

Clinical Observations

IN

INDIA DURING THE WAR.

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THE following are brief observations which seem of interest, made during nearly three years in India. They are not meant to be exhaustive and I have confined myself to conditions peculiar to the tropics and mainly to India.

War wounds.—The gunshot wounds coming back from Mesopotamia did not suppurate either so often or so freely as those sustained in France. Many presented the clean "in and out" character of the South African war wounds. This is probably because the soil of Mesopotamia is not so infective as the highly manured soil of densely populated and elaborately cultivated countries like Belgium and Northern France. Tetanus and gas gangrene were infrequent, almost the only cases that I saw in India being in wounded Turkish prisoners, who had, before coming into British hands, been—perhaps unavoidably—inadequately treated.

Anæsthetics.—I am convinced that ether can be given in India. In 1916, on arrival, I was fortunate in having under me officers who could give "open ether," and it became the routine anæsthetic. Later the details of an "open ether" series of cases were carefully recorded at one of the Bombay war hospitals. The operations were in May and June, the hottest time of the year, with the temperature between 90° and 100° F. Scopomorphine sometimes, but not always, preceded. The majority of the operations were abdominal. No difficulties were experienced in any case; the amount of ether given was not excessive. In India with ordinary precautions there is no difficulty in keeping ether. It could be manufactured there with a little enterprise.

Operating and operation theatres in hot climates.—To prevent sweat dropping on to the wound area special assistants dab the faces of those concerned in the operation with the ends of rolled towels or with mops on handles. A small mouth mask should be worn. Through a large-type face mask one perspires and cannot be mopped. Bacteriological investigation of the sweat on several occasions universally gave a pure culture of *Staphylococcus albus*. The following is probably a case of sweat wound infection.

On a hot day the femur was plated with two heavy plates in a simple fracture; skin was carefully excluded. There was a slight evening rise of temperature, usually 99.2°. Except for this all went apparently well until between five to six weeks after the operation, when a point of sero-purulent oozing appeared in the wound line; this gave a pure cultivation of *Staphylococcus albus*. Later, after bone union, the plates were removed and every one of the screw-holes tested gave a similar cultivation. Cases such as bone-plating should be removed to a cool place for operation.

A fan in the theatre is unobjectionable; the air near it showed no more organisms than in other parts of the theatre. A case of neck suppuration led me to advise that the long-haired, full-bearded Sikhs should wear sterile linen fitted covers for head and beard during operations on them. A roof light is not usually found in Indian theatres. Sterile topees for all concerned would be a ludicrous addition to the equipment! There is no objection, however, to a sloping north roof light of the long and narrow type continuous with a narrow north window. Too big a north window is to be avoided. I know of one "war" theatre where practically the whole north wall is glass, making it a veritable hot house. The room where the sterilisers are should not be continuous with the theatre, but cut off by an open corridor—i.e., one with a roof but no sides.

Orthopædics.—The principles of military orthopædics have been so often and so well enunciated that I will not give more than the briefest summary of my views. They are embodied at length in the *Indian Medical Gazette*.¹ The treatment of these cases should be preventive from the

beginning; it is necessary that there should be quick return from the active war areas and segregation in a few large special hospitals where all the necessary specialists and the special treatment materials are assembled. I had to combat the idea that British "orthopædics" could wait until they got to England to be treated. Many could be cured and sent back to duty. For those—a minority—who had to go home I recommended "orthopædic" equipment on the hospital ships.

The cases in Indians presented some special features. A number were largely functional, and amongst some of these patients—as those who know the country will realise—a disability is regarded as an asset. Particularly it was found that special physical drill was very valuable in curing functional deformities, and on the parade ground the motionless arms or legs would gradually be seen to move more and more in concert with the limbs of the others exercising. In this connexion it is interesting to call attention to the great use the Germans have made of this form of treatment.

Head cases.—A number of cases of head wounds which had gone to England and, being apparently well, had been sent back to Mesopotamia came under my notice in that, having been a very short time in Mesopotamia, they were invalided to India with headache or other symptoms. My conclusion was that head wounds should not be returned to a hot climate. I saw my colleague Major L. B. Rawling's cases of decompression for epileptiform attacks following heat-stroke, and can testify to the benefits of the operation.

