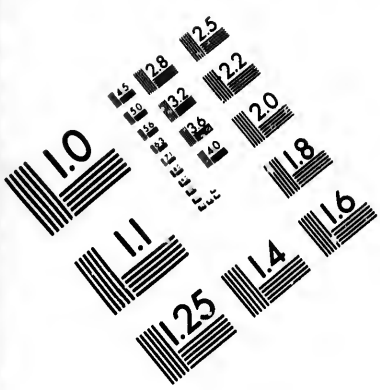

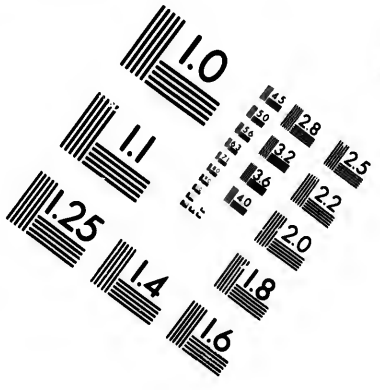

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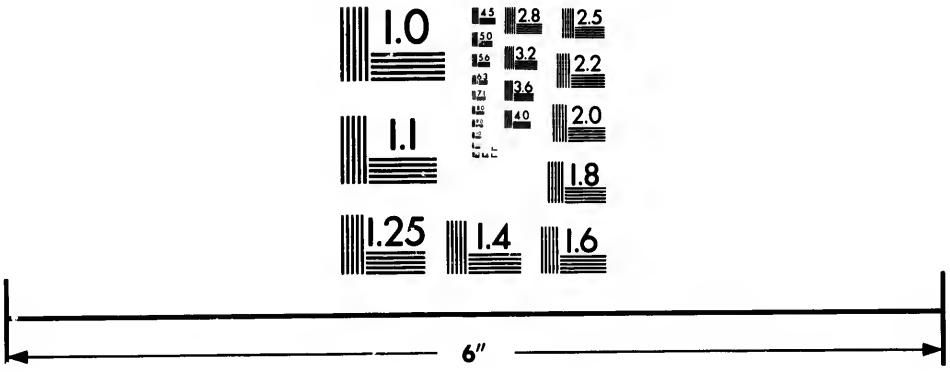

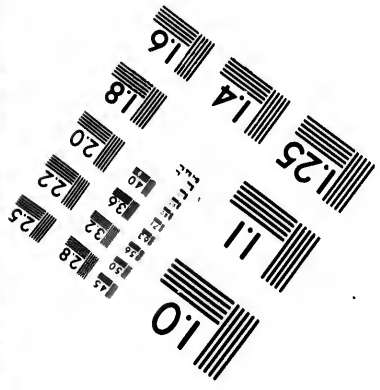

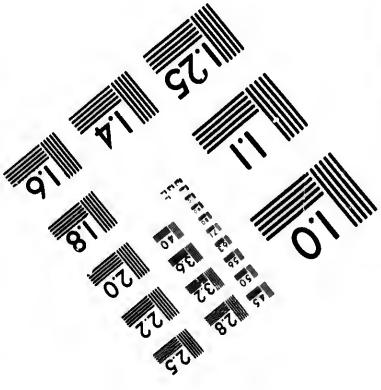

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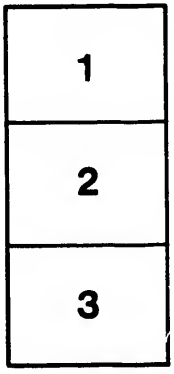

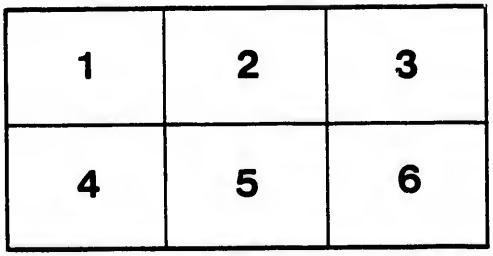

F. Roddick T.G.

FIFTEEN CASES OF TUMOUR OF BREAST.

SURGICAL RECORDS.

A CASE OF OCCIPITAL MENINGOCELE.

REMARKABLE CASE OF FAVUS.

LISTER'S ANTISEPTIC METHOD,

BY

T. G. RODDICK, M.D.,

Professor of Clinical Surgery, McGill University; Surgeon to the Hospital.

