of the kidney, but X Ray photographs, cystoscopic examinations and palpation of the kidney while exposed during the operation of nephropexy tended in both cases to negative this supposition.

(5)

(5) Rapid emaciation, thus diminishing the thickness of the fatty capsule, has been advanced as one of the causes. To none of my cases is this explanation applicable. All but two were extremely thin, but they had always been so, and any slight loss of adipose tissue which occurred before admission to Hospital was not looked upon as a cause of the kidney lesion, but rather as the effect of the worry and prostration resulting from the illness

It is not impossible, however, that one might have absorption of the capsule without concurrent general emaciation. In my cases there were great differences between the fatty capsules in thickness and consistency.

(6) Dilatation of the stomach has been cited as a cause, but this is extremely improbable. It is more likely to be an effect than a cause of "movable kidney," and Herbert Bramwell's interesting case in the B.M.J. (Oct.1901, p.1135) lends support to this view.

(7) Henzel (Morris Vol.I. p.110) quoted a case where the cause was supposed to be curvature of the spine due to rickets. Landau (p.260) quotes two cases of "movable kidney" associated with caries of the spine.

(8) Albarran (Annales des Maladies des Organes Genito-urinaires July 1895) states that "movable kidney" is an evidence of nervous degeneration as proved by its almost constant

constant association with neurasthenic and allied nervous conditions.

Kendal Franks (Twentieth Cent.Pract.of Med. p.792),however, says that the neurotic symptoms are the effect and not the cause, and this view is supported by Osler who, quoting Glénard as his authority, says that "the vascular disturbances in the abdominal viscera in consequence of displacements and kinking account for the feelings of exhaustion and general nervousness." Certainly this latter view seems the more rational, but from purely clinical observation it is difficult to say which is the correct one. In almost every one of my cases the patient had always been of a nervous temperament, but on the other hand in each case this nervous condition appeared to be accentuated after the kidney condition attracted attention.

(9) Trauma - In none of the cases that came under my observation was there any story of injury, but Kendal Franks quotes two such cases. In one of them a phaeton was overturned and fell across the patient, and in the other the patient was run over by a cart.

(10) Great exertion or straining, especially in the way of lifting heavy weights, no doubt plays a part in the aetiology of this condition. One of my patients was a shipwright, another was a steelworker. In both cases the work was of a laborious nature, and involved occasionally the lifting of heavy weights. Another patient

patient was a lithographer, and his symptoms date from a period when he was taken from a fairly easy part of the work and put into a department where he had to lift heavy lithographic stones and presses. Another patient, a forester to trade, attributes his illness to one day lifting a heavy log of wood. At the moment of lifting he was seized with a severe pain in the back and side. Another patient was a cook and had to lift heavy pots off the fire. Into this category also would fall the exertions of a pregnant woman when bearing down during her confinement. Landau (p.274) says that "other authors have seen movable kidneys actually develop in the course of labour after severe bearing down", but he himself is somewhat sceptical of this.

When discussing the effect of exertion or strain the relation of the right kidney to the liver must be borne in mind. In making a great exertion the lungs are filled with air and the glottis is then closed, as is proved by the expiratory grunt which frequently follows a great physical effort. In this way the diaphragm is forced down to its fullest extent. At the same time the abdominal muscles are fixed. The combination of these two forces thus tends to displace the kidney downwards. Newman in his "Lectures to Practitioners" and MacGregor in an article to the Lancet (Dec.1901, p.1665) lend support to this view. Kendal Franks (Twent.Cent.Pract.of Med. p.792) believes it to be false.

All these factors which have been described no doubt on different occasions play a part in the producing the condition of movable kidney. Of no one of them, however, is it possible to say "this is the cause, and unless this be present "movable kidney" will not occur in any case".

5. The degree of mobility of the kidney in the cases that come under observation is extremely variable. Henry Morris in "Surgical Diseases of the Kidney" (p.92) states that "a certain limited amount of movement in a vertical direction is natural to the kidney in each one of us". This depends upon the movement of the diaphragm in respiration owing to the situation of the kidney immediately beneath it, and also to the force of gravity, the kidneys slipping downwards when one stands erect. Newman dealing with the same subject from observations made in the post-mortem room says that "if the abdomen be opened and the body raised upright the liver and kidneys will fall perceptibly on account of their support being removed. This support is "partly due to contraction of the abdominal muscles, and partly due to expansion of gas within the hollow viscera".

That most operators on "movable kidney" recognise and count upon this slight natural mobility is evident when one considers that the result they aim at after nephrorraphy, where one can estimate the degree of fixity of the organ owing to its being stitched as a rule in a position lower than normal and where it can be easily palpated, is to get a kidney not anchored firmly

firmly as a rock, but one with a little "give and take" as if its moorings were elastic. Edebohls (Annals of Surgery Feb.1902) goes still further and is quite satisfied with a kidney after operation if, notwithstanding a good deal of movement, it is so far fixed that it cannot be pushed up and made to disappear entirely beneath the ribs. Few operators, however, I fancy, would be satisfied with this result.

But quite apart from a physiological mobility in movement of the kidney due to some morbid condition the degree of mobility is very variable. This brings one face to face with the distinction between a movable and a floating kidney. From the pathological point of view a floating kidney is one moving about in the abdomen with a mesonephron attached. From the clinical point of view a floating kidney is one with a considerable degree of movement not limited to an "up and down" direction but also travelling more or less across the abdomen, no matter whether it has a mesonephron attached or not.

The committee appointed by the Pathological Society of London decided in favour of the clinicians' point of view, but it is still rather a moot point, and it is safer, if one wishes to be absolutely correct, to restrict one's use to the term 'movable kidney' except in cases where the presence of a mesonephron has been ascertained either at operation or on the postmortem table.

It is interesting to note that Osler from a clinical point of view adopts a classification of his own and divides his cases into Palpable, Movable, and Floating Kidneys.

Of

Of the 14 cases which came under my observation, in 5 of them besides being able to slip down into the iliac fossa the right kidney could come forward until it seemed to the touch approximated to the abdominal wall, and also travelled some distance transversely across the abdomen. In one of these (II.) it could be felt to the left of the umbilicus, in other three (I, VI, and VII) it almost reached to the umbilicus, and in one (V) it could be felt and could be seen as a distinct protuberance in the region of the gallbladder. Of those which had not such a free movement, seven (III, IV, VIII, IX, XI, XII, and XIV.) could be felt slipping up and down under the fingers, but did not come forward at all. Of the other two one (X) was cut down on and found to be movable, and the other one (XIII) was thought to be movable on account of its association with symptoms of hydronephrosis and movable liver.

It is worthy of note that in none of the four men was the kidney floating in the clinical sense of the word, but only movable, whereas out of ten female cases, in five of them the kidney was distinctly floating. It is also noteworthy, with reference to this capacity of the kidney to travel across the abdomen, that it was not always in married women who had borne many children that it was most movable. In one case at least where the kidney was extremely movable the patient had never been married.

On reading through the account of these cases one's attention is drawn to the fact that not in every case is the severity of the symptoms in proportion to the degree of the mobility

mobility. In some of those in whom the kidney was extremely movable the complaint was only of a feeling of discomfort, while in others, in whom the kidney seemed only slightly movable, great pain was suffered. The amount of pain seems to depend not so much on the degree of mobility, as on the neurotic element in the story, and also upon whether there is any twisting of the ureter or bloodvessels setting up hydronephrosis or hyperaemia of the kidney.

6. It is rather surprising to find how many patients discover the presence of the "strange lump" in their abdomen before their attention has been directed to it by the medical attendant, and even sometimes before they have thought of seeking medical advice. In three of my cases the patient could feel with her hand the kidney moving about in the abdomen, and indeed was the first to draw attention to it. This discovery of the "tumour" was the first indication to two of these patients that there was something wrong, and with one of them no pain or other symptom appeared until a year after the lump was first felt.

Often the patient cannot with her hand feel the kidney, but she knows how to bring it down so that the examiner can get hold of it, for she can tell by the sensation of movement inside when the kidney leaves its position. On several occasions when trying unsuccessfully to find a kidney which was known to be movable the patient has volunteered to bring it down, and has succeeded in doing so either by taking a long inspiration or by lying on her left side. She has probably found out that if she lies

lies on her left side in bed the lump comes forward and causes her discomfort and pain, and so by experience she gradually discovers what positions and attitudes to avoid, if she wants to keep the kidney in position and save herself discomfort.

In palpating a movable kidney the best position to make the patient lie in is dorsal decubitus with the knees slightly drawn up and breathing quietly with the mouth open to keep the abdomen flaccid. With the left hand pressed well into the lumbar region behind, and the right applied to the loin in front, the kidney if out of position can often be felt at once. Failing this make the patient take a long breath to cause the diaphragm to bring pressure on it from above. To turn the patient round on to the left side also is often of some help. All these methods sometimes fail, and one may have to go back again and again until by chance some day it is felt moving about without difficulty. If there is any difficulty it is an advantage to let the patient walk about on her feet just before one is going to make the examination. Kendal Franks adopts the following manoeuvre:- "The patient is asked to sit up in bed; the elbows held firmly to the sides are grasped, and the patient's body is raised about a foot from the bed; the body is brought down again with a jolt. This will generally dislocate a movable kidney which can then be easily felt in the loin or in the iliac fossa".

There is never any uncertainty as to whether one is grasping the kidney or not as the patient at once jumps and invariably complains of a curious faint sickening sensation which some writers describe as allied to the testicular sensation.

By

By this method of palpation one can make out the mobility, the size, the consistency, and the tenderness of the kidney. In one or two of my cases slight enlargement was noticed probably due to congestion. Landau (Sydenham Translation p.321) cites a case that occurred in Frerich's clinique where the pulsation of the renal artery could be felt. In one or two of my cases the abdomen was so flaccid and the kidney so movable that I could grasp it in one hand, but I have never been able to make out pulsation in the renal vessels.

Percussion is advocated by some as of great assistance where one is doubtful whether the kidney is situated in its normal position in the loin or not. I was never able to gain much information from percussion of the lumbar region.

7. The characteristic pain of "movable kidney" seems to be dull and gnawing and is frequently described by the patient as a feeling of dragging and discomfort in the loin rather than pain. Associated with it there is sometimes a feeling of weakness in the back, as in case XIV.

This dull pain is generally attributed to dragging on the renal plexus of nerves. This explanation is probably correct as the nerve filaments which go to make up the renal plexus are very numerous, and one would naturally expect that anything, which tended to increase the displacement of the organ and thus tended to put a greater drag upon the nerve fibres, would increase the pain. It is corroborated also by clinical experience judging from my cases. Out of 14 cases 13 found the pain much alleviated

alleviated by lying in bed on the back; with 3 of them in this position the pain disappeared entirely. Two of them found it almost impossible to lie on the side remote from the movable kidney on account of the discomfort it caused. Five of them found the pain increased on stooping.

This gnawing pain is almost invariably localised to the loin in which the affected kidney lies. In one case (V) it was also present in the epigastrium, but this may rather have been the effect of the almost constant vomiting. In another case (X), however, the pain in the epigastrium could not be explained in this way. In one case (XI) it travelled down occasionally to the testicle, in case (IV) it travelled down the thigh, and in case (XII) it wandered down to the groin, across the abdomen, and up to the shoulder on the same side as the affected kidney. In case (VII) where both kidneys were affected, the right kidney, which was more movable, gave little pain, while the less movable left kidney caused great pain. Other writers have recorded intercostal neuralgia, and pain extending down to the knee, or present at other sites equally remote from the kidney, but evidently having its origin in the kidney lesion. The explanation of these remote pains is at least partly due to the fact that the kidney is normally situated just over the two lowest branches of the lumbar plexus, and also to the fact that its capsule is richly supplied with sympathetic ganglia, which are connected by fibres with the solar plexus and thus indirectly with the nervous supply of parts of the body apparently remote from the kidney.