Oriental sore.—This cutaneous or subcutaneous malady, due to the infection of the tissues with *Leishmania tropica*, is of great interest. Its names are protean: Delhi boil, Bagdad boil, Aleppo boil are some of many. The cases which I saw all came from Mesopotamia. Sand-flies have been suggested as a possible source of infection. In typical cases the diagnosis is easy—a more or less scabbed, sloughy, often circular ulcer, usually on exposed parts of the body. Diagnosis is confirmed by finding the typical parasite in scrapings or, better, by puncture of the edge. The subcutaneous form is often most puzzling. In a case shown by Lieutenant-Colonel R. Row, I.M.S., to the Bombay War Hospitals Medical Society there was a group of keloidal swellings, each about the size of an almond, over the left scapula; in a nursing sister, whom I saw with Captain H. Weir, R.A.M.C., there was a bluntly pedunculated sphere on the lower lip the size of a large marble, pale, shiny, œdematous-looking, of six months' duration. Diagnosis in these two cases would have been impossible without the aid of puncture. I saw many cases in British soldiers and several in nurses.

As with many diseases which spontaneously tend to get well, numerous forms of treatment have been credited with success. Colonel Row gave a vaccine prepared from the parasite and dressed the sores with salol in oil. I have seen good results from salvarsan and from X rays. Other measures, such as scraping, ionisation, and the application of antiseptics or caustics, sometimes apparently cure but are followed by recurrence. Intravenous injection of antimony tartrate is usually successful. A good treatment for small sores suitably situated is complete excision. Microscopical examination of the excised sore shows down-growing columns of cells with cell-nests indistinguishable from epithelioma. This has an interesting bearing on the ætiology of cancer, and it is to be remembered that the South American nasopharyngeal form of the disease is known as "Leishman cancer."

Regarding infection, Colonel Row called my attention to a flagellate found in the latex of plant juice (*Euphorbia*) which strongly resembles, morphologically and culturally, the flagellate form of the Leishman body. As the incubation period of oriental sore may be prolonged to five or six months, and as apparently healed cases may recur, the disease should be borne in mind in the home country.

Kangri cancer.—A visit to Srinagar in Kashmir gave me an opportunity, through the kindness of Dr. Ernest Neve, of visiting the excellent mission hospital there and learning something about this disease. The Kashmiri keep themselves warm during their very cold winters by hugging to the abdomen under the clothing a kangri, which is an earthenware receptacle about 4 inches across enclosed in basket work, this being continued into a curved-over handle. In it is kept glowing wood ash. Minor skin irritation, staining, or

¹ "The Principles of Military Orthopædics, with Notes on the Constitution of an Orthopædic Hospital," *Indian Medical Gazette*, vol. llii., No. 9, September, 1918.

ulceration are common results and sometimes cutaneous cancer develops. I saw Dr. Neve operate on one case. The patient, a man, aged 60, had a large circular median growth below and including the umbilicus; it was removed with muscle and a portion of peritoneum. In this case the growth was recurrent, the original operation having been done six months previously. For the following facts I am indebted to Dr. Neve. The cancer occurs in skin irritated or actually burnt from kangris. As well as the abdomen, the fronts of the thighs are affected from squatting. Though this growth is below the umbilicus the glands in the axillæ must be examined, as they may be affected. It is best to remove the groin glands when operating, even if these are not obviously affected. The disease is more frequent in people who have warts or moles about them. The man whom I saw operated on had a pigmented mole on his forehead. Dr. Neve had never seen a case under 30.

Guinea worm.—It would puzzle anyone unacquainted with this infection to know the meaning of an earthenware receptacle of water suspended some feet above the leg of a patient, while from a small hole in its bottom water drips on to an opening in the patient's leg, from which a whitish thread protrudes. This is a method of coaxing out the worm. The worm—always a female—lies under the epidermis. It tends to emerge, and this may be hastened by injection of various antiseptics. When, as occasionally, closely coiled the worm can be excised in toto; rarely it protrudes as a loop. The native method of abstracting it is by twisting the protruding portion round a stick, giving a turn or two daily. Castellani suggests that the worm is the fiery serpent of Moses; if this is so, the badge of the R.A.M.C. shows this method of abstraction! The worm should never be pulled upon, for if it breaks in the tissues it sets up an intense gangrenous cellulitis, often fatal; I saw two cases of this kind which died. The worm is mostly uterus, and the uterine contents appear to be intensely irritating to the tissues. The method of treatment is, of course, alluded to in some text-books.

