

Original Articles.

SURGERY AT THE DAVID SASSOON HOSPITAL, POONA.

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THE following notes on the surgical work done at the David Sassoon Hospital may be of interest to readers of the *Indian Medical Gazette* as illustrating the type of work done in this part of India, for purposes of comparison with that in other districts and with surgery in England.

As will be seen from the appended list, the

is responsible for sterilisation of all instruments, ligatures, dressings, etc., and who assists at all operations—one chief assistant, and one or more assistants chosen from the students of the B. J. Medical School. Every fortnight four fresh students are taken, in order to give all a chance of learning some practical surgery. This plan may be sound from a teaching point of view, but is certainly not good from an aseptic standpoint, as students differ in their ideas of surgical cleanliness, and, moreover, the constant change of helpers makes it a little trying for the surgeon. There is one anæsthetist, a sub-assistant surgeon, who from the large number of anæsthetics that he is called upon to give, soon becomes an expert, and relieves the surgeon of any anxieties on the part of the anæsthesia. The menial staff consists of two theatre "boys" who do the

LIST OF OPERATIONS.

Abscess	140	Cellulitis	8
Litholapaxies	113	Mucoceles	3
Amputation of Limbs	80	Fibroid Polypi of the Uterus	3
Laparotomies	73	Exploration of Joints	3
Innocent Tumours	49	Varicose Veins	3
Radical Operation—Hernia	48	Suturing Lacerated Wounds	6
Cataracts and Needlings	46	Samisch's Section of Cornea	3
Necrosis of Bones	43	Trephining Skull	3
Fistula in Ano	32	Amputation of Penis	3
Tuberculous Glands	30	Removal of Upper Jaw	3
Radical cure—Hydroceles	29	Plastic Operation on Nose	3
Operation for Sinuses	27	Castration	3
Hæmorrhoids	25	Colporrhaphy	2
Curetage Uterus	23	Removal of Enlarged Bursæ	2
Incomplete Abortions	21	Ligature of Main Arteries	2
Enucleation of Eyeball	20	Prostatectomy	2
Liver Abscesses	19	Removal Foreign bodies	2
Malignant Tumours	16	Removal Foreign Pterygium	2
Extravasation of Urine	15	Wiring Patella	2
Amputation of Breast	15	Cauterization Corneal Ulcer	2
Mastoidectomy	9	Imperforate Hymen	2
Dilatation of Urethra	8	Rhinoplasty	2
Perineal Litholapaxy	7	Nephrotomy	2
Plastic Operation on Urethra	7	Iridectomy for Glaucoma	3
Tenotomies	7	Operation for Rectal Stricture	2
Decapitations and Operations for obstructed Labour	6	Laryngotomy	2
Tracheotomy	6	Hare Lip	1
Supra-pubic Cystotomy	6	Plastic Operation on Scrotum	1
Compound Fractures	5	Neurectomy	1
Urethral Calculi	5	Excision Elbow Joint	1
Empyema Thoracis	5	Trachoma	1
Contractions of Fasciæ	5	Excision of Head of Humerus	1
Stricture Urethra	4	Imperforate Anus	1
Circumcision	4	Urethro-Vaginal Fistula	1
Inguinal Buboes	4	Rectopexy	1
Perinorrhaphy	4	External Urethrotomy	1
Tonsillotomy	4	Laminectomy	1
Osteotomy	4		
		TOTAL	1,048

work is of a varied nature—something of the "mixed bag" type. The Deccan is not a "stone" or "eye" district in any way comparable to other areas, e.g., Hyderabad or the Punjab—hence the number of operations on bladder and eye is small compared with those in the select areas, but even still the number of cases is sufficient to offer one a fair amount of practice in that class of surgery.

A word may not be out of place as regards the surgical arrangements of the hospital.

The operating theatre is an old one, with no separate annexes for anæsthetist, sterilising, etc. Everything has to be done in the theatre itself—a condition of affairs which leads to inconvenient crowding. The staff consists—in addition to the surgeon—of one theatre nurse, who

cleaning up, carrying patients, and other minor duties.