(From the Montreal General Hospital Reports, Vol. I., 1880.)

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FIFTEEN CASES OF TUMOUR OF BREAST

REMOVED ANTISEPTICALLY,

WITH REMARKS,

BY

T. G. RODDICK, M.D.,

Professor of Clinical Surgery, McGill University; Surgeon to the Hospital.

In all the following cases the most approved antiseptic precautions were taken :—

CASE I.—*Cancer of Right Breast—Excision.*

G. F., æt. 45, married; had five children, youngest 11 years; suckled all children with both breasts; no family history of cancer. Patient came under observation July 19th, 1878. About six months before, noticed a lump in her right breast which slowly increased, and during the past month has become rapidly larger and more painful. Axillary glands not affected; does not look cachectic.

July 20th.—Ether given and whole breast removed by the ordinary elliptical incisions.

August 1st.—Antiseptic dressings discontinued, as the wound has healed throughout by first intention, and without a bad symptom. The patient leaves Hospital for her sister's house, and thence to the country in a few days.

Dr. Osler reports that the tumour is scirrhus in character.

December 29th, 1879.—I have heard from the patient to-day, and she reports that there is no evidence of a recurrence, and that she never has enjoyed better health. Sixteen months have now elapsed since the operation.

CASES II. AND III.—*Cancer of Left Breast—Return in the other Breast—Excision of both.* [1]

Christina McC., æt. 40, unmarried, admitted October 19th, 1878. Mother died at 80, having during the last few years of her life a tumour of the breast, thought to be cancerous; four sisters living and well. Had a blow on the breast four years ago from the horn of a cow she was milking, but noticed nothing peculiar until July of last year, when the breast became decidedly enlarged. She consulted a cancer quack, who applied the usual plaster, which only increased the mischief. She is a well-built, well-nourished woman, and looks very unlike a cancerous subject. Both breasts stand out firmly, being largely supplied with that condensed adipose tissue occasionally noticed in the unmarried. The left is involved in a tumour, but there is no retraction of the nipple, and no adhesion of the skin to the underlying tissue. The gland does not move readily over the deep parts. Axillary glands not enlarged. Occasional darting pains.

October 24th.—Ether administered. Breast excised by ordinary elliptical incisions. Tumour found firmly adherent to pectoral muscle, a large portion of which was removed. Edges of wound brought together with catgut sutures; drainage tubes introduced at either angle, and the whole dressed with antiseptic gauze.

25th.—Temperature, 100°; doing well; very little pain; dressings changed.

29th.—Temperature normal since yesterday. On remo-

1 Reported by Mr. G. H. Groves.

ving the dressings to-day the wound is found to have united throughout by first intention; nearly all the sutures have come away on the sponge.

November 5th.—Discharged; wound firmly united throughout.

On microscopical examination the tumour showed well-marked scirrhus characters.

On the 8th February following, or about three months after her discharge from hospital, I was requested to see this patient by my friend, Dr. Rodger, of Point St. Charles, under whose care she then was. I found her very much depressed in spirits and complaining of pain in the remaining breast. We found decided enlargement of the gland, but, owing to the presence of œdema and other inflammatory signs, we inclined to the belief that there might be deep-seated suppuration going on, and ordered hot fomentations. The patient, however, insisted that her sensations were of the same character as those experienced in the breast which had been removed.

She did not improve, but the pain and enlargement increased, so that on the 24th February (assisted by Drs. Rodger, Gardner and Alloway), at the earnest solicitation of the patient, I excised the right breast antiseptically. Here, as on the other side, no enlarged axillary glands were discovered.

She progressed most favourably, and Dr. Rodger, who saw her twice a day, says that the temperature never rose higher than 99·3°. Four dressings only of the antiseptic were applied, and I made my last visit March 7th, the entire wound being on that day firmly closed.

The general condition of the patient, however, did not improve. She soon began to complain of great pain in the back and region of the liver, became deeply jaundiced, and died in about six weeks after the last operation. Unfortunately no autopsy was allowed. There was, however, no return of the disease in either cicatrix.