In addition to this dull aching pain there sometimes occur

occur paroxysms of severe pain answering in some degree to the condition first described by Dietl in 1864. These paroxysms may be very severe. Cole Baker records a case (B.M.J. Nov. 1901, p.1597) where the pain was so excruciating that the patient fainted, and Morris states that death has occurred from shock during the paroxysms. In case IV, V, VI, VII, and XI, the paroxysms occurred at varying intervals and without any apparent cause. The pain according to the patients' descriptions was agonising, but did not seem quite so severe as one would expect in a case of Renal Colic. To one patient (V), however, morphia had to be administered. In case IV., patient felt sick but did not vomit during the pain, in case VI. faintness and a feeling of something twisted in the side accompanied the pain, and in case VII. there was a feeling of distension in the loin.

Dietl thought this condition might be due to "incarceration of the kidney in the surrounding connective tissue and peritoneum", corresponding to strangulated hernia. By Gilewski it was attributed to incarceration between the last rib and vertebral column causing an acute hydronephrosis. Landau (p.292) thought it "unlikely that the kidney should become incarcerated in the cellular tissue which is everywhere so yielding and especially in the neighbourhood of parts so soft as the intestines" He also rejected Gilewski's theory of wedging between the vertebral column and ribs. In place of this view he approved of the other theory which Dietl suggested viz., that the symptoms are due to twisting of the renal vessels, more especially the vein, and cited in support of this Cohnheim's experiments where the renal

renal vein was tied and in less than an hour the kidney had swelled up until it was twice the size of the other one. Such a condition must undoubtedly cause severe pain, and the possibility of its occurrence cannot be denied when one considers the length and course of the renal vessels, and the fact that they are attached to a kidney which is turning somersaults inside the abdomen. My case (VI) in which the patient during the paroxysm of pain complained of a feeling of twisting in the loin seems to support this hypothesis.

By Gilewski hydronephrosis was associated with incarceration of the kidney, and was put forward as a possible cause of the pain. Although incarceration seems rather wide of the mark, still hydronephrosis, due to kinking of the ureter from some temporary malposition of the kidney, is worth considering. Against this it may be said that a single obstruction of the ureter will not cause hydronephrosis, but frequently repeated, as is bound to happen in "movable kidney", a certain degree of hydronephrosis will result. This hydronephrosis is not often discovered by palpation, but how often in postmortem examinations does one find some degree of hydronephrosis where the patient has died of a lesion of some other organ altogether, and without any swelling in the loin having been felt during life.

On weighing the whole evidence, Landau's theory of torsion of the vessels seems the correct explanation of the more acute pain, but it is probably associated with kinking of the ureter. The close proximity of the insertions of the vessels and ureter into the kidney would lead one to suspect this, and Newman's

Newman's finding this combination of twisting of the vessels and kinking of the ureter in a case operated on by him (Renal Cases p.2) proves that in some cases at least it does occur.

In the two cases quoted above (VI. and VII.) where the more acute symptoms were attributed to twisting of the ureter and renal vessels it is worth noting that during and after those more acute attacks the patient required to micturate very frequently - once every half hour - and the passage of the urine left a burning sensation in the urethra. This is just what one would expect when the kidney is congested on account of the large nerve supply and highly developed reflex mechanism of the genitourinary tract. The same thing occurs in congestion of the kidney due to Bright's disease, or after the administration of Cantharides, or the passage of a catheter.

Some writers have recorded during paroxysms like these the presence of blood, albumen, and tubecasts in the urine. This is extremely probable, but in none of my cases did paroxysms occur after admission to Hospital, so I had no opportunity of corroborating it.

8. In almost all cases of "movable kidney" a series of symptoms having their basis on the nervous system has to be acknowledged. All observers take notice of these symptoms, but few try to explain them, and it is difficult to understand the part they play. In some they seem to be the cause of the "movable kidney", in others they seem to be the effect. It is nearly as difficult to give an explanation for the latter hypothesis as for

for the former.

It is impossible to pass over the co-existence of the two as a mere coincidence, for why should the coincidence occur so frequently in patients of this class and not in others.

Nine of my patients were, and acknowledged themselves to be, extremely nervous, easily frightened if one spoke to them or prepared to examine them. Some of them said they had always been nervous, but all agreed that the advent of the "movable kidney", if it had not originated this nervousness at least immeasurably increased it. Two of them were distinctly hysterical. One of these (VI) in addition to minor manifestations had a bad attack of hysteria with uncontrollable laughter and crying while under observation in Hospital. The other (VIII) had what, according to her description, seemed to be a hysterical monoplegia, but unfortunately she was not under observation at the time. In neither of these patients could I find contracture of muscles, limitation of the field of vision, or localised areas of anaesthesia, hyperaesthesia, or paraesthesia. In one of my cases tremor was observed, and in another it was described by the patient, but this did not occur in either of the distinctly hysterical patients.

Landau quotes Chroback and Lancereaux as having seen hysteria often associated with "movable kidney", but denies any causal relation between the two.

Three of my patients suffered from giddiness, and several from occasional severe headaches, but this had probably some connection with the existing constipation.

It

It seems to me probable that a strong-minded person, who has a movable kidney unknown to himself, may have only a slight feeling of discomfort in the loin, and may not trouble himself about it at all. On the other hand a neurasthenic individual experiencing the same sensation would distress herself about it, and having become thinner with the mental worry would consult a doctor, who, feeling the kidney movable through the thin abdominal wall, might tell the patient and thus increase her nervousness. This explanation may stand good in a few instances, but in the great majority of cases it is no help. The symptoms are often so clamant that notwithstanding the patient's strength of will, or, perhaps to put it better, his lethargic disposition they will force themselves upon his attention and compel him to seek advice.

Glénard frankly acknowledges the combination of neurasthenia and "movable kidney", but does not try to explain it. Most authors adopt the same attitude.

In the greater number of cases the nervous symptoms in an uncomplicated case of "movable kidney" disappear after the kidney has been fixed by operation. It occasionally happens, however, that operation does not improve the patient's condition at all in this respect; indeed, in case VIII. the symptoms related to the nervous system seemed to be accentuated by the operation. It is impossible to tell beforehand how far operative procedure will benefit the patient, but the result in most cases is so good, that it seems only right that every patient suffering from "movable kidney" should get the chance of treatment if the local and general symptoms are at all severe.

9. There is no direct relationship between "movable kidney" and the generative organs, and yet in many ways there is an indirect connection.

Dysmenorrhoea is a very frequent concomitant of movable kidney. Out of 10 female cases, 4 suffered from dysmenorrhoea, one from irregular menstruation without dysmenorrhoea, one was past the menopause, and in one of them no note was made about menstruation; the others were normal in this respect. This dysmenorrhoea may be explained in various ways. Since the connection between the vascular and nervous plexuses of the ovary and kidney is so great, it is possible that the movement and consequent congestion of the kidney may derange menstruation. Again by many authors a prolapse of the kidney is frequently associated with prolapse of other abdominal organs. Thus a slight and unsuspected prolapse of the ovary in these cases may cause dysmenorrhoea. In case VI., there was a distinct prolapse of the ovary at one time.

Again it is possible that a freely movable kidney might fall so far down into the pelvis as actually to press on the ovary, as in case VII., where this was suspected by the medical attendant who on making a vaginal examination felt a mass which he took to be kidney at the side of the uterus.

Under the heading of Aetiology the possibility of pregnancy or a displaced uterus causing "movable kidney" has been discussed. But granted that the kidney is already movable pregnancy may aggravate, ameliorate, or in some way alter the symptoms. Morris (p.116) says that "pregnancy is usually an occasion of increased suffering".

Of my cases, in case VIII., two children were born after

after the onset of the illness, and during each pregnancy the kidney symptoms were aggravated. This could be explained by the kidney being caught and held in a false position by the enlarged uterus. In case II., two children were born after the tumour in the abdomen was discovered. Here the symptoms were much ameliorated during pregnancy. The cause of this might be that, as the uterus increased in size, the kidney was pushed up into its normal position and retained there, or the foetal movements might mask the pain and discomfort due to the movement of the kidney. In some cases the amelioration of the symptoms might be attributed to the absence of dysmenorrhoea on account of the cessation of menstruation during pregnancy, but in case II., this explanation will not hold, as there was no dysmenorrhoea present at any time.

Landau (p.317) quotes a case of Eger where abortion was produced by a movable kidney probably owing to interruption to the circulation in the renal vein. In case XIV., there was a history of two abortions each occurring at the fourth month, and all of her four live born children were born prematurely. Landau also quotes a case of Hohl's where a displaced kidney is said to have formed an obstruction to labour.

10. "Movable kidney" is generally accompanied by considerable gastro-intestinal disturbance. This may have several different manifestations, and these may be either concomitant with or a result of the displacement of the kidney.

Glénard described a condition of enteroptosis associated with

with "movable kidney", but other writers have not observed it very frequently, and although I carefully examined all my cases for it, in each one the examination was negative.

In 10 out of 14 cases there were signs of digestive derangement as indicated by pain after food, nausea, and vomiting. Several of these patients had suffered from indigestion previously, but with the onset of the renal lesion the symptoms became more marked. In one of these cases (VII) an occasional inexplicable attack of vomiting, accompanied by nausea, but not by pain, was the only indication of gastric derangement. In another patient (V), who suffered from "movable kidney", the sickness and vomiting was the clamant symptom, and it was for that the patient sought treatment. Most writers on "movable kidney" describe dilatation of the stomach in association with it, and it seems to occur moderately frequently according to them, but in none of my cases was there dilatation sufficient to produce unmistakable physical signs.

All agree that in most cases gastric crises of varying severity do occur, but there is considerable difference of opinion as to the cause. Some ascribe all the symptoms to a gastroduodenal catarrh due to the general lowering of the health from pain and mental worry, and perhaps also in a slight measure due to the pressure on the bowel by the movable kidney. I think it is very probable that in case VII., where there were no signs of dyspepsia but only occasional attacks of vomiting, these were originated by the movable kidney, which in this case was very movable, impinging on a full stomach possibly with some force when

when the patient altered her position.

More support is lent to the view that these gastric crises owe their origin to the close relationship of the nervous supply of the kidney and that of the stomach.

The renal and solar plexuses are closely associated. From the solar plexus is given off the sympathetic nerve supply to the stomach. The rest of the nerve supply of the stomach is from the pneumogastrics, and these also are connected with solar plexus. Thus anything which tends to disturb the nervous mechanism of the kidney would be liable to tell upon the nervous mechanism of the stomach, and thus one might explain the gastric crises. The chronic dyspepsia would then be due to a catarrh of the gastric mucous membrane resulting from the more occasional and more severe attacks which go under the name of gastric crises and arise from implication of the gastric nerves.

Bartels of Kiel, quoted by Landau (p.286) explained the dilatation of the stomach and gastric catarrh by the pressure of tight lacing compressing the fixed and descending portion of the duodenum, between the kidney and the vertebral column, and thus preventing the passage of the contents of the stomach into the intestine. But Landau rightly rejects this theory as improbable if not impossible.

Kendal Franks (Twentieth Century Practice of Medicine Vol.IX.) says that normally the descending portion of the duodenum lies on the inner part of the anterior surface of the right kidney, and that these two are bound together by connective tissue. Any descent of the kidney would thus pull upon the connective

connective tissue joining the two organs, and might in this way cause kinking of the duodenum and obstruction to the egress of the contents of the stomach into the intestine. He also draws attention to the fact that seldom if ever do gastric crises occur with a left movable kidney.

Landau in 1884 first suggested in an indefinite sort of way that the kidney pulling upon the peritoneum in its movements might cause obstruction of the duodenum. This has been more fully elucidated by Herbert Bramwell in an article published in the British Medical Journal (Oct.1901 p.1135), where he describes a case which was treated during several months for dilatation of the stomach before a movable kidney was discovered. The patient refused to have nephropexy performed, and indeed Dr.Bramwell did not seem to think this would improve matters much as induration could be made out at the pylorus. Later the dilatation became so bad that the question of doing a gastro-jejunostomy was discussed. At the post mortem examination the pylorus was found thickened and contracted. "Extending from the surface of the pylorus downward, and to the right were three distinct cords of thickened peritoneal tissue which gradually spread out over the right kidney. This latter was freely movable up and down for the space of three inches, and with it moved its peritoneal coverings. When the kidney was pulled down to its full extent the three peritoneal bands were very distinct, and clearly dragged upon the pylorus." In summing up he says "that an acquired movable kidney does not move up and down in a space under the peritoneum but carries peritoneal covering with it stretching the

the inferior reflection of the peritoneum to some extent and gliding over the angle of this reflection while at the same time it stretches and drags upon its superior and internal reflections, drawing these into distinct bands which directly drag upon the pylorus".