Chemical antiseptics are freely used—a rigid aseptic ritual being almost impossible when the assistants are constantly changing. The antiseptics used are 1 in 2,000 Biniodide, and 1 in 500 spirit Biniodide for the hands—1 in 60 Carbolic solution for the instruments.

The Iodine method of skin sterilisation is used universally except in those regions of the body where it is inadvisable or not suitable. The silk and silkworm ligatures are boiled—the catgut ones are sterilised by the Iodine-Formalin method.

The dressings, gowns, towels, etc., are sterilised in a steam steriliser placed in one corner of the theatre.

Rubber gloves are not habitually used—while freely admitting the advisability of adopting them, the large number of pairs that would be required annually owing to the presence of students with the different sizes and shapes of hands makes the expense at present too great.

In the Jacob Sassoon Hospital they are used as a routine measure.

A list of operations that have been performed is given on the preceding page on in-patients in the David Sassoon Hospital during the past two years, *i.e.*, from June 1910 to June 1912—commentaries on some of the more interesting cases are subjoined.

Operations for Abscesses.—The majority of tuberculous nature—there is very little of interest to note here; as may be expected the number easily heads the list. In the majority of cases, free incision with gauze drainage and packing formed the treatment. In a few selected ones, incision, evacuation of contents and closure without drainage was the procedure adopted. In two instances the abscess cavity slowly refilled and required a second operation with apparent cure. In one case—a psoas abscess—injection of bismuth paste was tried, but was not successful, probably owing to errors in my technique.

Litholapaxies.—These come second on the list, numbering 113 with 5 deaths. Only one case occurred in a female. Two of the fatal cases occurred in small children, in whom the stone practically entirely filled the bladder—further experience has taught me that in these cases immediate supra-pubic cystotomy is the best treatment. Another death occurred in a young man with an encysted calculus. I crushed the portion which projected into the bladder cavity with much difficulty, leaving the fixed portion to be dealt with later. The patient died four days after, and *post-mortem* examination showed that the calculus had ulcerated through the bladder wall into the peritoneal cavity with extravasation of septic urine and peritonitis. I much regret that I did not perform a supra-pubic operation at the outset—the stone was so firmly gripped by the bladder wall that it had to be cut out—and on the surface is a deep groove showing the impression of it. The weight of this (the smaller portion) of the stone was 1½ oz.

Another death occurred in the case of a very old man—in whose bladder were two very hard stones completely filling the cavity—an attempt was made to crush with the giant lithotrite (No. 14 Arnold) resulting in bending and jamming of the male blade—supra-pubic cystotomy was necessary to extract the stones and release the blades—the two stones weighed 4¾ oz., and are the hardest I have come across. The patient did well for a few days but died with marked uræmic symptoms. I believe his kidney must have been disorganised—I have no doubt that a supra-pubic cystotomy should

have been performed as soon as the state of affairs in the bladder was realised—as much time was spent in trying to disimpact the impacted blades. One profits by such experiences. Seven perineal litholapaxies were performed by the central (Hyderabad) incision, but they call for no particular comment. The type of case in which the operation is called for is in children with calculi just too big for a lithotrite introduced through the urethra in the ordinary way.

The advice given by Surgeon-General Stevenson, I.M.S., “never to leave the track into the bladder without a probe or some guide into it,” is invaluable, and is really the crux of the operation.

Amputations.—Eighty in number. It is difficult to arouse much interest in this type of surgery, yet it looms large in the practice of this country, owing to the absolute carelessness of the native in dealing with machinery. The proximity of a number of mills and a large railway station accounts for the majority of the casualties. Many patients are brought in with their hands crushed to pulp in sugar-cane presses, necessitating amputation through the forearm. Out of the 80 amputations for extremities there were 6 deaths. One or two of the cases merit a passing word.