CASE IV.—*Cancer of Right Breast—Glands in Axilla slightly involved.* [1]

Margaret McG., æt. 50; married; mother of seven children, all of whom she suckled at both breasts; was admitted January 18th, 1879, complaining of a tumour the size of an egg in the right breast, which she had noticed for the first time about three months before. The lump is hard and painful at times, but is not adherent to skin or to the underlying tissues; some retraction of the nipple. Gives a family history of cancer, her mother and sister both having suffered.

January 19th.—Patient anæsthetized and breast removed, including the nipple. Two or three suspicious glands in the axilla, felt through the external angle of the wound, were removed by means of the handle of the knife and the finger.

25th.—Breast dressed for the third time; discharge absolutely odourless; union has taken place all along the line of incision; no pain; temperature, 98°.

29th.—All dressings removed; no sign of putrefaction; union firm and complete; drainage tubes removed; a pledget of dry boracic lint applied. Is to leave Hospital on the 31st.

On the day following the operation the temperature was 99·2°, but never after did it go above normal.

This patient enjoyed excellent health for two months after the operation, when the disease began to reappear in the glands of the axilla, and extended into the cicatrix and subclavicular glands, causing death on the 18th November, 1879, or a little over ten months after the operation.

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1 Reported by Mr. Stuart McNee.

CASE V.—*Cancer of Left Breast—Excision.*

S. W., æt. 56; well nourished; came under observation February 5th, 1879. She gave a history of being married, the mother of five children—the youngest being fifteen years of age; she had nursed all her children with both breasts without distinction, and never suffered from any serious inflammation or abscess of the breast. Some four years ago she received a blow on the left breast, which caused her pain and uneasiness for days. Within a few months she noticed a lump below her nipple about the size of a marble. This grew slowly, until at the time she sought advice it had reached the dimensions of about 2×3 inches, and formed a hard nodular mass involving the skin slightly, but freely movable over the chest wall; nipple retracted; a suspicious gland in the axilla.

February 6th.—Breast removed by the ordinary incisions directed towards the axilla; hæmorrhage more than usually profuse.

10*th.*—Everything progressing favourably; highest temperature, 100·6° on the second day; temperature 99° to-day; wound looking well; slight serous discharge which is perfectly "sweet."

17*th.*—Union complete; all dressings removed; is to go to her home in a couple of days.

March 12*th.*—The patient being unable to complete arrangements for a comfortable home outside, was given permission to remain a few days longer than was originally intended. Consequently, in assisting the nurse about the ward, she doubtless disturbed the newly-healed parts and an abscess formed near the external angle of the wound, from the effects of which she has only now fully recovered, and is to-day discharged.

December 8*th*, 1879.—The patient was seen to-day.

She is in perfect health, while the cicatrix looks strong, and the axilla is free.

CASES VI. AND VII.—*Scirrhus of Left Breast—Excision—Return in Cicatrix—Operation repeated.*

Ann O'R., æt. 61, widow, is the mother of nine children; used both breasts indiscriminately when nursing, although she thinks the left nipple was always more retracted than the right. Admitted March 19th, 1879. Two years ago she received a severe blow on the left breast, followed in about five months by a perceptible nodule. When she presented herself to me this had reached the size of a hen's egg, being situated to the right of the nipple; lancinating pain; nipple much retracted; two or three enlarged glands in axilla. No hereditary history of malignant disease.

March 22nd.—Operation performed in the usual way; three suspicious glands removed from axilla with the fingers.

23rd.—Temperature, 101°; pulse, 84; has suffered much pain from pressure of dressing, which was with difficulty applied, owing to the short and very stout body of the patient; drainage tube of dependent opening found filled with clot and not doing its work satisfactorily, thus accounting in great measure for the pain; wound looks healthy; no swelling; no redness.

27th.—Temperature, which had fallen to 99°, again ran up to 101°, but it was found that the bowels had not moved for nearly a week, and the patient was suffering in consequence. Wound looks remarkably well.

April 2nd.—Temperature normal; fourth dressing removed; wound entirely healed with the exception of dependent opening, where it is thought advisable still to leave drainage tube; slight sero-purulent discharge, which is absolutely odourless.

15th.—Discharged cured.

On the 20th of August following, this patient, at my request, presented herself at my house. She was not aware that anything special was going wrong with her breast, as she had suffered little, if any, pain or inconvenience since the operation. I found, however, some half-dozen hard nodular tumours, varying in size from a pea to a marble, ranged along the line of the cicatrix. No enlarged glands could be discovered in the axilla or elsewhere. Her health was fair.

