

STUDIES IN ABDOMINAL SURGERY

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## THE ESSENTIALS OF SUCCESS IN ABDOMINAL SURGERY.

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### 1. Selection of suitable cases.

Great judgment is necessary in the selection of cases suitable for operation. First, one would not think of operating in moribund cases. Second, again in malignant cases as a rule one does not operate unless an early diagnosis is made, when the disease is distinctly localized, not having had time to infiltrate the surrounding tissues, as, for example, early malignant disease of the bowel where one can excise the mass thoroughly, or in another class of cases where, not with a view of eradicating the disease, but rather relieving the symptoms operation is frequently justifiable as for example, Gastro Jejunostomy in Pyloric Cancer or Inguinal Colotomy for Rectal Cancer. The existence of Septicaemia negatives operation, unless by operation you can remove the cause; also does Grave Cardiac, or Pulmonary or Renal disease. So also does extreme age of the patient.

The co-existence of pregnancy with other abnormal Abdominal conditions frequently confronts the Surgeon, who has to decide whether operation is justifiable or not. If the condition is one that can wait a few months without running any grave risk to the Mother, such as a small fibroid or small Ovarian Tumour, it may be well to wait and watch the symptoms. Should the ovarian give

rise to disturbing symptoms which may probably lead to abortion, operation should at once be undertaken.

Frequently urgent cases are met with where a pregnancy is complicated with an ovarian Tumour, with a twisted pedicle or a ruptured Cyst with suppuration of its contents, or inflammation of Vermiform Appendix followed by abscess. In these cases operation is imperative.

2. Careful preparation of the patient is absolutely necessary. For a patient with a small Ovarian Tumour, who may be otherwise in good health, one or two days rest in bed, with her diet carefully regulated, will as a rule be all that is necessary. A warm bath should be given the night before with an aperient over night followed by an enema in the morning to ensure an empty bowel. Should the patient be in a weakened condition of health from such conditions as Rheumatism or Anaemia, scurvy or Malaria, if the operation is one of expediency these conditions must be carefully attended to, and the patient got into as good a condition as possible before any operation be attempted. Should the operation be one of urgency the condition of her health must not stand in the way of the Surgeon's duty in giving her a better chance of recovery. It may be the only chance.

3. Disinfection of field of operation.

The skin of abdomen is well washed with soap and hot water, then washed with turpentine, again washed

with soap and hot water, then a layer of lint soaked in 1 in 40 carbolic lotion is laid on the front of Abdomen and covered with oiled silk some three hours before operation. The Vagina is to be well douched out "in operations of the Pelvic Organs" with hot lysol or carbolic lotion, and if it is likely that the Vagina will be opened during the operation as in Panhysterectomy, then it should be thoroughly mopped out with pledgets of wool soaked in the above named lotions under the anaesthetic just prior to commencing the operation.

4. Time to operate.

If one is able to select the time for operation in females the best time is a few days after the menstrual period is over. The most convenient hour of the day is the early morning between 8 and 10 o'clock a.m. as the patient should have no food for 5 hours before the anaesthetic. This hour involves only the omission of breakfast, and should the patient have slept well it leaves but little time between sleep and the Surgeon's visit, in which to ruminate and foster alarm.

5. Place of operation.

The best results in Abdominal Surgery are got in specially prepared rooms or wards; it is true that the mortality in Abdominal Surgery in large General Hospitals is greater than in small specially designed Hospitals, but it is a further fact that some of our most experienced operators are attached to the small special

Hospitals, and it is impossible to say how far the good results are to be attributable to the surroundings of the patient and how far to the skill of the Surgeon.

Most Surgeons prefer the operation whenever possible in a special Hospital, public or private, where the after treatment is conducted by the Surgeon and his own trained nurses; but this is not always the case and very often the Surgeon is obliged to operate at the patient's own house. When such is the case a large bright room, with a southern view, which can be kept warm and easily ventilated; <sup>should if possible be chosen</sup> the sanitary surroundings <sup>of which</sup> should be as near perfection as possible, such as total absence of sewer gas and W.C's.

Speaking generally the apartment should be large enough for two people to live and sleep in for several weeks according to the best authorities in Sanitary Science.

6. The Nurse.

Most Abdominal Surgeons have their own trained Nurses and they wisely insist on one of these taking charge whenever possible. In other cases a Nurse has to be engaged for the occasion. It is well to select one with some knowledge of nursing abdominal cases, able thoroughly and well to use the catheter, <sup>and</sup> the rectum tube, also a practical knowledge of the giving of enemas. She should be in perfect health, quiet and energetic, with plenty of tact, good temper, gentleness and kindness,

absolutely clean in her habits, with implicit and uncomplaining obedience.

7. Visitors.

For at least five days after the operation the patient must be absolutely secluded from all her friends no-one save nurse and Medical Attendant being allowed to enter the room. Unless this rule is rigidly enforced endless annoyance will be the result.

8. Assistants.

In addition to the anaesthetist one assistant is usually required. Such assistant ought to be familiar with the methods of the Surgeon, able with rapidity, precision and dexterity to facilitate the proceedings of the operator at every step in the operation. As an assistant for nearly 12 months to Mr. Tait and Mr. C. Martin, I believe a good assistant should be of the non-interfering kind, eager to act as the third and fourth hand of the operator, silently following the mental direction of his chief. Above all his hands ought to be as nearly as possible aseptic, a condition not usually attainable in general practitioners, who are so frequently in contact with septic conditions.

9. Spectators.

The practice of allowing too many spectators at abdominal operations is not to be encouraged.

10. Anaesthetic.

In abdominal section Chloroform undoubtedly possesses as far as the performing of the operation goes

advantages over Ether for the respiration is more tranquil, the engorgement of the parts is less and there is less liability to strain and cough. Whether these advantages should be allowed to outweigh the one great advantage of Ether, viz., its greater safety, is a matter of individual opinion.

Mr. Tait uses Chloroform from a towel in all his operations, whilst at the Birmingham Hospital for Women a mixture of 2 parts Ether with 1 part Chloroform administered from Clover's apparatus without the bag is the Anaesthetic used. I believe it is safer to use the above mixture of Ether and Chloroform except in the very young or very old, or in the presence of Renal or Pulmonary complications.

11. The Surgeon should possess a precise knowledge of the anatomy of the abdomen, normal and morbid, should have much manual dexterity plus as large as possible an experience in abdominal Work. These are to be acquired by careful study in the dissecting room and practice on the Cadaver. Much also may be learned by the intelligent practice at the expense of the patients, but most of all will the young Surgeon learn his duties from a close and intelligent personal attendance at the operations of our great Masters.

Precision of knowledge, precision of judgment, precision of hand are all needed in a surgical operation, they are the foundation of the coolness, courage, caution and sang froid that a Surgeon is presumed to possess,

choosing the golden mean between recklessness and timidity. Rapidly one should give entire and thorough attention to every minute detail, just as if the whole success depended on each single detail, wasting no time, yet not operating against time. In short, the Surgeon has to be prepared at the appearance of any complication to apply the best known surgical technique, to do what is wanted, and no more than is wanted, to have the outline of each procedure mentally laid down in definite lines, and generally to perform the operation in a steady, straightforward, workmanlike manner.

12. Asepsis.

Above all the surgeon must be absolutely aseptic in his method, and in his hands; the ~~aseptic~~<sup>ing</sup> of the skin of abdomen has been referred to, towels wrung out of very hot carbolic lotion 1 in 40, are of great value for laying instruments on, above and below the field of operation. The instruments, ligatures, and sutures, should all be boiled in a <sup>one per cent</sup> ~~5%~~ solution of washing soda. The hands of the Surgeon, Assistant and Nurses should be rendered thoroughly aseptic by well washing with soap and hot water and nail brush, then a little rectified spirit poured over them. This is removed, <sup>by washing</sup> when they are finally washed in hot Bichloride solution 1 in 1000.

13. Sponges.

The method in use with Mr. Tait is as follows:- The sponges are never placed in boiling water. They are first well washed in warm water, then placed in



solution of ordinary washing soda 1 lb. to every dozen sponges. This solution dissolves out the blood and fibrine, and in it they are repeatedly washed. When all dirt has been removed they are once more cleansed in water, and are then allowed to stand for 24 hours in 1 in 20 Carbolic lotion. They are finally squeezed out, dried, and kept in closely fitting tin boxes until required for use.

It is of the utmost importance to know the number of sponges in use at an operation. They should be counted at the beginning and at the end of operation. A sponge should never be torn up during an operation. The great value of sponges is, first, in protecting the peritoneum from septic matter. Second, in absorbing blood from the field of operation. Third, in checking oozing. Fourth, covering exposed bowel.