There was one amputation through the hip-joint, in a case of railway smash when the entire limb was disorganised and crushed almost beyond recognition. The operation was performed immediately on admission—no flaps were obtainable owing to loss of skin extending above Poupart's ligament. Contrary to one's most sanguine expectations the patient recovered and nature fashioned most excellent flaps by granulations with subsequent epithelial overgrowth. Three amputations through the shoulder joint were performed, all recovered. In one, an old man, there was a fracture dislocation of the humerus of eight days' duration—on admission the limb was cold and no radial pulse could be detected. Excision of the displaced head was first performed in the hopes of relieving pressure on the axillary vessels, but it was of no avail—the limb became gangrenous necessitating a subsequent amputation.

Of the other two cases, both in small boys, one was the result of a railway smash. The other of an old compound fracture of the humerus with rapidly spreading gangrene.

Of the fatal cases one was for amputation through the thigh for a compound fracture of the femur in which a most virulent traumatic spreading gangrene had set in—the patient died of septicæmia 24 hours after operation. I believe the death was avoidable had I realised the intensely virulent nature of the infection earlier. A second case occurred in a similar manner from acute septicæmia, the result of a crushed foot in a railway accident. I am firmly convinced now that one must operate high above the seat of injury in these badly crushed limbs

as the vitality of the tissues for several inches above the crush seems to be too low for union. I have twice been obliged to reamputate higher up owing to making this mistake.

Another fatality was in an advanced diabetic whose thigh was amputated for moist spreading gangrene. The patient never fully recovered from the anæsthesia (chloroform) and died of diabetic coma. Two cases died of tetanus on the second day after operation, the infection having occurred 4 days previous to admission.

One case was of interest as necessitating a triple amputation, one leg, one forearm and a "Symes" of the other foot. Being short-handed for assistance, I was obliged to perform all three one after the other as quickly as possible. The patient recovered, a poor crippled being.

Laparotomies.—This much more interesting branch of surgery comes fourth in numerical order. The 73 cases comprise the following:—

Operation for Female Pelvic Tumours	...	28
Exploratory Operations	...	13
Intestinal Obstruction	...	15
General Septic Peritonitis	...	6
Perforation of Enteric Ulcer	...	3
Epiploxy	...	2
Tuberculous Peritonitis	...	2
Tuberculous disease of the Cæcum	...	1
Protruded Intestines	...	2
Appendicectomy	...	1

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To turn to details of some of the above.

Of the 28 cases for female pelvic tumours, fourteen were ovariectomies, seven multilocular cysts, four broad ligament cysts, three dermoids. There were no deaths in this series. The youngest patient was 12 years of age with a large dermoid. The oldest 60 years. In three cases there were extensive adhesion to surrounding organs necessitating a tedious and prolonged dissection. In every case an effort was made to remove the cyst entire without tapping—in one case only was a preliminary tapping performed for a very large cystic tumour extending up to midway between umbilicus and ensiform, but the incision was only 4 inches long owing to the ease in removing the tumour after evacuation of the contents.

Three of the cases proved to be malignant papillomatous cysts; one occurring in a girl aged 13 years, this one proved inoperable. Two of the dermoids had twisted pedicles with commencing necrosis of the wall of the cyst. One dermoid was of interest in that in addition to the usual pultaceous contents there were several loose teeth and an almost complete lower jaw with three teeth embedded in the wall of the cyst.

Extra-uterine Gestation.—Five operations were performed for rupture of an extra-uterine gestation sac—with 3 recoveries and 2 deaths—one death was due to intestinal paralysis, the bowels having being obstructed for 8 days prior to

operation—no cause could be ascertained for the other death, as *post-mortem* examination showed that everything in the pelvis was right—the woman had symptoms of secondary hæmorrhage, but the pelvis was dry and the pedicle firmly occluded. In one case an error in diagnosis was made, the condition being mistaken for impaction of a retroverted gravid uterus, although every effort was made to differentiate the two conditions.

Salpingectomy.—Four operations, all recovered.

Hystero-salpingectomy.—One operation for fibroids and tubal disease—recovery.