I sent her into hospital, and on the following day (August 21st), with antiseptic precautions, removed the cicatrix by most extensive and very deep incisions. The wound, which extended beyond the middle line and far into the axilla, measured, as it lay gaping, ten inches in one direction and six in the other. All the great pectoral muscle which was exposed was removed, and the cartilage of the ribs and border of the sternum well scraped at points where any indications existed of the near presence of disease. A gland in the axilla, which presented itself at the angle of the incision, but which was not apparently diseased, was removed. The edges of the wound were brought almost into apposition with the aid of a combined hair-lip and button suture.

She progressed most satisfactorily. The highest temperature reached was 100° on the second day. The patient was kept for the first three days in a half-sitting posture, so as to relieve tension. The antiseptic dressings were discontinued on the tenth day, as, notwithstanding the enormous gap which originally existed and the great tension, primary union had already occurred in many places along the line of incision, but it was thought that the intermediate spaces could be made to cicatrize more rapidly under a less irritating application than carbolic lotion.

The patient was discharged September 12th, on the twenty-second day after this very severe operation. All

the granulating spots were covered with the exception of one about the size of a cent piece, situated near the centre of the wound.

December 1*st*.—Seen at her house to-day; is quite well, and there is no appearance of a recurrence anywhere.

CASE VIII.—*Multiple Fibroma of Left Breast—Fibrous Nodule in Right Breast.*

M. Mc., æt. 28, unmarried; was admitted as a private patient, February 6th, 1879. She sought advice some months previous for neuralgic pains in the chest, but concealed the fact that there was any mischief in the breasts until a short time before admission. Both breasts are small. The left is found to be the seat of some five or six nodular tumours, varying in size from a marble to a walnut. The gland is very small. There is no retraction of the nipple, and no attachments have been made either with the skin or deep tissues. The glands in the axilla are not enlarged. Attached also to the left border of the right mammary gland is a firm nodule of apparently the same character, and about the shape and dimensions of a chestnut. The patient is thin, but healthy looking. Ether was administered, and the entire left breast removed through a single incision extending below the nipple, as it was thought that the latter might with safety be retained. By a vertical incision directly over the nodule in the right breast, that was also removed, being with difficulty dissected away from the gland.

Five antiseptic dressings only were applied, and the patient drove to her home on the tenth day. The highest temperature was 99·5°. The nipple died, probably from want of its accustomed blood supply, hence, when removed with a little circle of dead tissue about it, there was left a spot a little larger than a cent piece, which rapidly granulated. Otherwise both wounds healed by first intention.

The patient has been in perfect health ever since, and has not suffered from the neuralgic pains which before existed. There was no indication of return in the right breast.

The tumours were found to be very firm and hard to the feel, and on section showed that peculiar "regular layering" so characteristic of the firm fibromata.

CASES IX. AND X.—*Scirrhus of Left Breast; Excision—Return in Axilla; Removal.*

J. A., æt. 57, married; had four children, all of whom she suckled with both breasts; thinks she once had inflammation in left breast when nursing one of her children. Noticed a lump in the left breast for the past two years, but this did not increase much in size or cause pain till during the past six months. Now there is a tumour involving the left breast as large as a goose's egg, and firmly attached to the skin, but movable on the underlying tissues. Nipple is much retracted, deeply buried in the mass; two or three slightly enlarged glands in axilla. The patient is a stout, well-nourished woman, and has no appearance of cachexia.

May 10th, 1878.—Breast and glands excised. incisions going wide of the disease; tension of flaps considerable, but catgut sutures only employed; considerable hæmorrhage.

Recovery uninterrupted. Left hospital May 28th, eighteen days from date of operation.

September 27th, 1879.—J. A. again seeks advice. She states that for the past four or five months she has noticed a lump growing in the left armpit, and which has latterly become painful. On examination a tumour is found about 3×3 inches, occupying the side of the chest and encroaching on the axilla. This is firm, painful when roughly handled, adherent slightly to the skin, but free

below. Above this, in the axilla proper, are to be felt a couple of enlarged glands. The patient's condition generally is fully as good as at the time of the previous operation.