Many Surgeons ~~discard~~<sup>discard</sup> the use of sponges altogether and use pads of gauze instead, the advantages claimed for these are, first, you can boil them and therefore absolutely sterilize them. You cannot boil sponges. Second, the gauze pads are cheap so that they are never used a second time, therefore the risk of carrying septic matter from one case to another is impossible. They are <sup>however</sup> not equal to sponges in their softness and power of absorption.

14. Temperature of Room.

The temperature of room should be kept about 70<sup>o</sup> with an abundance of hot water <sup>boiled</sup> ~~per boiler~~ should be

present for flushing out abdomen, also for repeatedly rinsing hands <sup>of operator</sup> during progress of the operation.

The patient should have on warm stockings, her nightdress and warm bedjacket; so long as the part to be operated on is well exposed, the rest of the body cannot be too well protected by the free use of blankets and woollen jerseys with in addition a hot bottle to the feet.

15. The incision is usually made in the middle line between the Umbilicus and pubis in the great majority of cases, and then enlarged upwards or downward as occasion requires. Clean straight cuts are made from end to end. When the peritoneum is reached it is pinched <sup>up</sup> between two catch forceps. and divided between them.

In opening the peritoneum care must be taken not to wound the bladder or bowel, which may be adherent to the parietal peritoneum in conditions of some Tumour growths. The length of the incision should be just enough to do the operation rapidly, easily and thoroughly. As soon as the abdomen is opened, two fingers are introduced for purposes of exploration. If the incision has to be enlarged it is effected by a straight probe pointed bistomy, the 2 fingers being used as a grooved director. If the wound be extended downwards, the position of the bladder must be defined before the knife is used.

16. The operation of an ovariectomy.

The abdomen being opened the cyst is exposed and is recognized by its bluish white shining surface. When

free, the fingers or hand are introduced to ascertain if any adhesions exist and to estimate their character. Adhesions of all kinds are more readily dealt with after the cyst is emptied by tapping.

A sponge is now inserted between the cyst and the lower angle of the wound; it absorbs any fluid that may escape. Steadying the cyst with the left hand the surgeon drives the Trocar into its wall. As the cyst commences to empty itself, long <sup>at</sup> each forceps are placed upon cyst to prevent fluid escaping into Peritoneal cavity. Also to drag cyst up on to the Trocar. After the first cavity has been emptied, a second and a third cyst may require tapping. This is done by pushing front of Trocar through the Septum dividing the one cyst from the other. Should the contents be of too colloid a nature to run through the Trocar, the opening in the cyst is enlarged and its contents scooped out by operator's hand. Should the contents be clearly foetid, the hands must be scrupulously kept out of it, whilst large quantities of hot water are used for washing away the foetid cyst contents. As soon as the fluid or semi-fluid contents of Tumour are removed, its bulk will now be <sup>so</sup> greatly reduced in size that it may be drawn through the abdominal opening without undue force. In emptying the cyst it is of great importance when it is possible to avoid spilling the cyst contents into the peritoneal cavity.

17.

Adhesions.

The cyst having been emptied and drawn outside the Abdominal wound the adhesions must now be dealt with. The lighter and more slender can be broken down with finger or sponge. At each step bleeding points must be looked for and clamped and tied. The firmer adhesions must be clamped, divided and tied either with catgut or fine silk. Extensive strands of adhesions should be clamped in sections, cut, and the bleeding points tied individually. Oozing from a level surface can usually be checked by continued pressure with a sponge.

The deep pelvic adhesions require very great care in the manipulation of which the electric light is of especial value.

Adhesions to bowel or bladder must be dealt with very gently. If they are at all dense it is often better to leave portions of cyst wall as an appendage to the bowel than run the risk of wounding it, remembering it is far easier to wound bowel or bladder than to tear false membrane.

Omental adhesions may be peeled off with the finger and carefully examined for bleeding points which should be picked up individually and tied with catgut or fine silk.

18.

Pedicle.

The next step is the treatment of pedicle. The

cyst having been freed of all adhesions, next the pedicle is secured either by ligature or Clamp (see prophylactic treatment of Haematocle, page ).

19.

Examine the <sup>of her</sup> Ovary.

All bleeding having been arrested the opposite ovary is carefully examined. When the Toilet of the peritoneum is to be attended to.

20.

Toilet of Peritoneum.

The thorough cleansing of the peritoneal cavity is a matter of primary importance. It is quite as possible to do too <sup>much</sup> ~~much~~ as to do too little. After a perfectly simple laparotomy without complication of any kind, it is quite unnecessary to flush out the quite clean cavity of belly with water or to scour equally clean coils of Intestine with sponges, but when a quantity of unwholesome fluid such as pus or foecal matter has escaped into the Peritoneal Cavity among the viscera, no trouble must be spared until the peritoneum has been cleansed of the impurity, either by flushing or sponging. From what I have seen I believe flushing to be a much more thorough way of cleansing the Peritoneal cavity, than extensive sponging. With the latter, the lustre of the parietal and visceral peritoneum can frequently be noted to be distinctly dulled shewing that the epithelial cells have been injured thereby. The fluid used for flushing is plain boiled water.

The stump of pedicle should <sup>now</sup> be drawn up by means of forceps still <sup>attached</sup> attached to it, and having been examined

the forceps may be removed, sponges and instruments counted, and the greatest care taken that no sponge or instrument has been left in the abdominal cavity.

21.

Drainage.

The use of <sup>Drainage</sup> ~~Delivery~~ Tube in <sup>Abdominal</sup> ~~A~~ Surgery is of immense value in certain cases. It is necessary to drain in cases.

1. Where there is peritonitis or ascitic effusion
2. Where during the operation the <sup>Peritoneum</sup> ~~Cavity~~ has been soiled <sup>with</sup> ~~and~~ foecal matter, urine, pus, or offensive contents of Tumour.
3. Where the Abdomen has been washed out.
4. Where extensive adhesions have been broken down.
5. Where from any cause free oozing of blood is taking place into Peritoneal cavity.
6. Where there is reason to believe bowel or bladder has been injured.

On the other hand in single, straightforward operations without adhesions or other complications, it is not necessary to drain.

The tube used is usually that known as Keiths Glass Tube introduced to the bottom of the pouch of Douglas, <sup>through</sup> ~~then~~ the lower angle of the abdomen wound. When the tube is used it should be drained or cleared <sup>by</sup> ~~of~~ the use of a Sucker every 10-15 minutes at first, and as the discharge lessens, every half hour or every hour. The best kind of sucker devised is probably

that known as Tait's, As a rule the sooner the tube is removed the better, in instances where it is inserted to meet anticipated bleeding it may be removed at end of 24 hours. Should no fluid be found to have oozed into peritoneal cavity.

In other instances it may be retained so long as any discharge continues, and specially so long as it is offensive.

22.

The closing of abdominal Wound.

A thin sponge is introduced upon the intestines under the opening, and is retained during the introduction of the sutures, it protects the Omentum and intestines whilst introducing the sutures and absorbs what blood may escape from the introduction of the sutures; of suture materials used, probably the best is silk worm gut. A straight needle transfixes the whole thickness of abdominal wall on each side of wound, specially including Peritoneum on each side.

Should silk be used, a piece 2 feet in length has a straight needle attached to each end of it, one needle is passed to the right hand margin of wound, the other through the left; both are thus passed from within outwards, i.e. transfixing first the peritoneum and the skin last. Before the sutures are tied the sponge introduced is gently withdrawn by means of forceps, the sutures are tied from above. <sup>down</sup> A few superficial sutures may now be required.

23. Dressing.

A strip of Jodoform gauze is placed over the wound, *then* a few layers of corrosive wool, kept in position by strapping, and over all a binder, and the patient is lifted back to bed.

24. Diet.

The following is a brief outline of the after treatment of a simple straightforward uncomplicated case of *Abdominal* section. For the first 44 hours nothing is to be given by mouth, if the operation has been a very prolonged one accompanied with much shock, *Enemata* ~~enemetic~~ of brandy and beef tea administered per rectum should be *at once after operation* begun and repeated every 4 hours. Should the thirst be very distressing a pint of hot water injected into rectum occasionally is a great reliever of thirst. The patient may be allowed to rinse out the mouth with warm water but not swallowing any, or sucking of small pellets of ice is of value sometimes in relieving thirst and sickness. On the third morning after operation one may begin with sips of milk and soda water or barley water. In the afternoon a little tea and toast may be given. From the third to fifth day, tea, toast, beef tea, milk, arrowroot, bread and milk may be given; some fish on the fifth day and some meat on the seventh day.