Supra-vaginal Hysterectomy.—Two operations for fibroids, both recovered.

Myomectomy.—One operation for large fibroid growing between layers of the left broad lig.—recovery.

Pelvic Hydatid.—This caused intestinal obstruction by pressure on the rectum—recovery.

Cæsarean Section.—One operation at the seven month.

The condition was interesting as the woman was admitted for intestinal obstruction—the abdomen was enormously distended and practically all the small intestines had to be extruded to find the site of obstruction, which appeared to be an internal hernia into the foramen of Winslow. The gut was incised to evacuate a large quantity of liquid fæces—and a saturated solution of Mag. Sulph. (ozs. 2) injected into the bowel. Owing to inability to replace the gravid uterus among the still rather distended intestines, Cæsarean Section was performed and twins (dead) were removed. The patient had four stools a few hours after the operation and made a complete recovery. I consider the injection of Mag. Sulph. to be a valuable agent in cases of extensive paralytic distension. Hypodermics of Eserine Sulphate gr. 1/100 were administered 4 hourly until danger from distension was over.

Intestinal Obstruction.—Fourteen operations.

This series forms melancholy reading as the mortality is enormous—such however is the experience of most surgeons out here and to a lesser extent in England. Most of the cases are admitted suffering from intense toxæmia with greatly distended abdomens. The cause of the obstruction can rarely be diagnosed before operation, and very often not even then owing to the extreme distension of the intestines and the serious condition of the patient prohibiting any prolonged measures.

Of the 14 cases there were 5 recoveries and 9 deaths.

Of the recoveries—one was a case of strangulation by internal band in a male aged 40 years. Another was due to multiple adhesions of tuberculous origin in a young woman.

The third was due to internal hernia.

The fourth was caused by pressure by an enlarged uterus in a woman aged 72 years.

The fifth was a case of intussusception in a girl aged 6 years. This was a very satisfactory case.

The history was of 7 days' duration, and the apex of the intussusception was easily felt per rectum. The child's general condition was extremely bad. Fortunately no adhesions were present, and the intussusception was reduced without much difficulty. The little patient made an uninterrupted recovery.

Of the 9 deaths—one was due to volvulus of the intestines in a male aged 20 years.

Two were caused by internal hernia with extreme distension. Another was probably due to embolism of the mesenteric vessels.

Many feet of intestines were studded with hæmorrhagic spots and becoming completely paralysed.

In three cases the cause could not be ascertained, the distended gut being opened and emptied.

In the last case almost the whole of the small intestines were gangrenous. No *post-mortem* was allowed, and hence the cause remained unknown.

General Septic Peritonitis.—Six cases, 2 recovered and 4 deaths. In only one case could the cause be ascertained. This patient, a female aged 30, recovered, although the prognosis seemed absolutely hopeless. On opening the abdomen the pelvis was found full of stinking pus, the right tube, ovary, and appendix were inextricably matted together forming a gangrenous mass; large patches of purulent lymph were scattered over the lower part of the abdomen and to the abdominal wall. My "chief," Lt.-Col. J. B. Smith, I.M.S., who gave me his valuable assistance and advice at several of the laparotomies, said "one might as well sew her up with a bootlace and send her back to bed at once." Certainly the horrible appearance of the patient's abdominal contents seemed to forbid any possible hopes of recovery—however the gangrenous mass was rapidly ligatured and removed—the pelvis swabbed out and free drainage by tubes and gauze provided for. The after-treatment consisted of "Fowler's position" with frequent rectal salines. The patient recovered completely, and her bowels acted naturally almost from the first day. The recovery was mainly due to the devoted and assiduous attention of the nursing staff. The tubes and gauze were not touched for 10 days; after that, the large wound was dressed daily and healed by granulation. I anticipate the woman will return some day with a large hernia. This case illustrates well how uncertain one's prognosis must be—cases die that seem to have a fair chance of recovery, and others, like the one just mentioned, recover when one would not give them a 1,000 to 1 chance. It has always been a mystery to me how that woman's bowels acted perfectly naturally, for everything in the abdominal cavity seemed to be glued and matted together in a hopeless mass.