In this case the induration felt through the abdominal wall at the end of the stomach during life was evidently due to hypertrophy of the muscular fibres at the pylorus. Thus the dilatation of the stomach was probably due partly to spasm of the pyloric muscle caused by the irritation of the dragging of the peritoneal bands, as well as to the mechanical obstruction caused by these bands.

11. Constipation is a frequent symptom of "movable kidney." In 10 out of my 14 cases it was present, and in some of them it seems to have given the patient considerable trouble before admission to Hospital. This can be explained by the mechanical pressure of a movable kidney upon the colon, and would probably be more serious in a left movable kidney, where the descending colon would be pressed upon. Landau quotes a case in Oppolzer's clinique where a patient is said to have died of intestinal obstruction due to pressure of a movable kidney upon the ascending colon, but he does not think in this case it was quite clearly proved. That it could occur with hydronephrotic kidney I can quite readily believe from a case (XXII) that came under my own observation and is described later, where death was undoubtedly directly due to intestinal obstruction caused by the pressure of a

a calculous pyonephrosis upon the bowel, and to adhesions formed between the two.

The constipation could also be explained on a nervous basis from intercommunications between the kidney and the intestine through the solar plexus.

Occasionally diarrhoea occurs. It was observed in case XII., and is described by Newman as occurring in one of his cases. When present it is probably due to the presence of gastro-duodenal catarrh, or to the movable kidney impinging on the intestines and setting up peristalsis, or to reflex nervous mechanism.

12. Edebohls of New York, in an article to the "American Journal of Obstetrics" (1895 p.161) and again in the "Annals of Surgery" (Feb.1902) draws attention to the connection between "movable kidney" and "appendicitis". This he considers due to an indirect pressure of the movable kidney upon the superior mesenteric vessels, thus causing hyperaemia of the appendix and rendering it liable to the inroads of micro-organisms which would set up an appendicitis.

I have had no experience of this in my cases, and as far as I can find, few if any of the observers on this side of the Atlantic lay any stress upon this connection between "movable kidney" and appendicitis.

Several American surgeons, however, following in Edebohls' footsteps, stitch the kidney and remove the appendix at one sitting and through one lumbar wound.

13.

13. Within the last few years the opinion has been growing and evidence has been produced to prove that there is some connection between "movable kidney" and diseases of the gallbladder and its ducts. In one of my series of cases (XII), there was a distinct history of jaundice for which he was being treated by his medical attendant a few weeks before admission, and nearly two years after the first symptoms of "movable kidney" appeared. In this patient there was coloration of the skin and conjunctivae; the motions were claylike and the urine dark in colour.

In case V. there were white motions, but she did not notice any coloration of the skin. In case XIII., there was a distended gallbladder associated with movable liver and hydronephrosis, and with a kidney which was probably movable.

Litten in 1880 was probably the first to draw attention to the association of jaundice and "movable kidney". Landau (p.289) says he has seen it in three women, and Newman also noted it in three of his cases. Hale White (B.M.J. 1892 I. p.223) describes a case where recurrent jaundice was cured by stitching a movable kidney, and Lawrie (B.M.J. 1901 p.15) and MacGregor (Lancet 1901 p.1665) describe similar cases.

Morris (Vol.I. p.113) says that transient attacks of jaundice are apparently not unfrequent, but he has never witnessed any himself. He says, however, that "movable kidney" and enlarged gallbladder often occur in the same person, and quotes a case where he found a displacement of the kidney and liver associated with hydrops of the gallbladder and a calculus in the cystic duct. Lindsay Steven in the Glasgow Medical Journal (Oct.1883) describes a similar case. Cordier (American Journal of Obstetrics

Obstetrics 1896 XXXIV., p.532) had a case of "movable kidney" and distended gallbladder without calculus. MacLagan and Treves (Lancet 1900 p.15) describe three similar cases. Paul (Liverpool Medico Chirurg.Journal 1900 XX. p.175) had a case of "movable kidney" with hydronephrosis and gallstone, and Wendel (Annals of Surgery 1898 XXVII. p.199) cited a case much the same, where the gallbladder ruptured. Edebohls (Annals of Surgery Feb.1902) mentions four cases of his own and quotes several other cases of American and Continental writers, but these references were in literature to which I had no access and so could not verify.

An array of cases like the above seems almost to prove beyond doubt that there is a connection of some kind between a "movable kidney" and the gallbladder and biliary passages.

Landau (p.289) explains the connection by ascribing the jaundice to a catarrh of the bile ducts arising from the gastro-duodenal catarrh which so often accompanies "movable kidney" and which has been discussed above. No doubt this may occasionally be a sufficient explanation as in my case (XII), but it will not suffice in all cases.

Adhesions have been described between a "movable kidney" and the gallbladder by Landau in a case of Urag's (p.254), and in a case of Lancereaux's (p.258). Might such adhesions by pulling and twisting the gallbladder and bile duct during movements of the kidney not cause at least temporary obstruction to the flow of bile? In support of this one could quote case XIII where the liver was distinctly movable.

Another possible theory is that the peritoneal bands, which

which in Bramwell's case by their dragging caused kinking of the duodenum and dilatation of the stomach, would cause obstruction to the egress of bile into the duodenum, either by kinking the bile duct, or by dragging upon the mucous membrane of the duodenum so that it came into close apposition with and closed up the opening which the bile duct has in common with the pancreatic duct into the duodenum. In Bramwell's case where the bands of peritoneum were so well marked there was no jaundice, but that does not necessarily refute this theory.

Litten, who first observed jaundice, assumed a temporary compression of the common bile duct by the kidney. Stiller repudiated this view as an anatomical impossibility, and was supported in this by Landau. Lately, however, Treves, in writing of the cases which he saw with Dr.MacLagan and operated upon, revives Litten's first theory. To quote his own words:- "There was no evidence that the disturbance of the peritoneum attending the movable kidney had led to such a mobility of the duodenum as could produce a kinking of the duct. The condition discovered during the operation definitely suggested that the kidney pressed directly on the biliary passages". In my case (V), where the kidney kept constantly bobbing up at the lower edge of the liver just at the site of the gallbladder, jaundice could easily have arisen in this way.

All these theories that have been put forward, ascribing the relationship to gastroduodenal catarrh, to kinking of the duodenum and bile duct, and to direct pressure of the kidney on the bile passages are feasible, and it is probable that each in turn

turn plays its part as a causal agent.

14. The cystoscope is not of much use in "movable kidney," because in this condition there are as a rule no changes in the bladder or in the orifices of the ureters, and the cystoscope is only of value where such changes are expected. In several of my patients a cystoscopic examination was made, but nothing abnormal was observed except in case IX., where the changes were confined to the orifice of the left ureter and could be explained by the presence of a calculous pyelitis in the left kidney, whereas it was the right kidney that was movable.

15. The urine in cases of "movable kidney" is well worth examining from day to-day. At first sight there seems to be nothing very striking about it, but a careful daily examination reveals many points of interest.

The quantity passed may vary very largely from day to day, if there is any hydronephrosis present, and this variation in quantity may occur without the presence of any appreciable tumour in the loin. In one of my cases (XIII.), the minimum quantity passed was 200 ccs., and the maximum quantity 1320 ccs., in 24 hours; in others there was distinct variation, but not so marked as in the case quoted. Even if the evidence of hydronephrosis were clear yet one would not be surprised to find in Hospital little variation in the quantity of urine, for, as the patients lie in bed, there is less tendency for kinking of the ureter and hydronephrosis to occur.

In three of my cases (II., VI., and VII.) the patient during

during the more severe paroxysms required to micturate every half hour, and in one case (IX.) every hour. If the view is correct that these paroxysms are due to congestion of the kidney and hydronephrosis arising from torsion of the vessels and ureter, then one would explain the frequent desire to pass water by a reflex relationship between the upper and lower parts of the urinary apparatus. In the same way can be explained the burning sensation that is sometimes (VII) felt in the urethra in one of these attacks after passing urine. This occurs in any congestion of the kidney no matter what its origin.

In seven cases there was an occasional trace of albumen in the urine. It was very noticeable that frequently for two or three days after the operation the urine contained albumen, evidently owing to the manipulation of the kidney during operation. This would often disappear to reappear the day after the patient was allowed up. This might arise from the drag of the surrounding adhesions on the kidney on assuming the vertical position. An occasional trace before operation would be explained by the movement of the kidney within the abdomen. Any sudden movement in bed shortly after operation by creating tension on the stitches would also be liable to cause it. In case X albuminuria without casts was a constant feature both before and after operation, but here there was probably some other kidney lesion in addition to the mobility.

In three cases hyaline and epithelial casts were observed after centrifugalising. The explanation given above for albumen suffices for them.

In

In three other cases coarsely granular casts were seen. In one of them (IX) these were probably due to calculous pyelonephritis existing in the left kidney whereas it was the right kidney that was movable. In the other two cases the cause was probably commencing chronic Bright's disease, which Edebohls says, is not uncommon in association with "movable kidney."

Blood is related to have been present once or twice in the urine in case II., but this never occurred while under observation in Hospital. In case XI. there was haematuria for the first time some months after the kidney was fixed by operation. But here there was probably some other unsuspected kidney condition possibly a calculus embedded in the parenchyma.

The sediment in all the cases invariably contained numerous leucocytes resulting from the irritation set up by the movements of the kidney.

Crystals of calcium oxalate were invariably present in six cases, frequently in considerable numbers, and sometimes sufficient to produce the appearance of a "powdered wig" deposit. There is no mention of this in the literature of the subject so far as I can find. This oxaluria cannot be looked upon as a direct consequence of the "movable kidney." It is dependent upon the neurasthenia and dyspepsia with which according to Osler it is frequently associated.

Glycosuria occurred in one case (IV.). It was more or less paroxysmal and unassociated with any of the other symptoms of 'diabetes mellitus'. It was probably accidental so far as its connection with the "movable kidney" was concerned, but possibly

possibly had some relation to the neurasthenic condition of the patient. To quote Finlayson (Clinical Manual p.488) "the presence of glycosuria is sometimes associated with irritability of the nervous system and with dyspepsia". If one accepts the modern views of the causation of glycosuria it is difficult to see how it could have any direct connection with a "movable kidney."

The condition of the urine in case XIV. has not been entered into here. In this case there were recurrent attacks of haematuria and albuminuria with tubecasts accompanied also by dropsy, but without any increase of pain. In dealing more particularly with this case previously the condition of the urine was ascribed to recurrent attacks of acute Bright's disease which were thought to be indirectly dependent upon the "movable kidney." This association of acute Bright's disease with "movable kidney" has already been noted by Edebohls in his article to the "Medical Record" (4th.May 1901) where he states that, in two cases in which he did the operation of nephropexy on cutting down on the kidneys he found them to be the seat of acute Bright's disease.

16. The heart was carefully examined and sphygmographic tracings were taken of the pulse in each case. Little deviation from the normal was discovered in any, except in case II. where there was a distinct history of rheumatism, and in which a systolic murmur was heard in the mitral region.

17. The fundus of the eye was examined with the ophthalmoscope in every case, but only in case VIII were any changes found

found. Here there was proptosis of one eye associated with a posterior staphyloma and -18 D of myopia; evidently an old standing lesion. In no patient were there any signs of retinitis, but this was to be anticipated, as retinitis in kidney lesions is almost invariable associated with albuminuria, and in my cases it was exceptional to find albumen as a daily occurrence.

18. The treatment of "movable kidney" is not a subject that can give rise to much discussion in the present day when nephrorraphy gives such excellent results.

Treatment of any kind, in some cases is inadvisable. Where the movable kidney has been accidentally discovered by the medical attendant while examining the patient for some other malady, it is better not to take any notice of it or mention it to the patient, especially if it is giving rise to little or no trouble.