25. Bladder.

The nurse must watch that the bladder does not become ~~over disturbed~~ *ended*. Should the patient not be able to pass her water, and such retention is frequent



in first 48 hours, if necessary the catheter should be passed about every 6 hours. The catheter when not in use should be kept lying in a 1 in 80 carbolic lotion, the sooner the catheter can be dispensed with the better.

26.

Bowels.

In the majority of cases some distension comes on about the second or third day for which the rectum tube should be introduced three or four times daily. On the fourth day, if the bowels have not acted spontaneously, it will be wise to give a Seidlitz followed by a simple enema. Each morning after this an action of bowels should be secured by a simple <sup>Soap & Water</sup> soap or <sup>turpentine</sup> turpentine enema.

Should much distension occur and it frequently does, 5 grains calomel followed by a smart saline purge, is probably the best way of meeting this difficulty. A small turpentine enema will in all probability greatly facilitate the action of the purge.

27.

Vomiting.

Frequently after the anaesthetic there is some vomiting lasting for some hours. As a rule this gives us no anxiety. A hypodermic of morphia greatly relieves the vomiting. Vomiting coming on by the third or fourth day may be due to injudicious dieting or to peritonitis. If the former the foul tongue, muddy complexion, yellow *Conjunctival*, headache, constipation, foul breath,

sufficiently indicate the cause and with stopping food for 12 hours, a smart purge with the exclusion of visitors usually brings about an improvement in the condition.

In the vomiting of peritonitis we find little or no nausea or retching; the vomited matter wells up gush after gush without any warning or effort. At first the colour is greenish, then dark olive green, later coffee colour, and here the *condition* is very serious. All food by the mouth should be absolutely stopped. <sup>*A drachm*</sup> ~~Three~~ ~~dr.~~ of sodium bi-carbonate in half a tumbler of warm water should be given. Should it stay down it will neutralize the acid gastric contents. If vomited, it will probably thoroughly empty the stomach. Next 5 gr. calomel should be given, which should be repeated if it is vomited. This should be followed by a Seidlitz powder in two hours, supplemented by turpentine enemas. As a rule persevering with this line of treatment will usually result in the passage of flatus with some motion which is the great object in view in treating peritonitis (not due to mechanical obstruction). Nutrient enemata should also be resorted to every 4 hours, whilst the stomach is not able to retain food. The use of rectum tube should never be forgotten for long periods in cases of peritonitis.

Should the above method fail me, I should be glad to try a method strongly recommended by Keith, viz, rectal injections of quinine and whiskey in warm water,

repeated every two hours until three doses are administered. Six grs. quinine sulphate dissolved in two drachms whiskey in a couple of ounces of warm water. Abdominal Surgery, page 61.

28. Pain is a symptom often complained of during the first 24 hours. It is often due to the constriction of the nerves of the broad ligament in the ligature. A hypodermic of a quarter gr. morphia will be found of great value in soothing the pain, lessening shock, and checks the tendency to haemorrhage, but it must not be repeated unless it is absolutely necessary as its repeated action dries up the secretions and blocks the action of bowel; then should peritonitis supervene, the purgative treatment on which her salvation may depend will be of no avail.

29. Belt.

By the end of first week the patient should be measured for an abdominal belt. This is specially constructed to support the line of the incision and prevent the formation of Ventral Hernia. It must be applied before she is allowed to sit up in bed. It is advisable for her to have a light belt for night wear, and a strong one for use by day.

30. The stitches are removed on the 9th day, if the wound has soundly healed and the patient has recovered without a complication. She may sit up in bed for an hour on the 13th day and get out of bed for an hour the following day, and leave for home by the 22nd to 25th day.

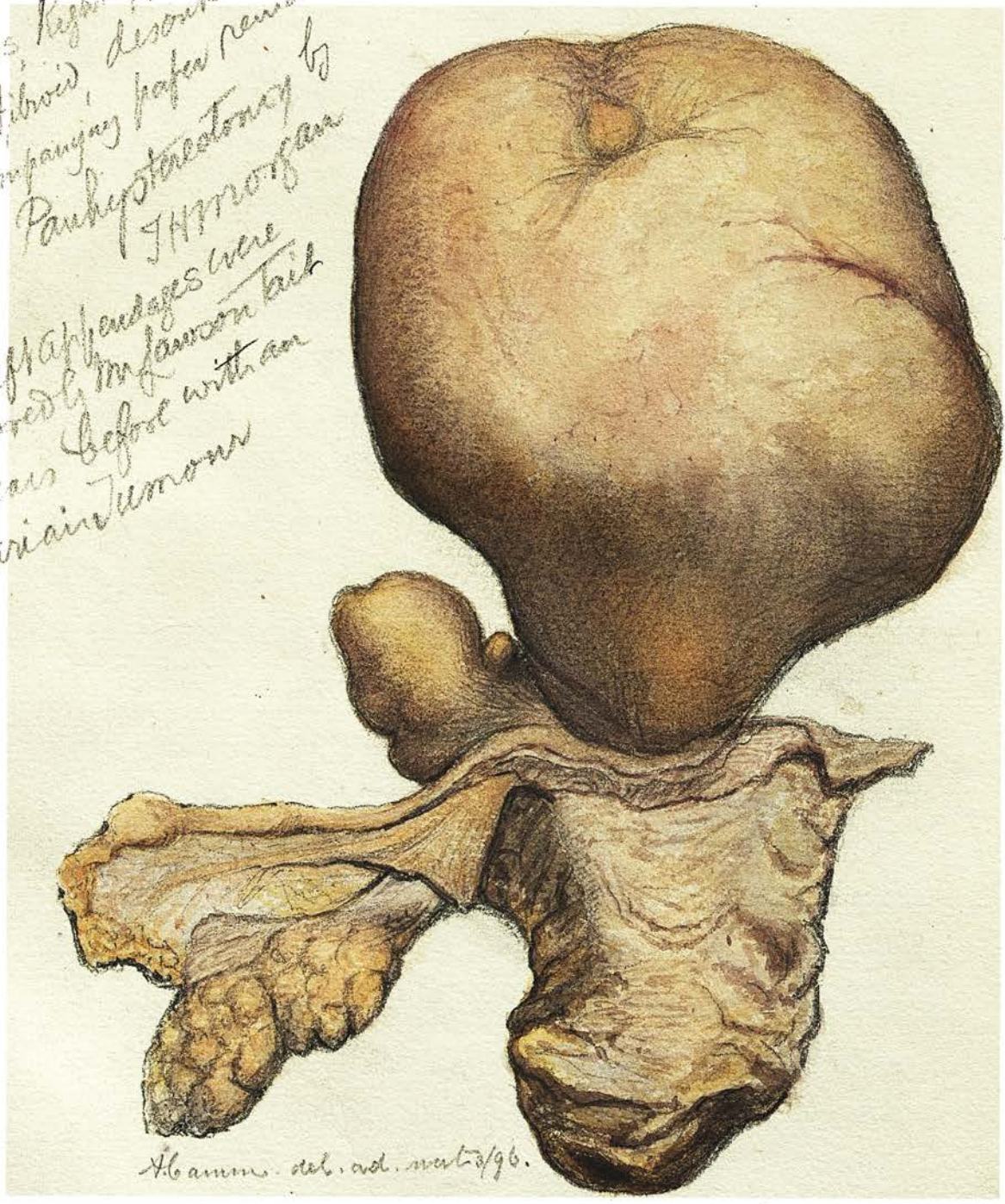
### Final Instructions.

She must be advised to be very careful with her diet, and to carefully attend to her bowels with the aid of some mild aperient. Should be warned to avoid all muscular effort such as lifting heavy weights. For three months the marital relations must be suspended. Most important of all, she must be urged to continue the use of the belt for two years after operation.

Complications such as shock, internal haemorrhage, Septicaemia, Intestinal Obstruction, Foecal Fistula, Thromboses, Parasites, Pulmonary Embolism, must be treated according to lines laid down in treatises on Surgery.

Drawings of  
Uterus, Right Fallopian  
and Fibroid, described in  
accompanying paper removed  
by Panhypostereotomy by  
J.H. Morgan

The left Fallopian tubes were  
removed by my former trait  
5 years before with an  
Ovarian Tumour



H. Hamm. del. and. mar. 2/96.

## Panhysterectomy.

H.A. aged 45, single, occupation domestic, residing at Coventry. Admitted Feb. 6th, 1896. Menses began at age of 12 years, regular, painless, normal in amount, general health was always good. About the age of 39 she noticed a swelling in the lower part of her abdomen, which gradually increased in size whilst patient lost weight; at the same time the menses were unaffected. A year after her first noticing the swelling she was admitted to Mr. Tait's private hospital where he removed a multilocular ovarian Cystoma. Patient was up in 3 weeks and returned home quite recovered.