Assisted by my friend, Dr. Fenwick (to whom I am indebted for much valuable assistance in connection with many of the cases comprised in this series), I encircled the mass by two incisions, extending from the axilla downwards and forwards, and including the outer third of the original cicatrix. The axillary space was almost cleared of its contents, the vein and artery being both laid bare. There was considerable hæmorrhage.

October 7th.—Left the Hospital for a friend's house, the wound having united perfectly by first intention and with neither marked rise in temperature nor a single unfavourable symptom.

Case xi.—*Sarcoma of Right Breast—Excision.*

A. B., æt. 25, spinster, had noticed a growth in the right breast some two years before, but conccaled its presence until it became so prominent that it could no longer be hidden. During the two months previous to operation it grew with marvellous rapidity, so much so that it was looked upon as rapidly growing encephaloid cancer. It had now attained the size of the clenched adult fist. The patient was thin but wiry, and not cachectic. There had been entire absence of pain, and the nipple was not markedly retracted. The mass had a semi-solid, pseudo-fluctuating feel, and appeared in places ready to burst through the skin. The glands in the axilla were not enlarged. There was no distinct history of injury.

April 12th, 1879.—The entire mass was removed under ether, Drs. Craik and Burland kindly assisting. The wound remaining was necessarily extensive. Hæmorrhage

was rather troublesome, so that some twelve or fifteen vessels had to be secured, either by unlimited torsion or ligature with fine catgut.

On section through the tumour, it has a greyish-white, fleshy look, in spots blood-stained. In the centre it is soft, at the lateral parts firmer. On examination, Dr. Osler found it to be made up of elongated spindle cells, closely packed together, with little or no intercellular tissue.

20*th*.—Fourth dressing removed to-day; wound perfectly united; highest temperature reached was 99·6° on the evening of the second day; drainage tubes removed; this will be the last antiseptic dressing.

23*rd*.—Dressings removed and a layer of cotton wool substituted. The patient has obtained permission, weather permitting, to take a short drive to-morrow. She has never since had any symptom referable to the part.

Case xii.—*Cancer of Left Breast—Excision.*

C. D., æt. 28; married ten years; no children; no miscarriages. Is a fair-haired, fresh, healthy-looking woman, tall, but spare, and perfectly free from cachexia. Is in fact the last person in whom malignant disease would be suspected. Remembers having had two or three severe blows on that breast, but felt nothing wrong until the spring of 1878, and consulted no one until June, 1879, when she saw Dr. G. W. Campbell, who diagnosed scirrhus and advised removal. There was a hard nodule about the size of a walnut to the outer and lower side of the nipple. There was some retraction of the nipple; glands in axilla not enlarged, as far as could be made out; skin slightly adherent.

June 4*th*.—At the request of Dr. Campbell, I excised the breast antiseptically. There was nothing unusual to be noticed in connection with the operation.

5th.—Temperature, 100°; pulse, 100; has been troubled with retention of urine, due doubtless, in great measure, to a draught of morphia which was administered during the night. The wound looks exceedingly well; antiseptic dressing reapplied.

10th.—Temperature normal; wound healing by first intention; sutures have been all brushed away to-day with the sponge, bladder required to be emptied with the catheter at times for three days after operation, but is now doing its work well; antiseptic dressing applied for the last time.

14th.—Dressings removed, and boracic lint applied instead; outer drainage tube will be retained for a day or two longer. The patient will sit up to-morrow.

CASE XIII.—*Cancer of Right Breast—Excision.*

Madame C., æt. 57, the mother of several children, presented herself October 23rd, 1879, suffering from a tumour of the right breast. She had noticed a nodule for nearly two years, but of late it had grown rapidly until now it is as large as a goose's egg; hard; skin slightly adherent; nipple much retracted; lancinating pain; perceptible enlargement of one or two axillary glands.

October 24th.—Ether given and whole breast excised; three suspicious glands removed from axilla.

November 4th.—Dressing all removed; union complete; highest temperature throughout, 99·8°; left for her home to-day in the Eastern Townships.

CASE XIV.—*Cancer of Left Breast—Excision.*[1]

Ellen K., æt. 45, presented herself at the surgical clinic early in October, 1879, having been for some time an out-

1 Reported by Mr. E. H. Smith.

patient under the care of my friend, Dr. Molson. She then complained of an enlargement, with some pain, in the left breast, but being pregnant, in the fourth month, was advised to have nothing done, but to report herself in one month. It appears, however, that on the following day she miscarried.