Before operative measures are resorted to various expedients are frequently tried. Massage has been recommended by Bachmaier, Fellner, and Eccles. In combination with this a fattening diet is given in order to increase the amount of fat in the fatty capsule of the kidney.

Newhall advocated electricity to be applied with one electrode in the vagina and the other over the kidney.

Le Gendre, who thought meteorism played a part in the causation of the condition, advised careful dieting and the administration of strychnine. Guzzburg on the contrary gives a yeast ferment in order to produce meteorism, and thus retain the prolapsed kidney in position.

The

The only treatment without operation which seems at all feasible is the application of a bandage or belt to keep the kidney in its place. Rayer was the first to advocate this in 1841, and since then the modifications of this form of treatment have been various. Some recommended elastic belts, Rose preferred strips of adhesive plaster, and Newman designed an airpad to be applied under a firm belt over the kidney when it had been replaced in its normal position.

I have only seen this form of treatment tried in one case (IV.) and here it signally failed. It is quite possible that any contrivance such as those above might keep a movable kidney from travelling across the abdomen, but it is difficult to see how a kidney could be kept from slipping downwards when the patient assumed the erect posture, unless such pressure could be applied as might injure the kidney. Some, however, have found this form of treatment very useful.

If the kidney is movable, and if it is giving the patient considerable trouble, all the symptoms being distinctly traceable to the movable kidney, then one should resort to operative measures. Nephrectomy, which was the first operation to be tried, was condemned by Landau as too dangerous, even before a better operation had been suggested.

Nephrorraphy, or as it is sometimes called, nephropexy, is now recognised to be the only justifiable operative measure. The method of cure by this means is so rational, and the results obtained are so good, that it is not likely soon to be superseded. In only one of my cases was the operation unsuccessful, and this was

was easily and permanently rectified by a repetition of the same operation. By some it is said that the operation may fix the kidney, but does not remove the symptoms. But if the patient has been carefully watched for some time, and if the conclusion has been come to that the symptoms are dependent upon the "movable kidney", then, so far as my experience goes, anchoring of the kidney removes, or greatly ameliorates the patient's suffering.

After operation the patient frequently complains of pain in the loin for some time. This is due to the kidney dragging upon the newly formed adhesions as the patient moves about. If given time this also disappears.

It is hardly necessary to enter into the various ways in which the operation is done. Suffice it to say that in all ordinary cases the lumbar method is employed by almost every surgeon, and after that the method of fixing does not much matter so long as the operator is satisfied that it is secure.

The next series consists of three cases of injury to the the kidney which came under my notice. Careful notes were taken of them and they illustrate one or two points that may be of interest.

Case XV. J.S. aged 40, was admitted to the Royal Infirmary on 14th.December 1901.

Up till the time of admission he enjoyed excellent health. There is no previous history of swelling of the feet or under the eyes, or pain in the back, or increased frequency of micturition.

On 14th.December he was engaged in helping to load a vessel from a staging which had been rigged up on account of the low tide, and was resting partly on the quay and partly on the steamer. The staging slipped with the heaving of the boat, and the patient fell a distance of 15 feet landing on his left side and striking the left loin against the corner of the hatch.

When admitted to Hospital shortly after the accident he was quite conscious, and showed no signs of collapse. There were one or two small flesh wounds in the right hand and leg. He complained of pain in the left side about the region of the lower ribs, and in the loin, but not shooting down the ureter to the testicle. No broken ribs could be made out. There was no fracture of the pelvis and no rupture of the urethra. No bruising and no swelling of the left loin was observed but there was great tenderness

tenderness in that region, and the muscles to the left of the umbilicus were very rigid. The percussion note over the whole abdomen was tympanitic.

A few hours after admission he passed urine which was dark red in colour. It was acid in reaction and contained abundant albumen and blood and also some epithelial cells, but no tube-casts were found. There was no increased frequency of micturition, and no pain associated with the act of micturition beyond a burning sensation in the urethra.

The bowels moved shortly after admission, and the motion contained no blood. The hepatic and splenic areas of dulness to percussion were normal. The heart sounds were pure, but a sphygmographic tracing of the pulse shewed the tension to be rather high. Over both lungs one could make out mucous râles, but there was no friction anywhere.

The urine was tested several times a day all the time he was in Hospital. On the evening of the day after admission (15th.December) cellular and hyaline tubecasts were found, and after that they were present in every specimen of urine passed up till the morning of the 17th. The haematuria continued from the day of admission until the morning of 19th.December. The albuminuria gradually diminished until by 2nd.January it was entirely gone.

There was never at any time any increased frequency of micturition, and the amount of urine passed daily was normal. On 18th.December the burning sensation in the urethra during micturition disappeared. The tenderness and rigidity in the loin only lasted a few days, and no tumour developed.

The

The fundus of each eye was examined and found to be normal. The temperature remained normal all along.

On 28th.December he was allowed to get up for a little and on 6th.January he went home.

Case XVI. W.C., a man aged 30 was admitted to the Royal Infirmary on 8th. March 1902.

On the day of admission he was at his work as a railwayman in a siding at a place where a wall comes very close to the line, the distance between an engine on the line and the wall being only about 4 inches. An engine came slowly along the line, and the patient not having time to escape stood close up to the wall with his face to the engine. He was caught about the pelvic girdle by the side of the engine and twisted half round. The driver seeing the occurrence reversed the engine, and as it moved back the patient was twisted back into his former position.

When admitted to Hospital shortly after the accident he locked very pale, but his pulse was good and his temperature normal, and there was no other sign of collapse. There was a good deal of ecchymosis of the perineum. He complained of great pain in the left loin and in the pelvis,especially when moved. Crepitus was not observed in the pelvis, but no real attempt was made to elicit it. The urethra appeared to be intact.

There were no signs of bruising of the loin, but there was considerable tenderness and rigidity of the abdominal muscles in the left loin. There was no general distension of the abdomen. Percussion elicited a note relatively dull in the left loin, but this

this was probably due to a loaded rectum, as the dulness disappeared after the bowels had been moved.

The bladder was considerably distended on admission and he was unable to pass urine himself. A large quantity of urine was drawn off with the catheter. There was a little difficulty in getting the urine to flow at first on account of blood-clot which blocked the eye of the catheter. The urine was smoky in colour, acid in reaction, and had a specific gravity of 1026. It contained a trace of albumen and blood, and a few leucocytes, but no tubecasts were found.

The liver and spleen were normal in size and position, and nothing of interest was discovered in the heart and lungs.

A few days after admission a good deal of discoloration appeared over the crests of the ilium and in the left loin. The pain in the loin gradually disappeared, but the tenderness and muscular rigidity persisted for some days longer. The urine continued to be drawn off with a catheter until 19th.March, and after that he was able to pass it himself.

The eyes were examined with the ophthalmoscope with a negative result so far as pathological changes were concerned. A sphygmographic tracing of the pulse shewed no increased arterial tension. The temperature remained normal throughout.

On 28th.March he was allowed to get up for a little and on 1st.April he was sent to the Convalescent Home.

The feature of interest here is the condition of the urine which was examined several times a day. On admission it was smoky with blood mixed through it. After that for a day or two

two the mucous sediment was slightly tinged with blood. For the rest of the time it was clear amber in colour, but a trace of blood could be detected with Guaiac and Ozonic Ether up till 26th.March.

Albumen was present from the day of admission in gradually diminishing quantity until 30th.March after which it disappeared entirely.

The urine was centrifugalised to facilitate the search for tubecasts, and they were found, except in the first sample of urine, up till the third day after admission, and again on 19th. and 20th.March, but after that date, notwithstanding careful and prolonged searching, they could not be found. While present they were generally hyaline in character.

From 23rd.to 26th.March a little pus was present in the urine, probably due to a slight pyelitis, but this cleared up on administering urotropine.

The inability to pass urine voluntarily was probably to be explained by the reflex shock from bruising of the perineum and neck of the bladder. The clot which blocked the eye on first passing the catheter was due to bruising of the neck of the bladder, which undoubtedly had occurred judging from the ecchymosis of the perineum. That the haematuria which persisted later was not due to this, I think the presence of hyaline tubecasts goes to prove. It is also evident that the albuminuria was not dependent on the blood, for it continued for some days after the haematuria had ceased.

The presence of a slight degree of pyelitis after the injury and clearing up under urotropine is interesting.

Case XVII.

se XVII. D.M. aged 37, a railwayman, was admitted to the Royal Infirmary on 31st.January 1902.

He was injured at his work at 9.45 a.m., on the morning of admission. He was trying to catch hold of a tarpaulin hanging between two waggons which were standing with their buffers slightly apart, and in doing so the right side of his body was in the space between the buffers. Just at that moment the engine came up to couple on, and by its impact the patient's body was crushed between the buffers of the two waggons.

When admitted to Hospital within an hour of the accident he was very collapsed, but quite conscious. The skin was cold and the face blanched with dark rings under the eyes. The pulse was 110, very thin and wiry, but regular. The respirations numbered 40 per minute, and the breathing was thoracic in character. The temperature was 96.8°.

He complained of severe pain in the right side of the abdomen. There was great tenderness in this region and rigidity of the abdominal muscles to the right of the umbilicus. There was no dulness to percussion in the right loin. No fracture of ribs or pelvis was made out.

Shortly after admission he was sick and vomited, but the vomited material contained no blood.

He was put to bed at once and surrounded with hot water bottles. The foot of the bed was raised, and he was given morphia ($\frac{1}{4}$ gr.) to relieve the pain.

About $3\frac{1}{2}$ hours after admission he passed urine which contained a trace of albumen and hyaline tubecasts but no blood.

A

A careful enquiry was made for any signs of pre-existing kidney disease, but the result was negative.

1st.February. The abdomen is slightly distended, and there is still pain, tenderness, and rigidity in the right loin. The percussion note all over is tympanitic. He has vomited several times to-day. He is passing about 30 ounces of urine in 24 hours, and there is no pain or increased frequency of micturition. The urine contains no blood, but a distinct trace of albumen. The mucous sediment contains a considerable quantity of granular debris. There are also numerous hyaline casts which owing to the debris lying round them and over them in some instances look like granular casts. That this is not so can be made out by careful observation.

3rd.February. He is somewhat better than he was on admission, but at times his pulse is very weak. Today there is a distinct improvement. The pulse numbers 112 and is not nearly so thready. The respirations are 30 per minute. The temperature tends to be slightly subnormal.

The abdomen is more distended today. The percussion note is tympanitic all over. There is still slight pain and considerable tenderness and rigidity in the right loin. There is no diminution of the area of percussion dulness of the liver and spleen.

He is getting small quantities of fluid by the mouth and is being freely stimulated with brandy.

A glycerine suppository was administered to-day, and after it a normal motion containing no blood was passed.

The

The urine still invariably contains albumen and hyaline casts, and to-day urates were present, but no blood has yet been observed. Every sample of urine that is passed is being examined.

4th.February. Since last evening the temperature has been slowly rising until this afternoon it was 100.2°. Tonight he passed two very large claylike motions. Shortly thereafter he became very collapsed. The face was cold and pallid and covered with perspiration. The pulse could hardly be felt, and the temperature dropped to 98°. He complained of great abdominal pain, and had to have a cage stretched across him to prevent the bedclothes from touching his abdomen. Morphia ($\frac{1}{4}$ gr.) has been administered hypodermically. There is not quite so much distension now as was present yesterday. The percussion note is tympanitic all over except in the right loin where there is slight dulness.

5th.February. He never rallied after yesterday evening. He was delirious all night and tried constantly to get out of bed. Strychnine was given several times hypodermically. He died at 9.30 this morning.

At the post-mortem examination five pints of uncoagulated blood were found in the abdominal cavity. The intestines were unruptured. They were covered with bile, but not glued together. The liver was ruptured on the upper surface of the right lobe. The fissure extended for several inches from before backwards in a line with the gallbladder. It was about $1\frac{1}{2}$ inches in depth and its sides were necrosed.

The

The gallbladder was distended and contained clear fluid. The cystic duct was obstructed - probably an old lesion.