The first monthly period after her operation was increased in amount, the flow lasting 7 to 8 days "whilst before the operation it was never more than 5 days." This increased menstruation continued for 3 years, when it still further increased 10 to 12 days. Then her period anticipated the month and the loss was profuse and exhausting to the patient, whilst at the time of her admission, she was unwell 10 to 12 days every fortnight, necessitating the use of 25 diapers each period. For fully 6 months prior to her admission as each period declined, there was a very unpleasant odour from changes which was stated to be increasing and was very distressing to patient. For some months she had been troubled greatly with frequency of micturition which was greatly aggravated whilst changes were on

Troublesome constipation was also present.

Present  
Condition.

Patient is a stout, well built woman, with exhausted and yellowish pasty appearance, swollen face, mucous membranes blanched, breathless on slightest exertion. The legs are painful and much swollen, the right more so than left. There is a systolic mitral murmur at base of heart. Urine contains some albumen, and much ~~anorexia~~ <sup>Anorexia</sup>. On examination a large solid tumour was felt filling the pelvis, extending up to Umbilicus, distinctly multinodular, sound past 6 inches. Bimanual examination showed that it was intimately connected with the uterus.

Operation.

On Feb. 11th, with the able assistance of my teacher Mr. Tait, "to whom I take this opportunity of expressing my most sincere thanks," after sterilization by boiling of instruments, ligatures, etc., I opened the abdomen in line of the old cicatrix, the incision being sufficiently long to permit of easy delivery of tumour with the aid of Tait's corkscrew. After rapidly noting the relations of Uterus, bladder, and the larger blood vessels, the broad ligaments were next tied off on either side with four double silk ligatures, and divided between the ligatures, thus enabling me to pull the growth further out of the pelvis. The next step consisted in separating the bladder from the anterior surface of Uterus, noting the line of reflexion of Peritoneum from Uterus to the Bladder, above which the Peritoneum is firmly attached, below which it is loosely attached. An incision was made across the anterior

surface of Uterus half to 1 inch above this reflexion and from one broad ligament to the other. The bladder was then easily stripped off from anterior surface of Uterus as far as Vagina by peeling it down with finger and thumb.

In stripping off bladder a large vein on anterior surface of tumour was wounded, and the bleeding was very free for a few seconds. This was easily controlled with sponge pressure.

Open Vagina.

Having separated the bladder from Uterus and Vagina the finger easily indicated the position of the Os Externum, then with the point of a pair of scissors I opened into the Vagina, absolutely in the middle line enlarging the opening with the finger. By the same method I opened from the Vagina into the pouch of Douglas and then enlarged the opening with the finger. The Uterus was now attached on each side solely by the lower <sup>third</sup> ~~thread~~ of the broad ligament which contained the Uterine Artery. The pedicle needle was passed under each artery between Ureter and <sup>Uterus</sup> ~~Uretus~~, and tied firmly, after which the Uterus and tumour were cut away well beyond the last ligature.

Ligating the <sup>uterine</sup> ~~uterine~~ artery is <sup>the</sup> ~~a~~ most difficult step in the whole operation, particularly if the tumour be large or filling the pelvis, as it is here that the Ureter runs a great risk of being injured. Remembering that normally the Ureter is only half an inch from the Cervix, one has to pass the needle on the Uterine side, otherwise the duct would be ligatured with disastrous results.



And further one has to leave plenty of tissue beyond the grasp of ligature, to prevent it slipping.

As soon as the Uterine Arteries were ligatured all bleeding was immediately stopped. After sponging out the Pelvis, the latter was illumined with the Electric Light for bleeding point; one or two small bleeding points were ligatured, then all the ligatures were cut short and the pedicles dropped back.

A long pair of Spencer Well's forceps were passed into the vagina from below and a roll of Sodoform gauze drawn through into vagina leaving about 1 inch of the gauze projecting into Peritoneal Cavity. The Abdominal Wound was closed with interrupted sutures, no drainage Tube being used.

After Treatment. Patient rallied well from the operation without much sickness, as reaction set in, there was free oozing from the Vagina which lasted for 18 hours before it finally stopped. This gave me some anxiety during the first evening.

Temperature. The Temperature reached 100 F. by 1 o'clock on the morning following the operation, and remained so for 8 hours, when it fell to normal, and did not rise above that level throughout the whole convalescence.

The Catheter was used for three days when she was able to finally dispense with it.

Feeding. Milk and Lime Water were commenced on the second morning, i.e., 44 hours after the operation. The same night 5 grs. Calomel were given followed by a Seidlitz powder in the morning, followed by a Turpentine Enema

in two hours, after which flatus and motion passed freely.

Gauze.

On the third day the gauze was removed from the vagina and the latter syringed out with warm Iodine water <sup>one drachm</sup> & drs. to the pint. The gauze was not replaced, but warm Iodine Vaginal injections were continued night and morning as there was a slight colored vaginal discharge which lasted until seven days when it finally ceased.

Some silk ligatures were noticed in the discharge on the fourteenth day.

After the operation Patient began to take food well. Her color soon began to show signs of improvement the stitches from Abdominal Wound were removed on the 8th. day. She made an easy recovery, was up on the 21st. day, and left for her home in Coventry on 11th March, just 29 days after the operation.

Remarks.  
Vaginal Liga-  
ture of  
Uterine.

Had I secured the Uterine Arteries from the Vagina before commencing from the Abdomen, patient would not have lost so much blood, as she did during the interval of my stripping off the bladder, wounding a large vein noted above, and ligating the Uterine Arteries. I shall certainly adopt this method, if I have an opportunity of doing this operation again.

Panhysterectomy was the operation most suited here. First because removal of the right ovary (the left was removed 5 years ago) would only have been of very doubtful value here. Removal of Uterine Appendages is a comparatively safe operation for small <sup>myoma</sup> ~~myoma~~, say less

in size than a 5 months pregnancy, to quote Mr. C. Martin in a paper read before the Jan. Meeting of the Edinburgh Obstetric Society, ~~but~~ <sup>but</sup> ~~it was~~ <sup>is</sup> a risky and unsafe proceeding in large myomata. He has removed the appendages in 20 small myomata with one death, and eight times in large myomata with two deaths. Taking the last figures of the 8 large myomata, 2 died, whilst two had to be operated on a second time, viz., to have a total extirpation <sup>of panhysterectomy</sup> performed. One is forced to the conclusion that Panhysterectomy is the safest way of curing the patient and obviating the risk of a possible second operation.

Extra peritoneal Treatment of pedicle by the clamp method would not have removed the whole growth here, because a small nodular Fibroid was found springing directly from the upper cervical portion and invading the broad ligament below which a pedicle could not have been secured.

Apart from this Panhysterectomy appears to have far less risk attached to it than the extra peritoneal method for in the latter operation we have an offensive necrosing stump, sometimes as thick as one's wrist filling the lower portion of the wound, and slowly sloughing away. These patients run the risk of septicaemia, peritonitis, and secondary haemorrhage. When the stump separates there is a huge suppurating opening often left going down to the peritoneum, and separated only by a weak barrier of granulative tissue from Intestines. The wound is slow in healing, usually from 4 to 8 weeks

\*  
Removal of Appendages  
a comparatively  
simple operation in  
Small myomata  
less in size than  
five  
months pregnancy

before the patient may sit up in bed. Last<sup>ly</sup> in these clamp cases there is a remote danger, and ~~one~~ I have seen several examples of this last year of Ventral Hernia formed at the lower angle of wound. In all these points panhysterectomy is superior to the clamp. It cures the patient, it is much less risky, the abdominal wound heals by first intention, the patient is up within three or four weeks and there is but little risk of subsequent hernia.

One could not have removed it by vaginal Hysterectomy owing to its size, unless by the method of removing the Tumour in pieces, in the performance of which the technical difficulties are so great, taxing to the very utmost one's operative skill.

Bardenhauer was the first to perform panhysterectomy for Uterine <sup>M</sup>igoma. He records 7 cases with 6 recoveries.

Martin of Berlin then took up the operation, greatly modified it in details, and has performed it, <sup>over 200 times?</sup> and has strongly recommended it in suitable cases with all the weight of his great authority.

In America, successful cases are recorded by Baldy Polk, Krug Boed<sup>t</sup> and others have recorded successful cases.

In Australia, Thring of Sydney records 2 cases with 1 death from Surgical Kidney on the 14th day of operation.

In this country Mr. Jesset of London was the first to introduce it, performing his first operation in Feb.