November 7th, 1879.—Is admitted to the Hospital to-day, and gives the following account: Has a good family history; has always been healthy, and menstruated regularly when not pregnant; is the mother of thirteen children, the eldest being twenty-one, the youngest two years. In April last, while nursing her thirteenth child (for they have all been suckled with both breasts indiscriminately), she noticed a small lump about the size of a marble in the left breast, an inch external to the nipple. This has increased in size until it is now as large as an egg. Of late, pains of a darting character have been felt to run through the affected breast. The skin is firmly attached to the tumour, so that a distinct dimple is noticeable at one point The nipple is not markedly contracted.

11*th*.—Ether was administered, and the breast removed antiseptically.

12*th*.—The temperature last evening went up to 100°, but this morning is 98°. The dressing was changed to-day. On removing the drainage tube at the sternal end of the wound a slight hæmorrhage ensued, which pressure at once arrested. The wound looks unusually healthy, and the edges appear to be already united. The patient feels remarkably well, and is in good spirits.

14*th*.—Wound dressed last evening; no hæmorrhage this time; temperature has continued normal.

15*th*.—Breast was dressed to-day; looks remarkably well; firm union has already taken place; very slight discharge, which is thoroughly antiseptic.

19*th*.—All dressings removed to-day; perfect union; no discharge; drainage tubes removed; two heavy

sutures, which had not become absorbed, were cut away. The patient is to be discharged in a couple of days. It is now nine days since the operation.

CASE XV.—*Large Adenoma of Breast—Excision.*

M. O'N, æt. 28; unmarried; healthy; gave a history of a growth having existed in the breast for the previous three years, but which retained the size of a hen's egg until a year since, when it took a fresh start, and at the time of admission (Dec. 19th, 1878,) was as large as a child's head. It was painless, not adherent to the skin or the underlying parts, and the nipple was scarcely retracted; glands in axilla not enlarged; tumour evidently adenoid.

December 20th.—Removed antiseptically, leaving a large gap which was with difficulty closed.

30th—Dressings removed not to be replaced, firm union having taken place. The temperature throughout has been almost normal. The patient is to go home to-morrow.

Remarks.—Such is a faithful record of fifteen cases of excision of the breast and of recurrent growths. There is no apology needed for placing the latter in such a series, as very often the removal of a recurrent tumour is a more formidable proceeding than the original operation, and so it happened here. Thus, the operations for secondary disease described under cases VII. and X. will be recognized as the most formidable of the series, the axillary artery and vein being in one instance laid bare.

In none of the cases was there even an unfavorable symptom, the best proof of which being that the thermometer never registered a higher temperature than 101°. The patients, in consequence, were perfectly comfortable throughout, and a few could take substantial food almost from the beginning. The average number of days under surgical treatment of the entire series was only 14·5—the shortest time being nine days, the longest thirty-four

days. The average number of days in hospital of ten of the cases after operation was the unprecedented number of 10·5. Can any other method of treatment, or mode of dressing, show such results? I have failed to find it, and hence, on behalf of Lister, take the ground that his system stands alone as one by the adoption of which in excision of the breast you can confidently expect uniformly good results. I challenge any one who is not a pure antiseptic Surgeon to produce a record of fifteen consecutive operations, such as I have described, where the highest temperature reached in any case was 101°, where the amount of constitutional disturbance was so trifling, and where the average number of days under treatment was 14·5; and this number would have been reduced to thirteen but for the protracted abscess which formed in case V.

Of the fourteen cases of original breast tumour reported, eleven were cancerous, and of these seven occupied the left breast. Although barely sixteen months have elapsed since the first operation for malignant growth was performed, two of the patients are dead—one from recurrence in the liver, the other from extensive disease in the glands and probably some internal organ. In two of the cases secondary growths have occurred, and have been removed. In one case only has the disease recurred in the other breast. Of the three remaining cases, classified as non-malignant, one only (No. 11) is ever likely to give further trouble. Being a rapidly growing sarcoma it may recur. Before the days of minute microscopic research, this tumour, which had been diagnosed as encephaloid by two surgeons, would have been regarded as the least favourable of the series, and might, years hence, have been cited as a case of "soft cancer" which had not recurred. Whereas, we know now that it belongs to a class of tumours holding intermediate ground, and that even with recurrence a favourable prognosis may be entertained.