The right kidney had a small fissure running transversely on the anterior surface, involving only the cortex and not reaching the pelvis. The capsule also was ruptured, and a small quantity of blood had escaped into the tissues round the kidney.

The spleen was healthy.

Death in this case was apparently due to a secondary haemorrhage occurring from the liver into the peritoneum on 4th.February. This was evident from the amount of recent uncoagulated blood in the peritoneum, and from the sudden signs of collapse occurring on the evening of 4th.February. Had this haemorrhage not taken place, it is probable that he would have recovered from the injury to the kidney.

It is worthy of note that urine passed 3½ hours after the accident contained hyaline tubecasts. This cannot be explained on the ground of pre-existing kidney disease, for the history does not bear this out. From the day of admission right up to the time of his death the urine contained albumen and hyaline tubecasts but never any blood. The absence of haematuria is remarkable when one remembers that in this case there was a distinct rupture of the parenchyma of the kidney.

The kidney seems so well protected by its situation from all external violence that it is almost surprising that so

so many cases of injury to this organ occur. But in reality the kidney is not so well protected as would seem at first sight. No doubt the ribs are a partial protection from injury coming from above, but in some cases this has been a source of danger, as, according to Morris the broken ends of ribs have occasionally penetrated the kidney.

Subparietal injuries of the kidney may be caused in various ways. J.Knowsley Thornton in his Harveian Lectures (Illust.Med.News Vol.V. 1889 p.235) says contusion may "happen by a general violent shake of the body driving the kidney against the spine or ribs". Morris (Vol.I. p.150) describes a case where a supcapsular haemorrhage occurred from muscular strain in lifting a heavy box. This as a cause of injury to the kidney is probably extremely rare. The most common causes mentioned in the literature of the subject are a fall where the sharp corner of some object comes with force against the loin, and crushing of the abdomen, as for instance between the buffers of two railway carriages, or by the wheel of a cart crossing the abdomen.

In one of my cases the patient fell fifteen feet on to the deck of a ship striking his side against the corner of the hatch. In another case he was crushed between the buffers of two carriages, and in the third case it was a railway engine which crushed his trunk against a wall.

It is a recognised fact that much damage can be done to the kidneys and other viscera without any external sign of violence to the parietes. In case XVII. both liver and kidney were ruptured, but no bruising of the parietes was apparent. In

In case XVI, however, ecchymosis did appear in the loin. Many cases are related by different observers where the kidney was torn from its attachments to the renal vessels, or completely divided in two, or beaten into pulp without any sign of injury to the abdominal wall.

In one of my cases, which was verified by postmortem examination, rupture of the kidney amongst other things was diagnosed. In the other two recovery resulted, but this does not render it incredible that a rupture had occurred and healed. There is not the slightest doubt that many cases of lacerated kidney do recover. In a case of Mr.Holmes' (Medical Times 1860 p.76) the patient was thought to have ruptured his kidney. He recovered, but in two years was readmitted and died of renal disease. At the postmortem examination the cicatrix of the old rupture was perceptible in the substance of the kidney. In case XVII. also the patient would probably have recovered, had it not been for the haemorrhage from the liver which occurred the fifth day after the accident.

In cases XV. and XVI. however it is more probable that the lesion was not a rupture but contusion of the kidney with possibly some subcapsular haemorrhage, as in the case described by Morris (Vol.I. p.150).

In most of those traumatic lesions a certain amount of nephritis appears to be set up, as evidenced by the presence of albumen and tubecasts in the urine. In case XVII. hyaline casts were found in the urine that was passed 3½ hours after the accident.

It

It is of great interest to observe the course of events in the two cases that recovered. In both of them first the tubecasts disappeared, then the blood disappeared, and finally within a week or two the albuminuria passed off.

This, so far as I know, has not been pointed out by any writer on the subject, and it seemed to me worth while to examine every sample of urine passed in order to see in what way the signs of nephritis in the urine would clear up. In looking back over the literature of traumatic lesions of the kidney since 1860 one does not find tubecasts frequently mentioned. Most writers limit their description of the urine to the mere mention of the presence of blood and albumen. Occasionally "bloodcasts" are mentioned, once or twice hyaline tubecasts are noted, and one or two writers observed "broken tubules" in the urine.

That trauma to the kidney may cause without rupture a slight nephritis which passes off in a few days Menge's researches on palpation of "movable kidney", quoted by Edebohls (Medical Record 4th. May 1901) seem to corroborate. He examined the urine before and after palpation of the organ in 21 cases of "movable kidney." In 6 cases there was no alteration in the urine. In 15 cases where the urine was normal before palpation, albumen and blood were present after palpation. In this connection it is interesting to bear in mind the transitory albuminuria appearing for a day or two after operation in several of my cases of "movable kidney".

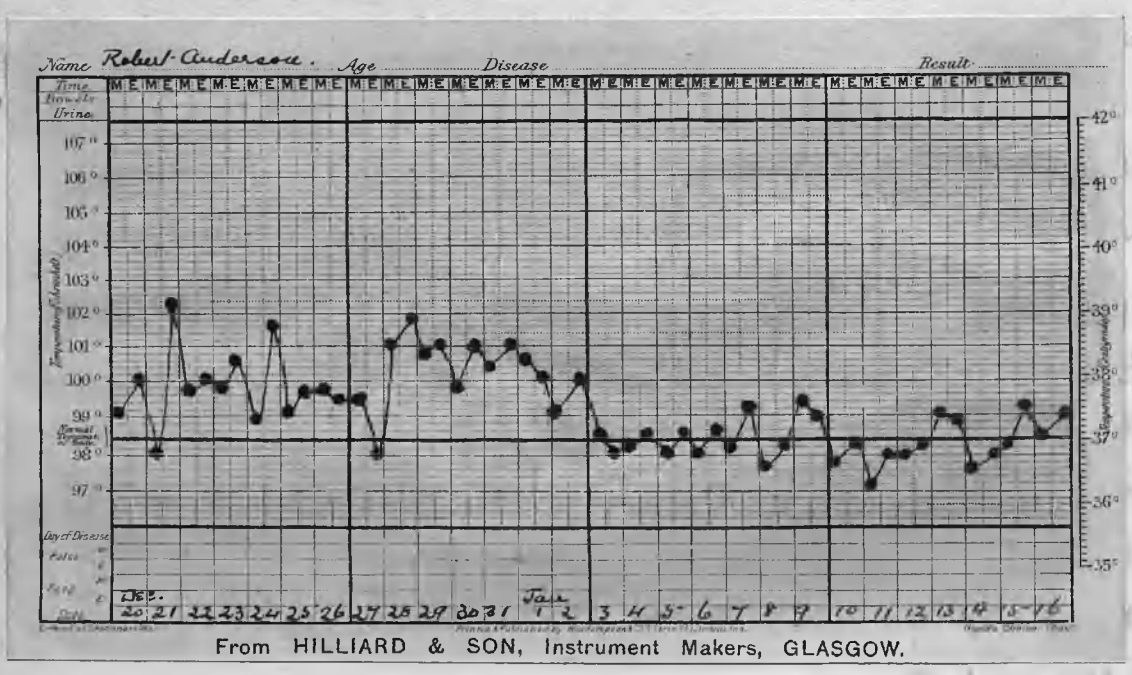
Haematuria after rupture or injury of the kidney is not invariably present. Morris describes several cases where this was

was not present owing to the blocking of the ureter with blood-clot or from other causes. In case XVII., although the rupture was verified postmortem, yet there was no haematuria. In this case the rupture was superficial and confined to the cortex, and thus any blood that was extravasated would find it easier to drain towards the peritoneum than towards the pelvis of the kidney.

In some cases of injury diminution or complete suppression of urine has been described, but in none of my cases was there marked diminution in the quantity of urine.

It might be interesting if one could keep such cases of injury to the kidney under observation for a few years to watch whether such injuries might not determine, if not actually cause, a condition of chronic Bright's disease. In Holmes' case already quoted the patient was readmitted to Hospital two years after the injury and died of renal disease. Unfortunately it is not stated definitely that he died of chronic Bright's disease; his condition is merely described as one of "advanced renal disease".

If chronic Bright's disease did follow an injury to the kidney would it be unilateral? That unilateral Bright's disease may occur Edebohls' article in the Medical Record (May 1901) would lead one to believe. This, however, is not corroborated, so far as I can learn, by the results of post-mortem examinations, or by the observations of other writers on the subject.



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The next series consists of three cases of "perinephritic abscess," which, though somewhat obscure as regards causation, are still of interest, as the condition does not occur very frequently. In the summary at the end of these cases I have made no attempt to write an elaborate description of perinephritic abscess in general, but have contented myself with emphasising one or two of the leading features of these cases.

Case XVIII. R.A. a man aged 40 was sent in to the Royal Infirmary as a case of perinephritic abscess on 20th.December 1901.

He enjoyed excellent health up till eight weeks before admission when pleurisy with effusion developed in the right side. This cleared up under the usual treatment without paracentesis needing to be performed. Five weeks later when convalescent he was allowed out for a little, and thinks he must then have caught a chill. That day he complained of severe pain in the right loin, and this pain has continued ever since. The pain was so severe that he had to walk stooping slightly forward and to the right side. Also in sitting he inclined to lean over to the right side, and when lying in bed he kept the right thigh drawn up to relieve the pain. He had no pain or undue frequency of micturition, and he never observed

observed anything wrong with the urine.

When admitted to Hospital on 20th.December he looked extremely ill. The body was badly nourished. The face was very pale with sunken eyes and dark rings under the eyes. He lay in bed on his back with the knees drawn up, and not daring to move on account of the pain. The temperature was 99°, the respirations 20 per minute, the pulse 88 per minute and of low tension.

He complained of pain localised in the right loin and not shooting down the ureter or to the testicle. There was also great tenderness in this region, and the abdominal muscles to the right of the umbilicus were kept very rigid. There was no general distension of the abdomen, and no tumour could be felt on account of the muscular rigidity.

There was very slight relative dulness at the base of the right lung behind, and diminution in the intensity of the breath sounds. No marked alteration in Vocal Fremitus or Resonance was observed. A few coarse mucous râles accompanied inspiration. He had a short cough with a little mucopurulent spit. He tried to restrain the cough as it aggravated the pain in the loin. There were no signs of consolidation or cavity in either lung.

Nothing abnormal was discovered in the heart.

The urine was amber in colour, acid in reaction, and had a mucous deposit. No albumen, pus, blood, sugar, or tube-casts could be found.

The liver seemed normal in position, but the area of dulness

dulness was increased downwards so that the lower border in the middle line was only about two inches above the umbilicus.

21st.December. The pain was so severe in the right loin last night that morphia (1/3 gr.) was administered hypodermically. The temperature was 99.8° in the evening, the pulse 86, and the respirations 24 per minute.

This afternoon an incision was made in the right lumbar region in the usual site for nephrotomy. There were very dense and extensive inflammatory adhesions round the kidney which rendered it difficult to examine the organ thoroughly. These adhesions extended from the posterior border of the liver right down to the brim of the pelvis, and were very dense, all the structures in the right loin being matted to the capsule of the kidney. No pus was found at the time of operation, but the upper part of the inflammatory mass could not be thoroughly explored.

23rd.December."The temperature has risen tonight to 102°, the pulse is 100, and the respirations number 27 per minute. He is very weak and has vomited a great deal since the operation. The urine to-day contains urates and a faint trace of albumen, but no blood, pus, or tube casts".

25th.December. "To-day on dressing the wound some pus was found coming from the upper and deeper part of the wound. This was thought to be due to the rupture of a pocket of pus which had not been reached by the operation".