1892. Mr. *Jessett* after cutting away the Uterus and Tumour makes an anterior and posterior flap of peritoneum, which are stitched together, thus locking off the Peritoneal Cavity from the vagina. I do not think this plan is as sound in principle as that of draining the Peritoneal Cavity by means of a roll of Iodoform gauze drawn through the vagina from the Peritoneal Cavity. The Abdominal end of the gauze is found freely covered with plastic lymph in 24 to 48 hours, <sup>and</sup> until this <sup>barrier</sup> ~~is~~ barrier of lymph is complete <sup>the drainage due to</sup> ~~The~~ capillary affinity of the gauze for fluids, plus the dependent position of the opening are a positive gain to the patient. The fear of prolapsed gut when the gauze is removed is probably not a real one. Since such an occurrence on the removal of the gauze in panhysterectomy has I think never been recorded.

Dr. Smigly of Dublin followed Mr. Jessett and has performed the operation several times. Dr. *Smigly* first ligatures the <sup>uterine</sup> ~~anterior~~ artery from vagina, then taking his stand between the patient's Thighs opens the abdomen and completes the operation.

In Birmingham I have seen Mr. C. Martin perform the operation 4 times. On 3 of such occasions I had the privilege of assisting him, all of <sup>which cases</sup> ~~whom~~ I watched during their convalescence. Mr. Martin has recorded 8 cases, without a single death. I am glad to have this opportunity of expressing my very warmest thanks to Mr. Martin for his great kindness to me during the past 10 months here, to whose teaching I am greatly indebted for much of what I know of Gynaecology.

Case of Pyosalpinx, Removal of Appendages.

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E.H. aged 21, occupation, domestic, residing in Dorsetshire. Married, admitted December 7th, 1895.

Complaint.

Agonizing pain before and during menstruation, profuse loss, continuous pain in lower abdomen, great weakness so that patient is almost bedridden, also much pain on micturition and constipation.

History.

Patient commenced to menstruate at the age of 14 years. it was regular and painless. She was in good health until the time of her marriage just 18 months ago. Directly after her marriage her troubles began with severe pain and great tenderness, especially in the right side. This continued until the premature birth of a child, at 7th month of pregnancy, which child soon died. During her puerperium she suffered severely from ~~hernic~~ <sup>Severe</sup> haemorrhage, which for some days saturated the bed and was accompanied by agonizing pain in the lower abdomen. As the haemorrhage ceased it was followed by a purulent discharge which lasted for many weeks. During a protracted illness of 15 months she was under the care of several Medical men, also she was in two different Hospitals. The general verdict of opinion re diagnosis was that she had great ulceration of womb, and that the only remedy was total removal of the womb, but she was considered to be too weak to survive it. She became worse. Her Medical Attendants, three in

number, abandoned hope of her recovery, when a fourth gentleman was called in, who suggested that she ought to be sent to Mr. Tait's private hospital.

Family History.

She is said to come of a healthy family, although she herself has always been liable to a bad and troublesome cough.

Present Condition.

Now 15 months after her confinement patient is emaciated almost to a skeleton. Abdomen on inspection is retracted, ~~on palpation~~. Very great tenderness is felt over right and left illiac regions.

P.V. Vagina is roomy, Cervix points forwards, the Uterus is bound down by adhesions posteriorly; on bimanual examination a very tender mass was felt in right lateral fornix, which proved to be the right ovary enlarged, and tube distended, adherent together and matted to the surrounding tissues. The left side was similarly affected but not to such an extent.

Diagnosis.

Right Pyosalpinx, probably double, and chronic ovaritis following an attack of Gonorrhoea probably contracted immediately after marriage in a person with tubercular diathesis.

On 9th December assisted by my teacher and friend Mr. Tait, I removed with some difficulty owing to adhesions the appendages.

The right tube contained two teaspoonfuls of pus, the right ovary was chronically inflamed; the left tube and ovary were also inflamed but less so than right. Also there was no pus on left side.

After Treatment.

Patient did very well for four days, with normal temperature, and no metrostexés. On the fifth day, temperature rose to 38<sup>°C</sup>, pulse quickened, suddenly there was pain in left side, and bearing down, also some faintness, and lividity of lips. A vaginal examination showed that an haematocle had formed in left Broad Ligament. For the next few days, these symptoms became aggravated so that on the ninth and tenth days the temperature stood at 40°C. severe vomiting was one of the most unpleasant symptoms, associated with a good deal of tympanitic distension<sup>of abdomen</sup>. With stopping all food by mouth, by use of nutrient enemata every 4 hours, also Turpentine enemata to keep down distension, also with hypodermics of morphia occasionally, ~~the~~ symptoms gradually passed off so that by the 20th day after operation the temperature was normal, although the pulse was still somewhat rapid. She was taking food by the mouth and the Haematocele seemed quiescent with a tendency to become absorbed.

On the 21st day after operation the temperature being normal, the patient unfortunately was allowed to sit up for an hour, during which time she got a severe rigor. She was immediately put to bed and given hot drinks, and packed round with hot bottles, pain very quickly appeared in left groin, region of old Haematocele, also in right side of Chest. On examination an hour later, there was evidence of some congestion of base of Right Lung together with relighting of the old pain in left groin. By 3 o'clock of same night patient was



very ill, intense dyspnoea, lividity of face, consolidation of right Base, with some rusty expectoration. With a steam kettle, free stimulation with Ammonia Carbonate Brandy and Hypodermics of Strychnine every 4 hours, the alarming symptoms greatly lessened during the night.

Next morning, 32nd. day from operation, the cough was softer, expectoration freer and skin was acting well, but the pain was now centred in region of right Kidney, which was distinctly swollen and tender to touch, and the Urine was loaded with albumen. In addition to this, watery Diarrhoea had set in; the temperature registered 40°C., pulse 150. During the next few days the Lung and Kidney symptoms seemed to abate, the cough to soften, breathing <sup>became</sup> easier, Urine contained less albumen, whilst the Diarrhoea increased. <sup>in number of motions,</sup> The Haematocle had increased in size, ~~and in no. of motions~~ and was throbbing and painful.

For a week we watched her progress supporting the strength, <sup>treating</sup> ~~healing~~ the symptoms, and following Mr. Tait's dictum re treatment of Haematocle, viz., do not interfere with them until you see they are pointing either into one of the Fornices, or working up to Abdominal ~~wound~~ wound.

On the 32nd. day from operation the Lung symptoms had subsided and the albumen was very much less and as the Haematocle was evidently working its way to Abdominal wound. I inserted the point of a sound into lower angles of wound down to the swelling, when chocolate colored pus welled out. The wound dilated with dress-

ing forceps. A drain tube was inserted, pus flowed freely through the tube for three or four days, during which time she rapidly gained ground. The urine became free of albumen, the cough softened, but the diarrhoea persisted 4 to 6 muco-feculent motions daily. The drainage tube was removed on 41st day, and patient returned home on January 18th., 43 days after operation. We had a report from her at end of February saying she was quite well and doing her own work, a thing she had not been able to do for 18 months. In her own words she was double the woman she had been before the operation.

The sequence of events were probably as follows:-  
The Haematocele was evidently the beginning of her troubles, commencing at an unusually early period in the history of the case. The majority of Haematocles occur during the 2nd or 3rd week after operation. It probably was due to either the pedicle needle transfixing a small vessel or to undue dragging on the pedicle in separating <sup>adhesions</sup> or ligaturing <sup>pedicle</sup>. This accident occurring in the after treatment of an abdominal section in a tubercular subject greatly reduced her strength and resisting power, so that the injudicious license of <sup>allowing her</sup> ~~to~~ sitting up in her room too early proved sufficient to determine suppuration in the apparently quiescent Haematocele, for it was whilst sitting up the severe rigor (first noted) set in heralding some secondary pneumonia of Right Base, associated with an acute

affection of the Kidneys, the right being very painful and much swollen, also an attack of diarrhoea at first moderate but increasing as the pneumonia and kidney affections subsided. I regarded the pneumonia and kidney affections as septic in origin in a tubercular Diathesis, the suppurating Haematocoele being the focus, whereas the diarrhoea at first mild was later on mucofeculent in nature, and aggravated by the pus burrowing its way back along the Utero-Sacral ligaments to the tissue around the Rectum embedding the latter in a tight collar of effusion, setting up a pericolicitis, as well as a catarrhal colitis as evidenced by the great pain on Vaginal examination, the bulging of the left Fornices plus the mucofeculent nature of the diarrhoea.

*Haematocoele*

An extra peritoneal Haematocoele is an effusion of blood into the cellular space bounded below by the pelvic fascia and above by the pelvic peritoneum. In the majority of cases the bulk of blood is poured into the tissues of the broad ligament but it is by no means always confined to that structure, involving as it sometimes does, the whole pelvic roof.

It is apt to occur after operations on the pelvic viscera. I have seen it occur on two occasions after a Uterine <sup>is</sup> curetting. It is most frequently seen after removal of Uterine appendages, and in ovariectomy and occasionally after Hysterectomy.