Operation for Perforated Enteric Ulcer.—Three in number, one recovery, two deaths.

This formidable complication of enteric fever having occurred three times in my practice makes me think that enteric fever in natives is not the mild disease that some observers consider it to be. The first case occurred in a young man aged 20 years brought into hospital in an almost moribund condition—abdomen extremely distended. The clinical picture was that of acute general septic peritonitis. The abdomen was opened through the right rectus muscle and found to be full of pus and extravasated intestinal contents; it was swabbed out—a second opening made to left of middle line and two drainage tubes inserted. The prognosis seemed to be hopeless, but the patient rallied, passed through a moderately severe attack of enteric fever and ultimately made a complete recovery. Fowler's position—copious rectal salines and constant nursing pulled him through.

The second case occurred a few weeks after the above in a girl 10 years of age—who was known to be suffering from enteric fever and in whom the diagnosis of perforation was made. Operation about 12 hours after symptoms—a large irregular opening in the ileum was sutured and abdomen cleansed as rapidly as possible. The prognosis in this case seemed fairly good, but the patient seemed overwhelmed with toxæmia and died 30 hours after the operation.

The third case (operated upon by Major Hooton, I.M.S., during my absence) occurred in a boy 8 years old, whose condition was desperately bad at time of operation. A perforated ulcer was found and sutured—but the patient never rallied and died 4 hours after operation.

The remaining abdominal operations do not call for any particular comment.

The solitary appendicectomy was performed during the "quiescent" period.

The *Epiploplexies* were performed for ascites with jaundice. My limited experience of them is unsatisfactory—the technique laid down by Rutherford Morrison was carefully followed out, but about a week to ten days after operation the patients became deeply jaundiced and—comatose—the condition resembling one of acute cholæmia.

Operations for Hernia.—Forty-eight in number of which 12 were for strangulation.

Of the total number 45 were inguinal, 3 umbilical hernia. There was no operation for femoral hernia. All the strangulated cases recovered—a radical cure was performed in each case, as fortunately the condition of the strangulated intestine was such as to permit of the further procedure being taken. In no case was resection needed.

There was one death in the total series—this occurred in an infant 15 months old who was operated on for a large inguinal hernia—the operation was a simple one, but four hours afterwards the patient's temperature suddenly rose to 105.6°—convulsions rapidly ensued and the

infant died before any measures could be taken for relief of the symptoms. When I arrived to see the patient, he was moribund, and the only physical sign I could elicit was enormous distension of the stomach. I am at a loss to know what the cause of death was, unless it could have been a case of "acute dilatation of the stomach."

For the inguinal hernias Bassini's operation was performed in every case. It being a straightforward, simple and apparently successful operation I was not inclined to substitute any of the various other methods. The youngest patient was an infant eight months old. A few of the cases presented interesting features. In one a strangulated case—several coils of intestine, the appendix and entire cæcum were in the scrotum (right side)—some difficulty was experienced in reducing the large mass.

In another case a portion of the bladder wall was found in the sac.

A third case was particularly interesting owing to a rather serious complication.

A male aged 40 years was admitted at 2 A.M. for strangulated right inguinal hernia.