From that day onward he continued to improve steadily. The temperature varied for a few days longer, but he gained strength

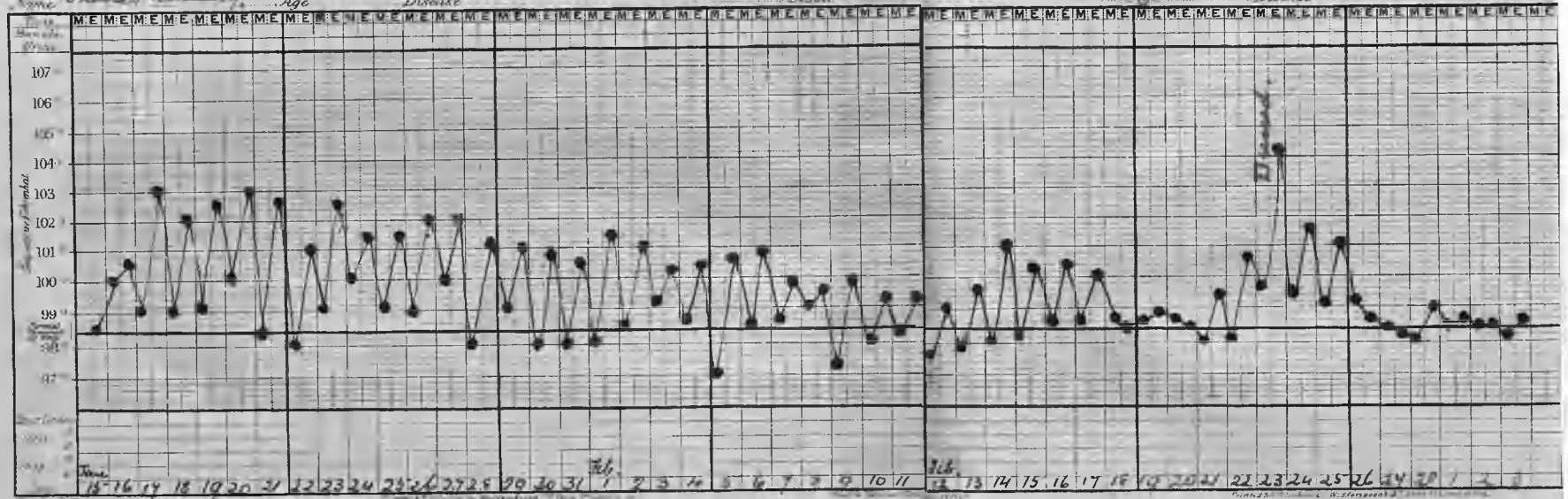
strength steadily, and grew fatter every day. By the middle of January the wound was completely healed, and the pain entirely gone, so he was allowed out of bed for a little. He was sent home on 24th. January, apparently perfectly well, but with the area of hepatic dulness still enlarged to much the same extent as on admission.

In the beginning of April he returned to show himself. He was looking the picture of health and complained of nothing except a slight pain in the right heel which he said had been present ever since the operation. On examining the liver the area of percussion dulness was found to have receded to its normal limits.

Here we were evidently dealing with a case of perinephritis and localised peritonitis arising from a preceding pleurisy. The inflammatory process had extended through the diaphragm. If we say that the pleurisy was tubercular, then we must acknowledge that it was a tubercular perinephritis.

It is extremely improbable that the perinephritis was primary and the pleurisy a secondary infection through the diaphragm. It is not likely that the perinephritic condition, which must have been present all the time, would have remained unnoticed while the patient was being treated during several weeks for pleurisy. The whole story of the illness seems to negative this explanation.

It is interesting to note that the urine remained practically normal all through except for an occasional faint trace of albumen, which was probably due on at least one occasion to the


Name
Age
Disease
Result
Age
Disease
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the administration of chloroform. Pus, blood, and tubecasts were never found. Oxalate crystals were occasionally present.

The increase in liver dulness can probably be explained by the matting of tissues round about the liver.

Case XIX. T.K., a man aged 36, was admitted to Barnhill Hospital on 15th.January 1901, complaining of cough, and pain always present in the small of the back and occurring in the urethra during and after micturition.

There was nothing in his story which threw light upon the cause of his illness. As he was a poorhouse patient he had probably undergone a good deal of privation and exposure before admission, but there was no distinct history of chill or injury. He never suffered at any time from swelling of the feet or under the eyes. The pain in the small of the back and in the urethra during micturition came on gradually shortly before admission, and was accompanied by a general feeling of weakness and lassitude. There was no history of anything like renal colic.

When admitted to Hospital he was not over well nourished and looked very ill. On examining the lungs the percussion note was resonant all over, and nothing abnormal was heard on auscultation beyond numerous mucous râles accompanying inspiration and evidently indicative of bronchitis. No pleural friction was heard, and there was nothing in the physical signs to make one suspect tubercle. He had never been troubled

troubled with Bronchitis previously. On palpating the abdomen there was slight tenderness and fulness in the right loin but nothing definite could be made out.

He passed about 30 ounces of urine in 24 hours. The urine was amber in colour, acid in reaction, and had a specific gravity of 1014. It contained a trace of albumen but no blood and no pus. In the mucous sediment were found granular tube-casts.

A bougie was passed but no stricture was found, and no calculus could be felt in the bladder with the sound. Unfortunately there was no cystoscope at command, so that it was impossible to examine the openings of the ureters into the bladder.

It was thought that he was suffering from Bright's disease, and he was treated accordingly, but the temperature, which was intermittent in character, and varied between 98° and 103° was rather puzzling. The urine remained unchanged, and the pain came more into the loin compelling him to lie with the thigh flexed to give himself ease.

On 6th.February in the right lumbar region behind a swelling appeared which increased in size, and looked as if it were going to point. On 10th.February this abscess was opened and a large quantity of pus escaped. The abscess cavity was very deep, but no definite connection could be made out with the kidney.

After this the temperature dropped and continued normal. He improved in his general health, and the pain in the loin and in

in the urethra disappeared. The sinus discharged freely for some time and then gradually healed. He was dismissed from Hospital on 22nd.March.

All the time he was in Hospital his urine retained the same characters. Blood and pus were never observed in it. When he was dismissed, it still contained a distinct trace of albumen, and some granular casts. Nothing like renal colic ever occurred. Tubercle bacilli were not found in the urinary sediment.

The pulmonary symptoms cleared up as the patient's health improved.

It is a little difficult in this case to make out the exact relation between the urinary, the pulmonary, and the perinephritic conditions. Knowing that the man was subject to considerable privation and exposure before admission, one is inclined to the belief that a chill gave rise to the Bronchitis and the perinephritic condition simultaneously. If this had been the course of events one would have to explain the urinary condition either as secondary to the perinephritic abscess, or as due to a separate and pre-existing chronic Bright's disease probably affecting both kidneys. The latter of these suppositions is at least possible. The former is a little more difficult to accept, for the tubecasts which were present in the urine were granular, not hyaline and thus they indicate intrarenal disease existing for some time. It seems incredible that a Perinephritic Abscess could have acted

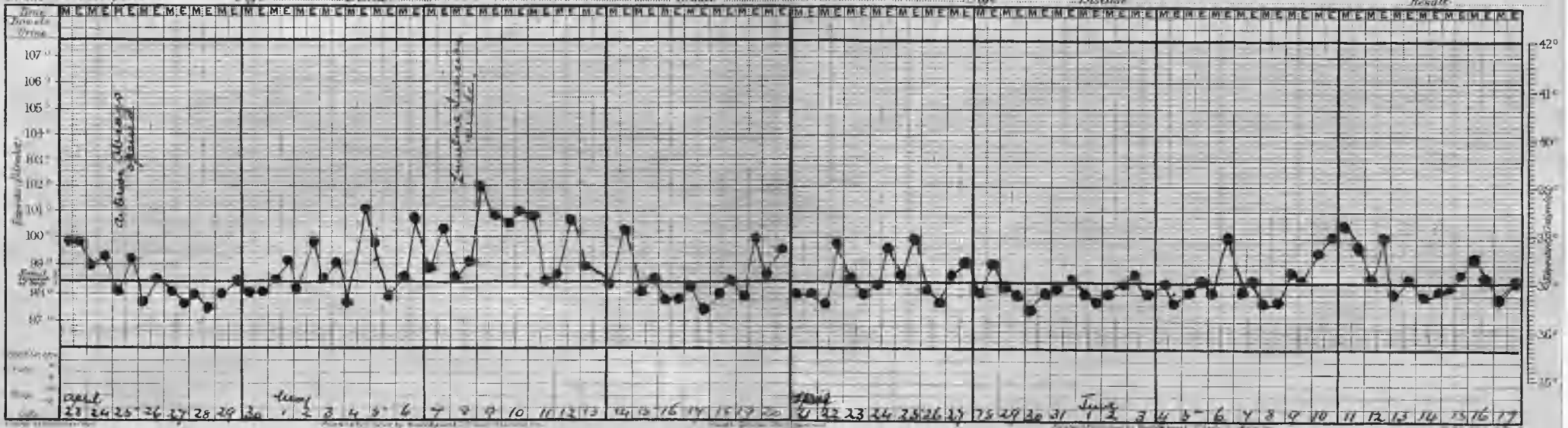
acted on the kidney for such a length of time as to produce in it a condition which would cause granular casts to appear in the urine without previously having caused the patient to take to his bed and seek medical aid for other symptoms, e.g. rigors, lumbar pain &c.

Another explanation is that the intrarenal condition may have been the origin of the perirenal condition. The patient may have been suffering from calculus in the kidney or renal tuberculosis. Had it been renal tuberculosis, however, there would probably have been indications of tubercle in other organs. Bacilli would have been found in the urinary sediment, and the clamant symptoms would not have entirely disappeared with the escape of the pus. It is my opinion that this patient had been suffering from calculus in the kidney for some time without any symptoms having arisen that would draw the patient's attention to his condition, and that the perinephritic abscess occurred secondarily to this as is frequently the case.

The pulmonary condition may have been purely a coincidence, or it may have originated in a slight pleurisy arising by direct infection through the diaphragm from the perinephritic abscess.

Case XX. Mrs.W., aged 37 was admitted to the Royal Infirmary on 3rd. September 1901.

She always enjoyed excellent health until the onset of this


Name Mrs. Hughes
Age
Disease
Result
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this illness. She had been married for thirteen years, but had had no family and no miscarriages. She had never menstruated properly all her life. She felt ill every month, but never saw any discharge.

In September 1899 she felt for the first time in a poor state of health, although she could not point to anything definitely wrong with her. Shortly thereafter pain appeared in the left lumbar region more in front than behind, and occasionally shooting down the thigh. She had frequent shivering fits, and the pain which gradually became more severe made her sweat and feel sick, but was never unbearable.

She found that by stooping forward when she walked, or flexing her left knee when standing the pain was not so severe. There was distinct tenderness in the left loin, but no tumour could be felt.

Just about this time she noticed that her urine was muddy, and often deposited a white sediment on standing. No blood was ever seen in the urine. She had to get up once or twice every night to pass water, and during the day she passed it very frequently. There was no pain on micturition. There was no history of anything like renal colic, and she was never troubled with swelling of the feet or under the eyes.

In March 1900 a swelling like an abscess appeared to the left of the umbilicus. This was opened in the Royal Infirmary on 25th.April 1900 and some pus escaped. On 8th.May a lumbar incision was made down towards the kidney, but no pus was got at that time. A day or two later, however, pus appeared in the lumbar wound and has discharged freely ever since.

After

After the operation the pain in the loin disappeared and the frequency of micturition was diminished. The temperature also, which had been fluctuating considerably came gradually down to normal, and remained there all the time she was in Hospital. The condition of the urine gradually improved after the operation, until at the time of dismissal the pus had entirely disappeared. A note was kept of the amount of urine passed daily, but no marked variation in the quantity was observed.

She was dismissed from Hospital with the lumbar sinus still discharging. In September 1900 the anterior abdominal wound reopened and both sinuses have been discharging pus freely ever since.

On 3rd.September 1901 she was again admitted to Hospital to see if anything could be done to close the sinuses. When readmitted she was very thin. The lungs shewed nothing worthy of note. The precordial dulness was normal, the apex beat was in the 5th.interspace, and the second sound was accentuated in the aortic region. A sphygmographic tracing shewed a normal arterial tension.

The left kidney was enlarged and tender, but immobile, and no variation in its size could be made out on examining it from day to day. Nothing abnormal could be made out in the right kidney by abdominal palpation. The anterior and posterior lumbar sinuses were discharging freely and there was no doubt that, although a probe could not be passed, that they communicated in a tortuous manner, for on pressing on the orifice of one sinus pus escaped from the orifice of the other.