Inguinal bubo.—I saw quite a series of cases in which no source of infection was demonstrable, the majority being in Colaba War Hospital under the care of Captain G. W. Bury, R.A.M.C. The patients were British, the greater number being sailors. The glands enlarge and soften and excision shows broken down gland tissue and sero-purulent material. Cultivations were invariably reported sterile. The wounds often broke down aseptically and were slow in healing. I understand that cases of "Oriental bubo" are common amongst natives in the Madras district. The occurrence in sailors suggests infection through the bare feet, but no evidence was found in support of this.

Leprosy.—Of very great interest was a visit which I, in common with a number of other medical officers, paid to the leper asylum at Matunga, Bombay, on the kind invitation of Dr. Arthur Powell. The patients were mostly Hindus, and the majority had lived near the sea. Dr. Powell pointed out the roughened, wrinkled, reddened skin like an orange; frequent enlargement of the nipples, constrictions round the fingers like ainhum, depressed nose bridges, hoarse voices from nodules on the laryngeal cartilages, mixed cases—i.e., both nodular and anæsthetic, the light-coloured anæsthetic areas, cases showing ulnar griffe; others, weakness of the anterior tibial muscles. "Nastin" and other remedies had been tried without success. The bacillus is not pyogenic. It can be got from the liver and spleen. The patients die of tuberculosis or other intercurrent disease.

In the visitors' book we saw the signature of Jonathan Hutchinson in 1903 and his written expression of opinion that no harm would come from selling flowers gathered by the lepers in their gardens, but that other people should not eat food prepared by lepers' hands.

Cholera.—Nothing struck me more about cholera than the urgency necessary for its treatment. To get cases early and to treat them early is to save their lives. The cholera outfit should be as ready and as handy as the tracheotomy box. The copious hypertonic saline intravenous infusions and the free oral administration of permanganate of potash are—as discovered and so ably advocated by Sir Leonard Rogers—truly life-saving procedures. I was glad to hear the presidential address of Sir Leonard Rogers to the Indian Science Congress at Bombay in January of this year, when he told us that his latest results showed a mortality of only 14.9 per cent.

Plague.—It is difficult to believe that this—perhaps the greatest scourge of India—only last invaded the country in 1896. Besides the rat, a little squirrel, known as the tree-rat, almost universal in India, can become infected. It seems to me that what is wanted in India is not so much laboratory research in plague as sending out amongst the people "missionaries" of their own race and class to teach them what to do to avoid plague and how to act if it occurs.

Malaria.—Of the numerous malaria patients a certain proportion come under surgical attention for this or that reason. I saw three cases of musculo-spiral paralysis following intramuscular quinine injections into the upper arm; in two of these the nerve had been freed from fibrous tissue and they were recovering. My experience is that aseptic operations do not set up an attack of malaria in patients who have parasites in their blood but no active symptoms. The patients were usually taking quinine at the times of the operations. I saw arthritis attributed to malaria.

I saw also sufferers from dysentery, scurvy, the typhoid group, influenza, and tuberculosis.

Dysentery.—I saw thickened transverse colon, cases of general tumidity of the abdomen, arthritis of knees and of ankles, and rectal ulcer which had been diagnosed as cancer. With regard to carriers, my colleague, Captain W. MacAdam, R.A.M.C., found proportionately more amongst the general hospital population than amongst the cases labelled dysentery.

Scurvy.—There were at one time many cases in Indians, and I am afraid the lime juice issued was not always a prophylactic. A series of leg sores, many apparently resulting from slight injuries, yielded readily to anti-scorbutic treatment, Dakin's fluid proving the best dressing for the ulcers. The hæmatoma in the calf or elsewhere resulting from scurvy is puzzling to diagnose if one is not on the look out for the disease.

Typhoid group.—Amongst the complications I saw phlebitis with leg ulcer; osteitis of tibia, humerus, and metacarpals; paralysis of deltoid with pectoralis major; a case under Lieutenant-Colonel T. S. Novis, I.M.S., where the muco-pus from the gall-bladder gave a pure cultivation of paratyphoid A; another case, on which I operated, a long-standing carrier, in which the gall-bladder contents were sterile. I wish that the surgeon had been called upon to drain the gall-bladder and the bacteriologist to investigate its contents in more of these carrier cases. A curious case of bilateral swellings in the posterior knee region following typhoid showed nothing but muscle on incision. A *B. coli* infection of the urine occurred occasionally after typhoid; the patients had puffy, pasty faces. An autogenous vaccine usually, but not always, cured.