The sac was opened in the usual manner, and contents which were deeply congested reduced. The general condition being satisfactory. Bassini's radical method was proceeded with—on introducing one of the deep sutures through Poupart's ligament there was a copious gush of dark blood which "welled" up into the field of operation and was difficult to arrest. After several endeavours I managed to secure the bleeding vessel with two hæmostatic forceps deep down—as I was unable to place a ligature round the point, I closed the rest of the wound and left the forceps on. The skin incision was sutured except for one spot, where the forceps protruded, and were securely kept in place by bandages. Seventy-two hours later they were carefully removed and the aperture closed. No hæmorrhage took place, and the patient made an uneventful recovery. For some time I was puzzled to know what vessel I punctured at the time of the operation, the hæmorrhage was so free that I feared I might have punctured the common femoral vein, or possibly the deep epigastric vein—the bleeding was undoubtedly venous. Mr. Sohoni, the assistant demonstrator of anatomy, kindly made a careful dissection of the inguinal canal for me in a dissecting room subject and, I think, solved the question. The wounded vessel certainly was not the common femoral, nor the deep epigastric, for I was well to the inner side of both, but running along the free curved margin of Poupart's ligament is a vein passing outwards to open into the deep epigastric vein. I was previously unaware of the existence of this vessel, which in the particular instance I am referring to was of considerable size. I have little doubt that it was this tributary of the deep epigastric, possibly engorged by the congestion of the parts,

that I punctured. The accident was an untoward one, and occurring at 2 A.M. in the morning, with a rather defective over-head light and with very limited assistance, was not easy to deal with. The result would seem to show that the procedure adopted, though possibly rather unsurgical, was the best under the circumstances. In another strangulated case, a piece of omentum weighing $1\frac{1}{2}$ lbs. was gangrenous and had to be removed; no untoward symptoms resulted. This is just the type of case in which one may expect "fat-necrosis" to take place, with its alarming train of symptoms so well described by Sir W. Bennett in a clinical lecture published several years ago. One of the herniæ was complicated by an undescended testicle, distending the inguinal canal; the organ was removed.

Operations for Innocent Tumours.—Forty-nine in number. These form a nice, clean type of surgery, almost every variety of pathological growth being met with—the cases all did well, uniting by first intention.

Operations for Cataract.—Including needling for juvenile cataract. Forty-six in number. This small series calls for no comment. My experience in cataract work being very small, I have not felt justified in attempting Smith's intracapsular operation.

Operations for Liver Abscess.—Nineteen. The majority of these were advanced cases with large abscess cavities. There were 4 deaths and a fifth case removed from hospital, who must certainly have died outside. In nearly all the cases the usual operation of resecting a rib with evacuation and drainage of abscess cavity was performed. Two abscesses were opened below the costal arch through the right rectus muscle. Ipecacuanha was given in moderate doses during convalescence. One case was unusual in that the abscess pointed at the angle of the scapula behind and closely resembled an empyema—in fact, it was only by evacuation of liver abscess pus that the diagnosis became certain.

Amputation of the Breast.—For Carcinoma 15. All these cases were very advanced, a large fungating ulcerated growth on the skin being present in the majority of cases. It seems as if the native female invariably waits till the tumour has ulcerated through the skin—in some of the cases maggots were present and the whole breast was in a septic condition. In no branch of surgery, with the exception possibly of intestinal obstruction, do the words "too late" apply as strongly as to these breast cases. In one patient, the breast after removal weighed 16 lbs., it was of enormous size and sloughing in parts. It had to be supported by two assistants during the operation—all the above cases recovered.

Ligature of Main Arteries.—Two classical operations were performed for aneurysm of the popliteal artery—with completely satisfactory results in both.

In the first case the diagnosis of popliteal aneurysm was evident—and the artery was tied at the apex of Scarpa's triangle.

The second case was more complicated, as the patient had a soft, tender, pulsating swelling in the popliteal space, the skin being reddened and presenting all the signs of inflammation. The diagnosis lay between inflamed popliteal aneurysm and an abscess overlying the artery with transmitted pulsations. I confess I thought the latter diagnosis to be the correct one. Capt. Keyworth, I.M.S., very kindly operated, as I was *hors-de-combat* with a septic finger. The swelling was first explored with a needle and syringe and pure blood withdrawn—it was obvious that it was a case of inflamed and leaking aneurysm (the swelling had notably increased in size during the three days preceding the operation), the main vessel was then tied at the apex of Scarpa's triangle, and the pulsation in the swelling below immediately ceased—the patient made a speedy recovery from his dangerous condition. Seen several months later there was no recurrence of pulsation and only a firm "thickening" was noticeable in the popliteal space.