The

The hepatic and splenic areas of percussion dulness were normal in size and position.

The urine was muddy straw in colour, slightly acid with a considerable deposit of pus, and a specific gravity of 1015. It contained abundant albumen but no blood. In the sediment were found pus corpuscles and hyaline and granular casts.

A cystoscopic examination of the bladder was made without chloroform. The orifice of the left ureter was discovered with difficulty on a ridge of mucous membrane. The orifice was ragged and jets of pus were seen issuing from it. The right ureter seemed normal. The trigone was of a deep red colour but the rest of the mucous membrane was pale. The position of parts inside the bladder was much distorted, as if there were adhesions binding down and dragging upon the floor of the bladder. A vaginal examination revealed that the uterus was fixed, and that there was a considerable degree of matting and thickening on either side of the uterus.

The fundus of each eye was examined with the ophthalmoscope, but no signs of Retinitis were discovered.

The sinuses were scraped several times and their mouths packed with gauze to try and make them heal up from the bottom, but without success. The patient refused to wait longer in Hospital and went home on 6th.January.

All the time she was in the ward from September to January the temperature kept normal. The pus in the urine gradually diminished, but there was always some present and occasionally a little blood. Abundant albumen and granular tubecasts were always present. Tubercle Bacilli were never found

found in the urinary sediment and there was no evidence of amyloid disease.

While in Hospital she did not menstruate once, although she suffered from pain in the small of the back at regular intervals corresponding apparently to the menstrual periods.

There is no reason to doubt that this was a case of perinephritic abscess. Unfortunately the patient did not come under observation until the illness had been going on for some time, and it is difficult to say whether the extrarenal was the cause of the intrarenal condition, or vice versa. According to the patient's story they seem to have come on simultaneously; she noticed the change in her urine just about the time that she first experienced the characteristic symptoms of perinephritic abscess.

If the primary lesion was intrarenal, it would probably be either calculus or tubercle. As regards calculus there were no signs or symptoms to corroborate this diagnosis. The tubercular hypothesis is in no better plight. She shewed no indication of tubercle in any other organ, there was no sign of infection of the bladder, the temperature after the pus round about the kidney was given a means of egress remained normal, and no tubercle bacilli were found in the urine.

If the origin was extrarenal it is difficult here also to find an explanation which will agree in all points with the facts of the case. There is no history of chill or trauma. There was, however, undoubtedly some pelvic disorder judging

judging from the story of childlessness and amenorrhoea. This was confirmed by the vaginal examination whereby evidences of Parametritis were found, and by cystoscopic examination which shewed distortion of the floor of the bladder apparently due to adhesions dragging upon it. It is possible that the inflammatory condition may have spread upwards to the kidney from the pelvic organs.

Henry Morris (Surgical Diseases of the Kidney Vol.I. p.270) classifies perinephritis into three divisions - sclerosing, lipomatous, and suppurative perinephritis -. With the first two varieties my cases have nothing in common. Two of them XIX. and XX., fall undoubtedly into the third division. Case XVIII., also probably falls into this division, but it was operated on at an early stage before suppuration had become extensive.

It is difficult to classify them according to their causes, but if the explanation I have appended to each case is correct, then one of them (XIX.) was due to an intrarenal cause-calculus of the kidney. The other two were due to extrarenal causes. Case XX., apparently originated in some parametritic condition spreading upwards. Duffin (Medical Times 1870 p.363) out of the twenty six cases that he collected found two which had their origin in a pelvic cellulitis. Case XVIII., seemed to be secondary to pleurisy with effusion. I can find in the literature of the subject no mention of any case where perinephritis followed a simple pleurisy, but Roberts (American Journal

Journal of Science LXXXV., 1883 p.393) describes perforation of the diaphragm in cases of Empyema or Pulmonic Abscess as a cause of Perirenal Abscess.

The condition of the urine in these cases is of interest. In one it remained normal throughout his illness. In another albumen and granular casts were present, and after the perinephritic condition was apparently cured the urine retained the same characters. In the last case blood albumen, pus, and granular casts were present all the time, and the patient was dismissed in much the same condition every way as on admission. In none of my cases was there any sign of vesical irritation.

Out of twenty six cases analysed by Duffin, "two had blood, and six had pus in their urine; two suffered from vesical irritation; five had renal disease without bladder signs; twelve were without urinary trouble of any sort".

The symptoms in all my cases were very typical. The general debility preceding the presence of the more acute symptoms, the high temperature, rigors, pain, and tenderness in the loin, and the flexing of the thigh to relieve tension correspond with the descriptions of most writers on the subject.

In two of them it may be stated there were pulmonary symptoms without going into the relation of those symptoms to the perinephritic condition, as that was discussed under each case. Bowditch, quoted by Roberts (American Journal of Science) says that out of his nine cases "auscultatory symptoms of pulmonary mischief were discovered by him in seven".

No pressure symptoms were noticed in my cases in the way

way of localised anaesthesiae, or paralysis, or oedema of any part, but Duffin records several cases where these were present.

The treatment is to open the abscess at once, otherwise it will rupture externally, or into the pleura, or one of the hollow viscera. Morris says that the tendency to open spontaneously in the loin is not great in perinephritic abscess, but in two out of my three cases the abscess pointed externally, one in the lumbar region behind, and the other at the side of the umbilicus.

The cases now to be described are examples of Renal calculus. One of them was very typical, another was accompanied by an unusual complication which carried off the patient, and in the case of the third there was some difficulty in arriving at a diagnosis.

Case XXI. J.M., a miner, aged 25, was admitted to the Royal Infirmary on 25th.October 1901 complaining of pain in the left lumbar region.

On 21st.September 1901 when at work in the mine he was seized with an agonising pain in the left loin. It was most excruciating and made him sick and vomit. In an hour or two it became less severe, but ever since then up till a week ago, when it ceased entirely, he has had a continuous dull aching pain with a severe exacerbation about twice a day. At those times the pain was very severe, and made him burst into perspiration. It also caused him to shiver, to feel faint, and to vomit. The pain was distinctly localised to the left lumbar region, and did not shoot to the testicle or down the thigh.

On 21st.September, the day that the pain first commenced he passed very little urine, but next day he passed a large quantity. Since then he has always passed about the same quantity daily. He has never noticed any swelling in the loin.

There

There was no blood in the urine on 21st.September, but next day it was present, and since then up till six days ago blood has always been more or less in evidence. At first the urine was quite red, but it has gradually become paler, until a week ago the blood entirely disappeared. There has been no pain in the urethra while passing water, and no undue frequency of micturition.

He did not remember having received any injury in the loin, and there was no history of any previous attacks like this one. His general health had always been excellent, and there was nothing worthy of note in the family history.

When admitted to Hospital on 25th.October he felt and looked in perfect health, and he was suffering at that time from no pain. Nothing could be made out on palpating the abdomen, nor was there any tenderness in either lumbar region.

Nothing of interest was made out in the heart or lungs. The testicles, prostate, and spermatic cords were normal, and no signs of tubercle were observed in any part of the body.

The urine was amber in colour, acid in reaction, and had a specific gravity of 1014. It contained a trace of albumen, but no blood or pus. The mucous sediment contained a few leucocytes, but no tubecasts were found.

The bladder was examined with the cystoscope. The mucous membrane for the most part looked healthy, but the lips of the orifice of the left ureter were pouting, swollen, and injected. A little cloudiness was observed every now and then obscuring the view of the left ureter. This was thought at the

the time to be possibly due to escape of blood from the ureter, and on examining a specimen of urine passed immediately afterwards blood was found to be present. One cannot be sure, however, that the blood in the urine was not due to the passing of the instrument as blood was never found again.

An X Ray photograph of the kidneys was taken with a negative result. No tubercle bacilli were found in the urinary sediment.

He was kept in Hospital until 7th.November, and although he was made to take violent exercise, yet the paroxysms of pain and haematuria did not reappear. He was sent home with instructions to return if there was any recurrence of the symptoms.

All the time he was under observation his urine as a rule, but not invariably, contained a faint trace of albumen, but never any blood, pus, or tubecasts. The temperature always remained normal.

This seems to have been a very typical case of renal calculus. It is interesting to note the condition of the orifice of the left ureter seen on cystoscopic examination, and to compare along with it the similar condition observed in case IX. This pouting condition of the lips of the ureter, and the ejection from them of spouts of pus or blood is a very valuable diagnostic sign in unilateral renal conditions, especially where one is dealing with calculus or tubercle.

Case XXII.

Case XXII. Mrs.H., aged 57, was admitted to the Royal Infirmary on 1st. February 1902.

Thirty years ago the patient was in bed for three weeks suffering from what the doctor called "inflammation of the left kidney". At that time she had pain in the left loin which was not very severe. She passed very little water, but there was no oedema of any part of the body. Ten years ago she had an attack of much the same nature affecting the left side and lasting for four or five weeks. Twenty five years ago she passed five small stones with great pain in the left side and sickness and vomiting. Since then she has never seen any gravel in her urine.

Between the two attacks of inflammation of the kidney, and from the last attack up to the commencement of the present illness she enjoyed moderately good health. She has always, however, been subject to pain in the left side especially when tired. This pain was never severe, and was always confined to the loin. It would last for a few days at a time and then pass off. On those occasions she passed very little urine, and she always noticed a tumour appear in her left side, which disappeared as the flow of urine increased. The urine was often thick and muddy, but she never noticed blood in it.

Seven weeks before admission and without any special cause known to her, she was seized with a shivering, and at the same time the swelling appeared in her left side and gradually increased. Since then she has had almost constant pain in the left loin shooting down to the labia but not to the thigh. The pain was at no time excruciating. Dr.Dewar who attended her

her outside stated that the tumour in the left loin was quite easily felt and caused a bulging in the lumbar region behind. On palpation it gave one the sense of deep fluctuation.

She progressed favourably until seven days before admission when difficulty was experienced in getting the bowels to move. She had always been constipated, and the constipation was always worse when the swelling was present in the left side. For a week before admission there was no satisfactory motion, and the abdomen became much distended.

She always enjoyed good health in every other way.

She had been married 28 years, and had had 5 children of whom one died in infancy. She stated that the pain and trouble in her left side were generally worse when she was pregnant.

When admitted to Hospital on 1st.February she was very emaciated; the face was pinched and drawn and she looked extremely ill. The temperature was normal. Examination of the lungs and heart revealed nothing worthy of note. The pulse was thin and wiry and occasionally missed a beat.

The abdomen was distended and gave a tympanitic note to percussion, except in the left flank where there was slight relative dulness. The liver dulness was normal. The arrangement of the coils of bowel could be seen quite distinctly through the abdominal wall and peristalsis was visible. She had slight pain and tenderness in the left flank, but this was masked by the general tenderness of the abdomen.

The urine was dark amber in colour, acid in reaction, and

and had a specific gravity of 1024. No tubecasts were found and no blood was present, but the urine contained a distinct quantity of albumen and some pus.

The bowels had not moved for a week before admission, and during that time she passed no flatus. 'Per rectum' one could only feel a few hard masses. Several olive oil and soap and water enemata were given on the first two days after admission, but with practically no result. On 4th.February a rectal tube was passed up the rectum for 14 inches and 30 ounces of olive and castor oil were allowed to flow into the bowel by syphon action. No movement of the bowels resulted, and no flatus was passed.

On 5th.February, as she was getting weaker, chloroform was administered. Under the anaesthetic distinct bulging could be made out in the upper part of the left flank behind, and over this an incision was made. After cutting through the parietal layers what seemed to be pelvis of the kidney appeared in the wound. On incising this there escaped about 10 oz. of pus and colloid material, which on standing coagulated into a jelly-like mass. A large stone was felt in the pelvis with numerous branches extending into the calyces. A portion of this weighing 3½ oz. was removed, but part of it could not be got out on account of its shape and adhesions. The edges of the pelvic wound were stitched to the edges of the parietal wound. The pelvis was then douched out and packed with gauze.

She was very sick, and really never rallied after the operation. The bowels did not move and she died on the morning of 5th.February.