Influenza.—Amongst the surgical complications I noted two cases of suppurative parotitis, one bilateral. From the pus of the latter pneumococcus was obtained in pure culture.

Tuberculosis.—There seemed an unusual incidence of surgical tuberculosis of bones, joints, glands, and abdomen in Indians who had been in France. Special institutions are badly needed for the treatment of these cases.

Snakes.—Cobras and kraits were a *bête noir* in my hospital area, and one walked about at night with a lantern. The antivenine and other necessary equipment for treating snake-bite were always kept ready in the emergency receiving room. Antivenine is useless for krait-bite. It was interesting at the Bombay Bacteriological Laboratory to see the snakes handled. They bit into material stretched tightly over the top of a wineglass, the venom being milked out of their glands into the glass. Then they were fed with a milk preparation through a funnel. The Russell's viper was the fiercest of all. The man who handled the snakes was rumoured to get the munificent sum of 10-15 rupees a month!

Ulcers.—Bites of mosquitoes and other insects sometimes develop into ulcers which were slow in healing. At Secunderabad I saw a case of ulcer of the ankle which had given a pure cultivation of a diphtheroid bacillus, and I was told that there had been a regular epidemic of similar cases elsewhere.

Madura foot.—I saw one case of this in an Indian. It had started three months previously at Samara, and was attributed to the kick of a mule. There was a large puffy swelling over the inner ankle in which were several sinuses from which pus could be squeezed showing the characteristic yellow granules.

Bilharziasis.—This I saw successfully treated by Captain T. B. Heaton, R A M.C., with intravenous injections of antimony tartrate.

Bugs.—These are the plague of Indian barracks and most difficult to get rid of. To deprive them of their proper nutriment by emptying the barrack of its human inhabitants is not much good, as one realises by recalling Shipley's statement that a bug can live for a year without nourishment, although at the end of that time it is so thin that you can read print through it. We had most success by generating HCN and letting it into the barrack, emptied except for its furniture and bedding. The louvred roofs of the barracks are, however, difficult to seal. The HCN machines are used by railway companies in India for their carriages. The smell of prussic acid wafted over the barracks of a 3000-bedded hospital is most impressive.

For bedsteads total immersion in a special tank of boiling water is, of course, effective. This method I saw in use at Secunderabad. Wooden bedsteads and wooden mosquito poles are to be avoided; the bugs get into all the cracks. Apart from the above, painstaking cleaning of bedsteads and furniture and sterilisation of bedding and clothing are the best remedies.

Conclusion.

In conclusion, let me say how fresh and varied in medical experience is India to the newcomer, and I hope that these random notes will do something to convey this interest to others. I trust that the Medical Service of India, remodelled as it should be, with its manifold opportunities for interesting practice and its general attractiveness, will never cease to command the best trained members of the profession.

MATERNAL MORTALITY IN CHILD-BED.

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CAN maternal mortality in childbirth be further reduced?

At the present time, when most medical men interested in obstetrics are studying eugenics and antenatal pathology, it behoves one to produce all possible evidence in the hope of arriving at improved results and diminished maternal mortality. I have thought it might be of interest, and possibly helpful, to give an abstract of 35 years of midwifery in private practice. No record of a large number of cases under these circumstances has recently been published, and a comparison between the results obtained in private practice and in public institutions may lead to useful conclusions. I have looked up the notes of all the cases of pregnancy and labour for which I have been personally responsible during 35 years and I find that in round numbers the total is 2100. I met, unfortunately, with seven maternal deaths, of which I give abstract notes below, taken from full records made at the time.

Reduction of Septic Mortality and Morbidity in Special Hospitals.

The great risk of labour in the "seventies," and previously, was puerperal fever. The records of special hospitals and lying-in wards at that time make dismal reading, for they speak only of repeated outbursts of what is now known as streptococcal infection and the usual heavy toll of deaths, with consequent closing down of the wards.