Time of occurrence.

1. In a few cases it occurs at the time of the operation and is due either to the pedicle needle entering

a small vessel whilst transfixing the pedicle, the vessel retracting, and not being caught in the grasp of the ligature, or to undue traction on the pedicle either in delivering the tumour or separating the adhesions. My own case was probably due to this latter cause.

2.

In the great majority of cases it occurs later, usually during the 2nd or 3rd week after the operation, and according to Mr. C. Martin has its origin in an abortive attempt on the part of the nerve centre for menstruation to bring about the Menstrual flow.

Morbid Anatomy. The blood is poured into the loose connective tissue forming a rounded mass between the two layers of the broad ligament which are thus widely separated. The peritoneum forming these layers is tightly stretched and thus resists further distension. The blood driven in the direction of least resistance infiltrates the Cellular Tissue below the level of the broad ligament as far as the parietal layer of <sup>pelvic</sup> ~~peritoneal~~ fascia. This distension of the broad ligament lifts the peritoneum bodily upwards. The peritoneum lining the Pouch of Douglas is raised partly by the traction upwards of the broad ligament, partly by the blood dissecting beneath it. This collection of blood tends to burrow backwards along the Utero-Sacral ligaments to the tissue around the Rectum, producing the stricture of the Rectum first pointed out by Mr. Tait in these conditions. Anatomically the blood may pass forwards under the

Peritoneum in front of Broad Ligament on to the Anterior Abdominal Wall or it may escape at the outer margin of the Ligament into the Cellular Tissue of Iliac Fossa producing ~~Utero~~<sup>Retro</sup>-peritoneal Haematocele.

Hemorrhage is arrested by the pressure of the opposed surfaces of the Peritoneum also by clothing.

#### Changes.

1. Provided that the operation has been absolutely aseptic and no needle for diagnostic purposes thrust into the mass, the collection of blood will coagulate from periphery to centre, and will, in all probability, be completely absorbed in the course of a month or so.
2. If the operation has not been absolutely aseptic, suppuration will in all probability take place, forming a variety of the so called Pelvic Abscesses.
3. Or given an Haematocele following an aseptic operation, should it burrow around the Rectum, or come in close contiguity with bowel, frequently Micro Organisms find their way into the mass, thus converting a benign collection of blood to a suppurating Haematoma.

#### Terminations.

During the last 14 months, I have seen 5 extra peritoneal Haematocele occur, 2 following Abdominal Section, 2 following Cursetting, 1 following anterior Colpotomy with removal of appendages.

1. In a majority of cases, the effused blood is absorbed and a natural cure effected, the process may be very slow occupying weeks or months. This happened in ~~the other~~<sup>one</sup> case of cursetting also in the Anterior

Colpotomy case referred to above.

2. In rare cases a Haematocele may burst into Peritoneal Cavity; this only happens in those cases where a large effusion has taken place, either at the time of or directly following an operation.

The extreme tension of the Broad Ligament pulls it <sup>the bleeding vessel</sup> out of the grasp of the ligature, <sup>when</sup> the blood pours into the Peritoneal Cavity, fresh Hemorrhage occurs, and unless the Abdomen be <sup>quickly</sup> gently re-opened, the patient bleeds to death.

3. The Haematocele may suppurate as did the 2 cases following abdominal Section referred to above, in which the ligatures were not sterilized by boiling, and which discharged through the abdominal wound. <sup>the other</sup> In one curetting case noted above, <sup>which was followed by a Haematocele</sup> there was a previous tubal trouble. This case suppurated, and burst into the rectum, and discharged for two months, ultimately the woman got quite right. This is not an uncommon result, for a Haematocele, which is sometimes the result of the injudicious use of the exploring needle, or due to the passage of micro-organisms from the rectum into the mass the pus from these suppurating Haematoceles, if not evacuated by the Surgeon, may discharge into rectum, vagina, bladder or abdominal wound.

Clinical Features. As a rule, the symptoms occur 2 or 3 days before the time for next menstrual flow to occur, in some they are well marked, in others they are so mild as to escape observation.

There is sudden onset of pain in pelvis, worse on

one side, often there is pain in back, and bearing down, at times where a large Haematocoele forms rapidly there is faintness and pallor. The pulse rises perhaps to 100, 120 per minute, the Temperature is often raised to 102-103, *Defaecation* is difficult, and painful owing to the blood burrowing its way around the Rectum, frequently with these symptoms, there is headache, the tongue is coated, and there is general *Malaise*. On examination of the Abdomen, there is a deep seated fixed mass felt rising out of the Pelvis, tender on pressure rounded and dome shaped above, reaching to an inch or so above the Pelvic *Brim*. The lower surface frequently presents a peculiar concave vaulting in the words of Mr. Tait, it is like an irregularly shaped jelly fish, rounded above, and concave below, the edges of the mass are felt to fade off downwards on the walls of the Pelvis just as the groins of a Norman crypt fade off on the brackets or capitals which support them.

On rectal examination the characteristic annular *Stricture* structure is felt in cases where the blood has dissected backwards around the Rectum.

#### Suppuration.

The occurrence is indicated by rigors, rise of Temperature specially at night, *acceleration* of pulse rate, increase of pain and swelling in the affected region, profuse sweats at night with a tendency to point either in the direction of Abdominal Wound or into the corresponding fornix Vagina, or as in one of my cases, where it burst through the vaginal roof into Rectum and discharged for weeks, ultimately the patient got quite well

Treatment.

1. Prophylactic.
2. Remedial.

Absolute aseptic surgery certainly seems to diminish the frequency of their occurrence, and when they do occur, give little trouble provided that the ligature used is aseptic.

It is where a ligature that has not been sterilized by boiling or other prolonged immersion <sup>in non-irritating antiseptic fluids</sup> lies in contact with effused blood in the Broad Ligament, acting like a <sup>seton</sup> ~~septic~~ that suppuration almost always takes place.

Haematocoeles are not known to occur after the proper use of the Clamp and Cautery to the Pedicle. I say proper use, because I believe it is not widely known that the essential point requisite here is not the cauterizing of the edge of tissue projecting beyond the clamp, but rather the thorough cooking of the portion within the grasp of the Clamp, at a temperature under dull red heat, the clamp being heated by the cautery irons and the heat prolonged until the cooked portion looks like a film of translucent *horn*. I understand from Mr. Tait that this was the objective point aimed at by the late Dr. Keith, on inspecting this portion of pedicle, so treated, you can see the <sup>Blood Vessels</sup> ~~Broad Ligament~~ running up to the <sup>cooked</sup> ~~heated~~ proximal edge but not beyond this.

Further the amount of steady heat required for this purpose frequently lasting 10 minutes, rendered everything aseptic, whilst no ligature was left to act either as an irritant or as a germ centre.



This same result can now be attained by means of a small cautery clamp heated by Electricity, the so called Electric Haemostat of Mr. Lawson Tait.

It consists of two pieces of oblong ivory or metal each with a groove running from end to end, which contains an Aluminium lining insulated from the ivory in a plaster of paris and asbestos compound.

Inside each aluminium chamber runs a loop of Platinum wire, size No.19. B'ham wire <sup>Sage</sup> ~~gauze~~, the ends of which are connected in series by means of a short flexible copper cable to an accumulator; it takes 15 amperes to bring the platinum to the required temperature, which is done in about 3 minutes, a pedicle enclosed in the already heated cautery, is thoroughly cooked to a translucent horn like condition in five minutes; the time required for sponging out the abdomen, and inserting stitches in the abdominal wound, the cooked portion is then inspected, and if satisfactory is dropped back into the abdomen, without any <sup>anxiety or</sup> ~~anxious~~ fear of haemorrhage, the accumulator used lasts seven hours with one changing. <sup>H</sup> Having been associated with Mr. Tait in the perfecting of some of the details, I earnestly recommend this method of treating the pedicle to the consideration of my readers, feeling assured that the principle of cooking the pedicle is right, whilst the application of electricity will be of very great convenience especially as in the near future, we shall probably have the current laid on in mains to our Hospitals, just as gas is at present, a rheophore taking the

place of a graduated stop cock. *See footnote marked thus - if you restage overlaid*

Remedial Treatment.

1. Keep the patient perfectly at rest, nature will arrest the haemorrhage. Leiters coils with cold water placed over the affected region will probably aid nature.

2. Should there be signs of internal Haemorrhage such as a gradually increasing pulse, with a steady lowering of temperature, a blanched appearance with faintness, probably the Haematocoele has burst into the Peritoneal cavity. In ~~general~~ <sup>Such</sup> cases the abdomen should be opened, the bleeding points sought and ligatured, the abdomen washed out. Should it be difficult to secure all the bleeding points, a strip of sterilized Iodoform gauze packed into the affected side of pelvis, the end of which is brought out through lower angle of wound, will be found useful.