Postmortem

Postmortem examination.

On opening the abdomen from the front a large sac of pultaceous faeces was opened into, which lay right across the lower part of the abdomen. This was distended caecum and the distension was due to inflammatory adhesions causing a valve like obstruction between caecum and ascending colon, and also in part due to the direct pressure of the pyonephrosis upon the descending colon. There was congestion of the peritoneal surface of bowel all over, but otherwise it was healthy.

The left kidney was greatly enlarged. The capsule was thickened and adherent. The pelvis was enormously distended partly with colloid material and partly with calculus. The kidney substance was converted into large sacs containing colloid material and branches of calculus also. On cutting sections of the thickest part of the kidney tissue, which only measured ¼ inch round these sacs, one could make out a few traces of tubules and glandular tissue, but it was so altered by inflammatory tissue, that it was impossible to tell from looking at the section alone that it had been taken from the kidney.

The ureter was thickened and distended. The bladder was normal. The heart was soft and fatty, and the lungs were emphysematous.

It is interesting to note the long duration of the calculous history in this case. The first symptom dates back 30 years. Since then she has had only two severe paroxysms, but all along there has been a history of intermittent hydro-or pyonephrosis.

The

The intestinal obstruction, though not directly due to the pressure of the hydronephrotic kidney on the bowel, still was undoubtedly secondary to the pyonephrotic kidney, and to the inflammatory adhesions caused by it.

ase XXIII. M.H., a girl aged 3 years, was admitted to the Royal Infirmary on 22nd.October 1901, suffering from haematuria.

About the end of July 1901 her mother noticed that she was passing blood in her urine. For the first day it was bright red, and then it became gradually paler, until in a few days it had resumed its normal colour. After three weeks blood again appeared and continued for a few days, and since then every two or three weeks there has been a smart attack of haematuria. Blood was last present on 19th.October.

The blood always came mixed up with the urine, and never alone either before or after micturition. She never had pain or undue frequency of micturition.

There is no history of scarlet fever, and there has been no swelling of the body, and nothing indicative in any way of Bright's disease. She always took her food well, and was not growing thinner before admission. She never had any enlarged glands, or suffered from diarrhoea or swelling of the abdomen.

Two of her aunts died of "Decline", but otherwise the family history was good.

When admitted to Hospital on 22nd.October she was a wellnourished child, and had no oedema of any part of the body. She

She took her food well and looked the picture of health. The lungs and heart were normal and she had no cough.

When asked if she had any pain she pointed to her abdomen, but it seemed probable that the mother had put this into her head, as the child while it pointed was laughing and apparently quite comfortable. The abdomen was rather tumid, but there was absolutely no tenderness on palpation, and no tumour or fulness could be felt in either loin.

The urine was amber in colour, acid in reaction, and had a specific gravity of 1023. It contained no albumen, blood, pus, sugar, or tubecasts, but a few leucocytes were entangled in the mucous sediment.

On 23rd.October she was put under chloroform and carefully examined. Nothing could be made out by palpation either in the lumbar or hypogastric region. A sound was passed into the bladder, but no calculus or any abnormality of the mucous membrane could be felt. Unfortunately she was too young and the urethra was too small to admit of the use of the cystoscope.

On the afternoon of 26th.October without warning blood appeared and continued until 27th.October in considerable quantity. The urine kept normal again until 10th.November when blood again appeared and continued without pain until 13th. November. It was again present from 1st.to 6th.December, on 11th.and 12th.December, from 20th.December to 12th.January, on 24th.January, and on 11th.February.

Almost all the time she was in Hospital there was a faint trace of albumen in the urine, even when blood was absent. Occasionally hyaline tubecasts were seen in the sediment. Leucocytes

Leucocytes were always present, and although always in fairly large numbers, yet never sufficient to give a positive result with the 'Liquor Potassae test'.

The sediment was centrifugalised frequently and examined for tubercle bacilli and tags of tumour tissue, but always with a negative result.

There never was any warning in the way of pain or rise of temperature to indicate when haematuria was going to commence. The temperature kept normal all along. She never suffered any pain, nor was there the least degree of tenderness in any part of the abdomen. All the time she was in Hospital she was stout and well nourished, and looked in perfect health. She was allowed to get up and run about the ward, but this seemed to have no effect on the haematuria one way or the other. She was put upon a mixture containing iron alum, but this apparently produced no result.

She was carefully watched to make sure that one was not dealing with a case of precocious menstruation, and it is quite certain that this was not the explanation.

An X Ray photograph of both kidneys revealed nothing. A drop of blood was examined from the finger. Haemoglobin was 85%, and the red blood corpuscles numbered 4,600,000. There was nothing peculiar about the red corpuscles, and therewas no marked alteration in the number of white corpuscles.

She was sent home on 12th. February 1902 in the same condition as when admitted.

This case was very obscure. Haematuria was the cardinal

cardinal symptom and beyond that there was very little upon which to base a diagnosis. The presence of albumen and the occasional presence of hyaline tubecasts seemed to indicate a renal rather than a vesical condition. If we do accept that the condition was renal, it is a little difficult to decide whether we were dealing with a case of renal tuberculosis, renal tumour, renal calculus, or essential haematuria.

Essential haematuria as described by Morris (Vol I. p.591) is extremely rare, and, so far as I can learn, is unaccompanied by other changes in the urine e.g. albumen or tubecasts. In this case both were present.

It is extremely improbable that tubercle was at the bottom of the mischief. Had tubercular disease advanced far enough to cause haemorrhage such as was present in this case, there would surely have been other signs. Notwithstanding frequent and careful examinations no evidence of tubercle was discovered in any other organ of the body, and tubercle bacilli could never be found in the sediment.

Renal tumour which does not cause enlargement of the kidney especially in a child is a rarity. Careful examinations also were made for tags of tumour tissue in the urinary sediment, but always with a negative result.

It is true that there were very few points in this case on which to base a diagnosis of Renal Calculus, but it seems to be the only possible diagnosis.

The

The three cases described above hardly afford sufficient material upon which to generalise, but still they serve to illustrate several points in the symptomatology and diagnosis of renal calculus.

In all of them there occurred periods when all the symptoms were quiescent. In XXI., the patient came under observation a month after the first symptom appeared. For one week before admission and during the two weeks he was in Hospital he remained absolutely free from all symptoms notwithstanding all the efforts that were made to bring on a paroxysm by exercise or otherwise. In case XXII., the symptoms dated back thirty years and only troubled her after more or less prolonged intervals of apparently perfect health. The intervals in which the patient was free from any symptoms were quite as well marked in case XXIII.

In two of these cases X Ray photographs were taken, but the negatives gave no assistance. From my own experience of photography in these as well as in other renal cases, I am inclined to the belief that it is of little value in this branch of work. Still in all such cases I would advocate the trial of photography, for although the absence of any sign of stone in a photographic plate would not be sufficient to overthrow the diagnosis in a case where the symptoms were characteristic and well marked, yet in an occasional case where the diagnosis was obscure the presence of such a sign might clinch the diagnosis.

Morris (Vol.II. p.91) says that photography affords little reliable help,but thinks that the screen gives more delicate

delicate results. On the other hand Jonathan Hutchinson (B.M.J. 19th.October 1901) states that he has found Rontgen Rays of great service in renal cases.

The cystoscope in cases where it can be used often gives valuable information or at least confirms opinions which have already been formed from the symptoms and clinical history. In case XXI., and also in case IX., where the patient was suffering from ectopia of one kidney and stone in the other, in both these cases oedema and pouting of the orifice of the ureter leading to the diseased kidney was observed. In one of them pus and in another blood was seen issuing from the orifice. By these means it is often possible to tell if the other kidney is free from disease. This is of value where the question of nephrectomy has been raised. Where the cystoscope can be used the more difficult and more dangerous procedure of catheterising the ureters is rendered unnecessary, for without it the information that is wanted can be obtained.

The last case, one of "cystic kidney", to be described hardly deserves its place here on account of any rarity, for such cases are far from uncommon, but still it seems worthy of mention.

ase XXIV. J.B., a man aged 70 was first admitted to the Royal Infirmary on 8th.October 1900 complaining of retention of urine.

Up till a few weeks before admission the patient enjoyed fairly good health and was able to do some work notwithstanding his age. He has always had a double Inguinal Hernia, and for the last few years he has suffered from cataract of the left eye.

A few weeks before admission he began to have difficulty in passing his urine, and for the last fortnight he had complete retention, and needed the catheter to be passed regularly. There was no history of urethral stricture.

On admission the catheter was passed with ease and the urine drawn off. On making a rectal examination the prostate was found to be enormously enlarged. He was taught how to pass a catheter and was sent home much improved on 5th. November 1900.

He was readmitted to Hospital on 8th.March 1902. After leaving the ward he had only used the catheter once himself. For

For some time there was no difficulty with the urine except that he had to rise frequently during the night to micturate. The urine was always muddy, but contained no blood. In the end of February 1902, however, a doctor had to be called in as he could not pass water at all. From that day up till the date of his second admission to Hospital on 8th.March a catheter had to be passed daily, each passage of the instrument being accompanied by a good deal of pain and the loss of a little blood.

When admitted he looked a poorly nourished feeble old man with atheromatous arteries and a well-marked Arcus Senilis. The lungs were emphysematous. The first cardiac sound in the aortic region was followed by a loud harsh murmur, but the second sound was pure, and the pulse was not of the water hammer type. The area of precordial dulness was slightly enlarged. The liver dulness was normal. There was no pain or tenderness in the loins, and no enlargement of either kidney could be made out. He passed his urine himself with a little difficulty, but there was always a residium of 3 oz. left in the bladder. The urine was muddy amber in colour, neutral in reaction, and had a specific gravity of 1012. It contained a trace of albumen and blood. Numerous leucocytes were present in the sediment, but not sufficient in numbers to give the reaction for pus with Liquor Potassae. No tubecasts or crystals could be seen. The quantity of urine passed per day was about normal.

The temperature was normal.

The prostate was extremely large, but not specially tender. The meatus was a little contracted, and this rendered it

it difficult to pass instruments. This contracture was snipped without chloroform on 12th.March, and for the next day or two a large catheter was passed to prevent contraction again during cicatrisation. After this small operation the patient became gradually weaker. He had a constant desire to micturate, and pus and a few crystals of triple phosphate appeared in the urine. No tubecasts could be found. The quantity of urine steadily diminished.

Notwithstanding all that could be done to promote a large flow of urine and to stimulate him generally, he gradually sank. On 15th.March he had slight twitchings of the hands and legs, and on the evening of the same day he lapsed into profound coma. He died on 16th.March at 6.30 p.m. without having had any general convulsions.

Permission was granted to examine the bladder and kidneys.

The prostate was found much enlarged and the bladder greatly hypertrophied. Both ureters were thickened and dilated.

There was a slight degree of hydronephrosis of both kidneys. Numerous small cysts were studded throughout the parenchyma of both kidneys, and the whole of the lower extremity of the left kidney was occupied by a cyst about the size of a golfball. All of the cysts were full of a fluid very like clear pale urine in appearance, and none of them seemed to have any connection with the dilated pelvis.

The corpuscles were slightly adherent in both and the surfaces

surfaces of the kidneys were granular. There was no great enlargement of either kidney. On microscopical examination of sections the kidneys were seen to be both in an advanced state of chronic Bright's disease.

In this case the Hydronephrosis was undoubtedly due to the retention of urine and backward pressure conveyed upwards through the distended ureters. In addition the kidneys were both in a pretty advanced state of chronic Bright's disease which may have been an independent condition, or may have been a result of the prostatic condition and its complications. The cysts may have developed quite apart from the obstruction to the urinary flow, and may simply have been a result of the chronic inflammatory condition of the kidney, as is frequently found in cases of chronic Bright's disease. But it is difficult to believe that although they had no apparent connection with the dilated pelvis they were not in some degree dependent for their origin upon the Hydronephrosis.

Whatever be their immediate cause they were undoubtedly of the nature of retention cysts, for even in simple uncomplicated cases of polycystic kidney most recent writers agree that the cysts are of this nature.