The introduction of antiseptics in the late "seventies" gradually changed all this, and although the first attempts at grappling with the germ were not very successful, still, by continued effort, such an improvement resulted that for some years now streptococcal infection may be said to have been practically banished from lying-in hospitals and the obstetric wards of general hospitals, although occasional outbursts are from time to time reported in outlying districts.

As an obstetric clerk I remember officiating at several labours under the carbolic spray; nothing could be more disagreeable for patient and attendant, and the absorption of the carbolic acid occasionally produced carboloria and pneumonia. Anyone interested in the subject has only to refer to the late Dr. Robert Boxall's interesting and

exhaustive paper on "Fever in Child-bed,"¹ read before the Obstetrical Society, in which he showed from the statistics of the General Lying-in Hospital how by gradual experiments in various antiseptics, beginning with permanganate of potash, followed by carbolic acid, and, lastly, by mercury, septic mortality and morbidity was steadily reduced.

During the last few years a sepsis has somewhat replaced antiseptics; by that I mean sterilised dressings and gloves being used in place of strong antiseptic solutions. I must confess, however, that I know of nothing safer than the spirit solution of 1 in 1000 hydrarg. biniodide.

Care of Mother in Pregnancy and Puerperium.

Although streptococcal infection may be said to be a preventable accident, another formidable infection exists in *Bacterium coli*, the ravages of which are not yet fully grasped. The frequently depreciated health in pregnancy, especially among the poorer and ill-fed classes, is a fertile cause of this bacillus over-riding its natural barriers and infecting outside organs, especially the bladder, liver, and kidneys. In a recent paper I have endeavoured to show that very grave and even fatal results may occur from infection of the bile ducts by this organism.² The gonococcus, it need hardly be stated, is a formidable complication of the pregnant condition and may lead to a permanent disablement from infection of the tubes.

Pregnancy and labour are still looked upon by a large number of the laity as perfectly normal processes, but my experience, and I think that of hundreds of others, is that with our present conditions of life such is not the case.

I have always advocated the regular pelvic examination of women during the whole of pregnancy and the puerperium, in addition to a careful pathological examination of the excreta. When a patient misses a period and presumes herself pregnant a pelvic examination will reveal the possible presence of an ovarian dermoid cyst or uterine fibroid or other pathological condition which could be satisfactorily treated at the time. Examination at intervals should show a steady increase in the size of the uterus and an absence of any pathological products from the urine or faeces. Pelvic measurements are of great importance, and should there be the slightest suspicion of diminution or disproportion in any of the diameters of the pelvis the patient should be examined at fortnightly intervals, from the thirtieth week onward to term. Any deposit in the urine not clearing up by boiling should arouse a strong suspicion of bacilluria, and the practitioner should not be content with an ordinary test-tube examination.

It has also been my custom during the lying-in period to measure the level of the uterus daily for the first week, and to examine the pelvis internally at the end of a fortnight, and again at the end of three weeks, when the patient rises from her bed; subinvolution and retroversion of the uterus and unhealed lacerations are in this way detected.

Abstract of Fatal Cases.

I now append a short abstract of each of the seven fatal cases.

Acute Peritonitis.

CASE 1.—Aged 35, a 5-para, all at term. Pains began a month prematurely, vertex presentation, the labour lasted nine hours and delivery was natural and easy, a male being born alive. At the last labour, two years before, she had an acute attack of pain in the right iliac fossa, with temperature; this subsided and she remained quite well until a few days before the onset of the present labour; she then had several severe attacks of pain in the right iliac fossa, with temperature; labour came on prematurely during one of these attacks and continued after the labour. The patient died of acute peritonitis after 36 hours' illness; she was very weak and ill during the labour, with a rapid pulse and a hot, dry skin. A post-mortem was obtained, which showed general peritonitis over the lower abdomen, its focus being a gangrenous appendix lying in a cavity of putrid pus, the size of an orange.

It must be noted that this case occurred in 1883, at which period the pathology and treatment by operation of disease of the appendix was not sufficiently recognised; had I seen this case at the present time no doubt the proper course would have been to open the abdomen before labour commenced, and a satisfactory issue might have resulted.

¹ Obstetrical Transactions of London, 1889, xxxii., 215, 275.

² Hepatic Toxæmia, Royal Society of Medicine, Obstetrical and Gynaecological Section, 1916, 115.