Supra-pubic Prostatectomy.—Two cases operated upon and both successful as far as immediate results, but the first case died 8 weeks after operation with symptoms of uræmia. *Post-mortem*—the bladder was small and walls greatly hypertrophied—ureters dilated and both kidneys quite disorganised. The second case died on the 27th day with typical symptoms of renal inadequacy. I hope in future to get cases earlier in the course of the disease. Both the above cases had suffered from acute retention of urine—the bladder being full of foul smelling septic urine.

Supra-pubic Cystotomy.—For calculus 6 cases; 4 recoveries, 2 deaths. The 4 recoveries were those not suitable for litholapaxy. The 2 deaths occurred in cases in whom litholapaxy had been attempted (as mentioned previously). The main difficulty in this operation is the after treatment. I intend to try Colt's supra-pubic apparatus by which means the patient is kept drier and more comfortable. In one case, in a boy 8 years old, a perfect specimen of oxalate calculus, completely filling the bladder, was removed.

Trephining Skull.—For compound depressed fractures. Three cases, all recovered. One for a case of tempero-sphenoidal and cerebellar abscess following chronic otitis media—the former abscess was opened, the latter was discovered, only after death.

Wireing Patella.—Two cases, one for simple fractures, the other for compound comminuted fracture with the knee joint open. This case necessitated continuous irrigation for several days but eventually recovered; the silver wire was removed 8 months later as it worked its way through the skin.

Excision of the Upper Jaw.—Three cases: 2 recoveries, one death, all advanced cases with growth ulcerating through palate into the mouth. In all, a preliminary laryngotomy was performed. This step greatly simplifies the main operation as the pharynx can be plugged and no blood finds its way down into the air passages. In one of the cases, a female, the cosmetic result was excellent. The fatal case died one hour after operation, presumably of shock.

Laminectomy.—One case in a boy aged 9 years who fractured his spine at the level of the 6th dorsal vertebra—the result of a wrestling bout. The operation was performed 3 weeks after the accident, the patient being admitted for complete paraplegia and with exaggerated knee jerks and well marked ankle clonus. As there was such a well marked deformity of the bony spine it was hoped that possibly some relief might be obtained by removal of pressure of the displaced bone. The spines and laminae of the 6th and 7th vertebrae were removed, but the cord appeared to be hopelessly crushed. The wound healed by first intention, but there was no perceptible improvement in the symptoms.

Neurectomy.—This solitary case is perhaps the most interesting of the series. The patient, a male, aged 30 years, admitted for intense occipital neuralgia. There was a history—several months previous—of a heavy bag of grain falling on the neck. It was evident, from the patient's appearance, that there had been a partial fracture dislocation of the highest part of the spine. The man could not rotate his head in the slightest, but his chief complaint was the intense neuralgia up the right side of his occipital region, the patient threatened to commit suicide owing to the unbearable nature of the pain. It seemed certain that the cause of the pain was pressure upon the occipital nerve, *i.e.*, the post primary division of the 2nd spinal nerve at its point of exit between the second and third vertebrae. The only description of the operation for resection of this nerve that I could find is in Jacobson's and Rowland's "*Operations of Surgery*," Vol. 1, page 739, where the authors quote from Bergmann's "*System of Practical Surgery*."

A full and lucid account of the steps of the operation is given in the former book together with an admirable illustration. With the book and a skeleton in front of me I performed the operation and traced the nerve without much difficulty to where it turns round the inferior oblique muscle where it was resected, about 1" being removed. The dissection is not an easy one, as the wound is a deep one and there are several important structures in the immediate neighbourhood. No drainage was employed. The extensive wound healed by first intention. The functional result was excellent as the patient was entirely relieved of the symptoms. No effort was made to reduce the dislocation as the parts were firmly fixed by adhesions.

To any one who meets with a similar case, I recommend the book mentioned above where the text and illustrations are of great assistance in the surgery of what Mr. Jacobson calls "this intricate region."