3. *A Haematocoele* ~~It~~ having formed where everything ~~was~~ <sup>is</sup> aseptic in a few days the initial symptoms will have abated, then with antiphlogistic remedies such as rest in bed regular action of bowels, low diet, and later by *Vaginal Douches* and H.V.D. and Ichthyol <sup>tampons</sup> absorption will in all probability be perfect in a month or so.

4. When the effusion has clearly become purulent, and specially if there ~~is~~ <sup>be</sup> septic symptoms it should be evacuated, without delay. Should it bulge into vagina, it should be tapped at the most prominent part with trocar and canula, before the latter is withdrawn a drain tube should be slid into cavity.

5.

Should the Haematocele point towards skin, the lips of wound should be separated with a pair of <sup>Dressing</sup> forceps and pushed on to cavity of Haematocele and a piece of D. Tube inserted. Should the contents be offensive, the cavity should be washed out with Iodine water 2 or 3 times a day.

\*  
Since writing the above, I have had the opportunity of using the Electric Haemostat, on two occasions, the one for a case of pyosalpinx on left side, here the pedicle was rather thick, and it took 10 minutes to thoroughly cook it, the other was a small Parovarian tumour with a thin pedicle which was thoroughly cooked in 6 minutes, both patients made an uninterrupted recovery, with less distension than I have usually noted in cases of abdominal section. Mr Tait kindly assisted me in both cases, On 1<sup>st</sup> April 1896 I assisted Mr Tait in removing the appendages for a small myoma, the Haemostat was used with the same good result so far as the cooking of the pedicle was concerned. The patient was progressing well at the time of my leaving Birmingham on April 4.  
A Morgan (15)

Tubercular Kidney.

Name. Mrs. C. H. aged 40 years, married, no children, no miscarriage, occupation Domestic residing in North Wales admitted Feb. 9th, 1896.

Complaint. Enlargement of Abdomen, together with great weakness and inability to use right leg.

Duration of Illness. Two years.

History. Seventeen years ago patient had a serious illness, which her Doctor called the Gravel. Patient was ill for nine months, being in bed the greater part of the time. Two years ago patient sustained an injury to her right side in the region just above crest of illium, midway between the anterior and posterior superior spines, which was very painful for a few weeks. It then got better, but the pain never entirely left her side. A year ago this pain in the side got worse, and now she noticed the right side of her Abdomen was swelling, also from this time on she used to pass large quantities of Urine on some days, on other days the amount was considerably smaller. The Urine was often full of gravel, but no blood, nor pus so far as patient noticed was passed.

As the Abdomen continued to swell her right leg became numb and painful, the swelling seemed to become much more prominent and bulging just above the posterior third of crest of illium.

Menstrual History. Menstruation began at age of 14 years, has been quite regular ever since; formerly each period lasted

fully a week, but within last two years has declined to three days, and is now painful and scanty in amount.

Present Condition.

Patient is a thin emaciated looking woman, who looks 60 years of age, with a swollen abdomen. On examination a swelling is found occupying the whole of the right half of the Abdomen, extending from Poupart's ligament below to the Xiphi Sternum above; also from slightly beyond the middle line anteriorly, to within three inches of the spinous processes of the Vertebrae posteriorly, fluctuation is ~~so~~ easily obtained whilst there was a distinct bulging and threatening to burst immediately above the posterior third of the right iliac crest.

The Urine was normal in amount with no albumen or pus or blood. The right leg was swollen and colder than left leg. The heart and lungs were in a normal condition.

Family History.

There is a suspicion of Tubercular mischief in Family history. The father died of Bronchitis, after a long illness whilst a sister died of inflammation of the Lungs. The Mother, two brothers and a sister are alive and well.

Operation.

On Feb. 10th with the kind assistance of Mr. Tait I opened the Abdomen in the middle line and on introducing the hand, verified the diagnosis; with a trochar and canula, eighty ounces of pus were drawn off, the peritoneum and capsule were next stripped off the partially emptied sac, which allowed the largely dilated kidney to be shelled out. The pedicle including the

Ureter was secured by the Staffordshire Knot. The Abdomen was flushed out with plain boiled water, the other Kidney was examined and found to be enlarged, a drainage tube was inserted and the wound closed.

After Treatment.

Patient rallied well from the operation, the tube was drained every half hour at first, when there was much free discharge. Gradually the discharge lessened and the tube was removed on the evening of the 12th, just 54 hours after the operation. It was removed, first, because there was nothing coming through the tube Second, because if left in too long, sometimes a trouble some sinus is left. In this case probably I was too hasty in removing the tube for in a few days after tube was removed, there was evidence of an accumulation of fluid in the capsule of the kidney. Gradually there formed an indefinable brawny hardness, tender to touch, in the right lumbar region. Also an extremely dry and red tongue together with a subnormal temperature. These symptoms became aggravated, so that in six days from the taking out of drainage tube, the swelling was distinctly gravitating to the posterior third of illiac crest. On the evening of the 18th. February, just 3 days after the operation, I punctured with a trochar and canula at the last named spot, and drew off quite a pint of foul smelling pus. The opening was enlarged and a drainage tube inserted. The cavity was washed out with Iodine water, hot, a drachm to the pint, twice daily.

After this, patient began to improve, to gain

strength, and take food well. She sat up on the 4th March, 23 days after the operation. Gradually the cavity contracted, the discharge lessened, and the tube shortened. Patient went home on March 16th, just 33 days after operation, in very good health, was able to walk somewhat, her appetite was good, the discharge had almost ceased, a very small bit of drainage tube was still left in opening in side.

Tubercular disease of the Kidney may occur in one of 3 forms; -

1. Acute miliary tuberculosis which usually attacks both Kidneys equally, and is secondary to tubercle elsewhere. This form is never seen except post mortem.
2. Alocalised primary acute tuberculosis of the Kidney, occasionally met with, which may be arrested by incision and drainage, or may be only relieved as to its symptoms and which later may infect the other Kidney and cause death by Uraemia, Thornton.
3. The chronic localised tuberculosis of the Kidney, renal phthisis, tubercular Pyrlites, tubercular pyclo nephritis or Strumous disease of the Kidney.

Pathology.

I cannot better describe the scrofulous Kidney than in the words of Newman, Lectures on Surgical Diseases of Kidney, page 283. The principal seat of the lesion is the apices of the papillae in the calyces or in the pelvis of the Kidney, and from hence, partly by the blood stream, and partly by the lymphatic channels, the material virus is carried within the substance of the Kidney.

The primary focus becomes occupied first by miliary tubercles, and subsequently by a caseous mass. In the course of a few weeks or months this mass forms an irregular softened area, which by progressive peripheral infiltration spreads inwards.

At the same time, by infection, new, and to the naked eye, apparently independent nodules develop in the tissue around, while in more remote parts of the Kidney, and in the Mucous Membrane of the pelvis, an eruption of opaque white nodules may appear. In recent cases these diminish in size and number, the more distant they are from the primary focus, but when the disease is of long standing, the individual nodules cannot be distinguished. The constructive process which has just been described, is rapidly followed by a destructive one. The tubercular nodules having attained a certain size, undergo caseous *degeneration*, break down, and when in the pelvis of the Kidney they become replaced by a tubercular ulcerating surface, or within the renal parenchyma they are transformed into irregular globular cavities. These, as they enlarge, become elongated and assume a pyriform shape and approaching the cavity of the renal pelvis, rupture into it. As the destructive process extends from within outwards, gteater and greater portions of the renal substance become involved, until finally, the whole of the medulla and a large portion of the cortex may be destroyed. This leads to the formation of a large cavity. But besides



the encroachment on the renal tissue by tubercular disease, dilation and sacculation of the organ may be caused by a blocking of the Ureter, ultimately producing a tubercular pyonephrosis, which sometimes, when the other Kidney is free from disease, destroys all vestige of Urine secreting tissue. Should only one organ be involved, the Kidney may by a drying-up of the contents of the pyonephrosis, become converted into a shrivelled putty-like mass. But if the Ureter be permeable, the Urine washes away the collections of debris, and the products of suppuration, which present a characteristic appearance. This debris, in its passage down the Ureter, and through the bladder, often infects their mucous surfaces, and this infection frequently travels up the mucous membrane of the opposite Ureter, and so infects the other Kidney.

#### Symptoms.

When tubercle occurs in the disseminate form it produces no local symptoms in the early stage. This form is apt to affect both Kidneys, and as a rule later on reveals an intense degree of constitutional infection.

In the Strumous Kidney, the general symptoms are not well marked in the early stages. As the disease advances one notes feverish symptoms which gradually pass into the hectic type. The local symptoms may be negative early in the case, but often bladder symptoms attract attention early in the progress of the case, such as great irritation with almost constant desire to pass water, with scalding pain during the act. At the same time there is often pain on pressure on the affected

organ. A dull aching pain is often felt in the loin, which does not radiate to the testicle and the groin. Later on a tumour may be felt which gives a tympanitic note of the colon in front, whilst there may be increased dulness on percussion in one or both renal regions posteriorly. When both Kidneys are seriously affected, constant vomiting, irregular fever, rigors, loss of weight and strength, frequently form marked features in the case. The secretion of Urine may be normal or polyuria may be present when the disease is not far advanced. The urine may be acid or alkaline, of fair specific gravity, may be albuminous and sometimes bloody. It often contains pus, with debris of renal tissue in considerable amount, also the tubercle bacillus may be present and sometimes recognized, when the diagnosis will be established. Sometimes there are masses of cheesy material in the urine which are eminently characteristic of Tubercular disease of the Urinary passages, occurring in no other form of disease of the Urinary tract. Blood may occur but is seldom abundant, and often completely wanting. If both kidneys are affected the quantity of urine gradually diminishes and the amount of solids excreted becomes less. As the disease advances the enlarged Kidney becomes clearly perceptible, presenting the ordinary signs of a Renal Tumour. A Chronic Abscess may form, and in many cases general tuberculous infection takes place and the patient dies from exhaustion.

Occasionally the urine becomes suppressed and then symptoms of Urnemia herald the fatal termination.

Diagnosis.

The existence of pyelitis, combined with symptoms of Tubercular disease in other parts, and above all the characteristic fragments of cheesy material in the Urine, with the demonstration of Tubercle Baciller give positive evidence of Tuberculosis of the Kidney.

It is said that vesical irritation is the most usual and often the most prominent and distressing symptom. Dickinson has said that in a case containing pus from the Kidneys, the absence of bladder symptoms excludes renal tuberculosis. (Textbook of Surgery, American Authors, Vol. II. page 804.) It is more probable however that vesical irritation depends on a beginning deposit of tubercle at the lower end of Ureter or in the bladder.

The diagnosis between Tubercular and Calculous disease is often exceedingly difficult, the following table from Erichsen is valuable.

1. Haematuria is often absent in Tubercular disease and when present is uninfluenced by rest and exercise.

2. Pus is present early, is often abundant, and more constant in amount than when due to calculous pyelitis.

3. Caseous matter may be present in the Urine and may contain the tubercle bacilli.

4. The frequency of micturition is, as a rule, more marked than in stone and is not relieved by rest.

5. The pain in Tuberculosis is generally more persistent and localized than in stone and is less

influenced by movement.

6. Evidences of Tubercle may be present elsewhere especially in the Testes, or prostate, or vesiculae seminales.

7. Nocturnal elevation of temperature is suggestive of Tubercle.

8. Progressive emaciation may occur but not uncommonly the general condition of a patient with primary Tuberculosis of the Kidney is good.

#### Treatment.

It is only by making an early diagnosis, and taking advantage of it that the Surgeon can hope to prolong the life of his patient. Should catheterization of the Ureters be possible, and the examination of the Urine prove the disease to be limited to one Kidney, or the use of the cystoscope show the Urine from one Ureter to be clear and fairly good, whilst the other Ureter shows urine more or less purulent, or mingled with debris, an exploratory incision should be made in the Lumbar region, and free exit given to the tubercular debris, then should the disease prove to the examining finger to be at all extensive, Nephrectomy should at once be done, since if there be much ulceration and destruction of renal tissue, prolonged suppuration is certain to follow Nephrotomy with the grave risk of setting up Amyloid Changes in the other Kidney. This danger, plus the risk of the Tubercular disease extending to other parts naturally raise the question of the propriety or otherwise of leaving a Tubercular focus to separate by suppuration. When the Tubercular disease

is at all extensive and provided it be localized to one Kidney, Nephrectomy should be performed as a primary operation.

Nephrectomy having been decided upon, one may use the Lumbar or Abdominal method.

By the lumbar operation, one does not as a rule, open the peritoneum <sup>8</sup> by this method, all small kidneys e.g. such as nephrectomies for persistent Ureteral fistulae, for wounds of Kidney with extravasation <sup>of urine</sup> or suppuration, for small growths <sup>of</sup> Kidney specially if moveable. Also in cases of enlargement containing fluid, <sup>Hydatid</sup> hydrated, hydro-nephrotic or purulent, in which incision and drainage has not produced a cure. Also in cases of calculus in which the renal tissue is completely disorganized, the lumbar method is the best.

The abdominal Method is best in large solid Tumours, also for those moveable kidneys, which are diseased and therefore unsuitable for nephrectomy.

In very fat subjects the abdominal method may be easier than the Lumbar as permitting of easier approach.

## Parovarian Tumour.

M. C. aged 35, married 9 years, occupation Domestic, residing at Aston, has four children, youngest 3 years old, labours have all been favourable, no miscarriage, admitted Jan. 23rd, 1896.

### Complaint.

Pains between shoulders and in back, worse before monthly period, also continues all through the period. Menses fairly regular, sometimes 3, sometimes 4 weeks. They remain on for about four days, profuse in quantity accompanied with much pain. Bowels are constipated, micturition is specially frequent and troublesome during the period. She also has a bad cough and spits blood occasionally. She is losing flesh, and her appetite is very poor.

### History.

Patient has been in good health up till about six months ago when she noticed the pains in back commence. Also greater inconvenience at the monthly periods. Then the premenstrual pain began, later it continued all through the period.

Present Condition. Chest. There is impairment of movement of right side of chest, with increase of V.F. also of V.R. The percussion note is higher pitched than on the left side, whilst Bronchial breathing is heard all over upper half of right lung. Abdomen is negative. Posterior <sup>Per</sup> Vaginam. A swelling is felt in front of Uterus, the size of a 4 months pregnancy, fluctuation is easily obtained, sound passes into Uterus. For  $3\frac{1}{2}$  inches behind and to the right of the growth <sup>on</sup> Bimanual a tense fluctuating

cystic swelling felt in front of Uterus. The right appendages are easily felt distinct from Uterus; the left are not felt.

Diagnosis.

Small Ovarian Tumour.

Operation.

On January 27th, with Mr. Tait's kind assistance I opened the abdomen in the middle line, when a cystic swelling was found filling the brim of pelvis. This was drawn up with forceps, after a few slight adhesions were separated, it was tapped and about a quart of clear amber-coloured fluid drawn off; the collapsed cyst drawn out and the pedicle ligatured. The wound was closed without drainage.

The patient made an uninterrupted recovery. Temperature never went above the normal. Her cough troubled her a good deal the first three days and then gradually quietened down. Milk and lime water were commenced 40 hours after operation. Tea and toast a few hours later. The bowels were kept acting with Calomel, Seidlitz Powder and Enemata. There was no distension. Stitches were removed on 9th day; patient was sitting up on 13th day, and left for home on the 24th day, the wound having healed soundly.

Remarks.

On examining the emptied cyst, our first impression was that it was a large Hydrosalpinx, but careful examination showed the tube was present and patent but not dilated.

The ovary was also present somewhat flattened out. The Cyst was entirely covered with peritoneum which was

easily separable from the Cyst wall.

Considering these points, viz, the presence of a Patent F. Tube, a flattened out ovary, a covering of peritoneum, the pale amber coloured fluid, its attachment to the broad ligament, I think one is forced to the conclusion that it was a parovarian tumour.

Although I made a wrong diagnosis I believe that the treatment adopted was right.

Keith's Text-book of abdominal Surgery, page 379, speaking of the treatment of parovarian cysts, recommends aspiration or removal. He states that now that Abdominal Surgery has made such great advances, the opening of the abdomen is so devoid of risk that it has come to be the common mode of treatment. In the next paragraph, speaking of aspiration he says, this simple and safe operation cures the great majority of cases. The women in whom it is most certain that the sac will not refill are the young ones. In middle aged and old women a repetition of the aspiration may be required. Aspiration should always be tried first.

Tait's Diseases of Women, page 227, says, in speaking of treatment of parovarian tumours that they are not matters to trifle with. Their early removal is always single and safe. They should never be tampered with by tapping, but ought to be removed by aspiration in their early stages just as should ovarian tumour. Sometimes they burst and seem to disappear spontaneously. When this fortunate accident takes place early in their



history, it will probably do no harm, but if it occurs during the advanced stages it is just as likely to result in cancerous implantation of the peritoneum as if the cyst had been ovarian. From these opinions it is evident that abdominal section is the safest and best method of treating these apparently single cysts.