Space and the editor's indulgence forbid me mentioning any details of the other cases on the list. Enough has been said to show that the surgery of "the Deccan" is both varied and interesting.

A final word may be said with regard to (a) a comparison with surgery at home, (b) the results of Iodine sterilisation of the skin. In the first place what strikes one as the most marked contrast from English surgery is the total absence of any operation upon the biliary tract—not a single operation out of a total of 1,048 was performed for gall-stones. Surgeons at home have frequent occasions to operate for biliary affections. Why is it that the condition is so rare among the natives of India? Is it a question of diet, or habits, or climate or what? The elucidation of this curious fact would form an interesting research. Again the rarity of appendicitis is a striking feature. Does the native of India suffer from appendicitis? If so, how is it that he so rarely applies for surgical treatment. I am speaking solely from experience of one part of India, perhaps other surgeons out here may have a different tale to tell. On the other hand, "vesical calculi eyes" and "hydroceles" form a striking landmark in the surgery of this country as compared with their incidence in Europe. Why does the native of this country so frequently suffer from stone in the urinary bladder and so rarely from stone in the kidney or gall-bladder?

Regarding the question of Iodine sterilisation of the skin, I published in the *Indian Medical Gazette* of October 1910 a short note upon this subject. A further experience of this method confirmed my previous opinion. In those cases where stitch suppuration occurred, there was no reason to suspect the patient's skin as the offending part, as when suppuration occurred, it was in the deep sutures—silk or catgut.

Out of a total number of 274 clear cases in which Iodine was used and the final result known 254 gave a perfect result, *i.e.*, no trace of moisture. There were 16 cases of limited suppuration, *i.e.*, a localised abscess containing a few drops of pus. In 4 cases there was extensive suppuration, *i.e.*, the whole wound "broke down" and healing took place by the slow process of granulation. In conclusion I must thank those who have been associated with me in the surgical work of the past two years for their

untiring endeavours and unfailing assistance, more especially the sisters of my wards, nurse Goucher in charge of the operation theatre, Nurse Campbell for several months in charge of the female surgical ward, and Messrs. J. DeSouza and R. V. Mone who so efficiently gave chloroform for all the cases.

THE PRESENT POSITION OF THE PERMANGANATE TREATMENT OF SNAKE-BITE.

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In the October number of the *Indian Medical Gazette* a résumé appeared of the long awaited report of Surgeon-General Bannerman, I.M.S., on his experiments on the permanganate treatment of snake-bite. It is sincerely to be hoped that the publication of the full report will not be further delayed, as in such an important matter full details of the experiments are necessary to allow its weight, in relation to the very different conclusions arrived at by other workers, being estimated. For example, in the résumé it is stated that the experiments showed that "even four times the amount which serves to neutralise cobra venom in a test tube will not with certainty prevent fatal poisoning an animal which has received 10 minimal lethal doses, and that the same quantitative relations obtained when *daboia* venom was used." To those unacquainted with the details of the subject this may seem at first sight to be an argument of some importance against the likelihood of the permanganate method being of practical value, whereas it really affords the strongest evidence in its favour. Thus, in the case of the cobra, the full amount of venom obtainable from a fresh vigorous snake is just about ten lethal doses for a man. Yet by implication, four times its weight of permanganate did in some cases prevent fatal poisoning in animals by such a large dose of venom, although it is probable that this snake very rarely actually injects its full dose into the human subject, for reasons which will appear presently, while there is no practical difficulty or objection to applying very much larger quantities of permanganate than four times the weight of the venom, as the necrotic effect on the tissues, which was of course well known to previous workers, is nothing compared to the chance of saving a patient's life. In the case of the *daboia*, not much over one lethal dose for a man is ejected from freshly caught reptiles when allowed to strike, so that in

* [Appendicitis is far from unknown in natives of India, but compared with Europeans and Americans it is rare. We invite the opinions of Surgeons in India.—ED.]

Note.—The experiments in which the treatment was carried out immediately after the injection only have been omitted to simplify matters and as being of no practical value.