As to the great moot question of prognosis in cancerous disease of the breast, the series of cases under consideration certainly cannot be said to strengthen the argument of those who pretend to "cure" cancer by the operation of excision. It does not, however, detract in any way from its position as a "palliative procedure," for although we have already, in the short space of sixteen months, followed two of the cases "to the death," we cannot foretell how many years of comparative comfort and freedom from disease we may have brought to the remaining nine. With Mr. Holmes I am in perfect accord on this subject when he says, that "the operation frees the patient, for a time, from the oppression of a disease which is known to be gradually advancing to a fatal issue; it renders the interval (allowing that the cancer recurs) one of complete health for the greater part of the time, instead of being a period of pain and anxiety; it gives the patient a chance, however slender, of immunity from recurrence, and in many cases the cancer recurring in an internal organ, such as the liver, terminates life in a less painful manner than by the spread and ulceration of an external tumour."

SURGICAL RECORDS

BY

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These have been taken indiscriminately from among the reports furnished, from time to time, during the past two years, by the clinical clerks who have done duty in my wards. I have not followed any arrangement or method of classification. It is well to mention, however, that many of the most interesting cases that have come under observation during that time, have already been published in the *Canada Medical and Surgical Journal.* Thus, some half-dozen of the most brilliant antipseptic triumphs are related in a paper on "Listerism," which I read before the Canadian Medical Association in September, 1878, and which is to be found in the November number of the journal just referred to.

I have to thank my friend, Dr. Imrie, Assistant House Surgeon of the Hospital, for the valuable assistance he has rendered me in the preparation of these reports:—

CASE I.—*Caries of the Altas and Axis—Retro-pharyngeal Abscess—A case illustrating the Necessity for Caution in the Application of the Plaster Jacket—Remarks on the Antiseptic Treatment of Retro-pharyngeal Abscess.*[1]

E.G., æt. 30, slightly built, of average height, mechanic,

1 Report furnished by Messrs. Lawford and Butler.

was admitted December 26th, 1878. There is an indistinct family history of phthisis; no history of cancer; no personal history of syphilis

A stiffness of the neck was first noticed two months ago, which has been gradually increasing; suffers from pain running from the shoulders to the sides of the head; keeps his head fixed; moves slowly and with great caution, and when lying down is noticed to hold the head between his hands and place it on the pillow with great care; keeps his face a little turned towards the left, to which side he can move the head slightly, but cannot pass the median line towards the right side; has considerable power of flexion and extension; the second and third cervical vertebræ are noticed to be prominent and tender on pressure; sterno-mastoid muscles prominent and firm; tenderness on pressure on either side of trachea in front. For the past three weeks the patient has experienced some difficulty in opening his mouth, and speaks as though there was some obstruction in the pharynx; on examintion, with the finger in the mouth, there is marked bulging of the posterior wall of pharynx with indistinct fluctuation. On the back are three or four unhealthy looking strumous ulcers; glands in axillæ enlarged; no enlargement of glands of back of neck or groins. Heart and lungs normal; urine contains neither albumen nor sugar.

January 4*th*, 1879.—Condition since admission has rather improved under good diet and tonics; fluctuation in pharynx a little more marked, especially to the right of middle line; appetite better; sleeps well, but snores very loudly at times; bowels regular.

10*th*.—Condition unchanged.

18*th*.—Has not been so well for the past few days; some difficulty in swallowing now; jaws so far closed that it is almost impossible to insinuate the finger between them; fluctuation in back of pharynx very marked on right side; voice very thick and husky; temperature

ranges from 99° to 101°; pulse 90; neuralgic pains in head severe.

22*nd*.—To-day Dr. Roddick determined on opening the retro-pharyngeal abscess antiseptically, in order to do which it would be necessary to give exit to the pus elsewhere than through the mouth, as is the ordinary practice. He felt sure that the pus could be reached by careful dissection behind the sterno-mastoid on the right side. In order to steady the head meantime and support the diseased vertebræ, he proceeded to apply a plaster of Paris apparatus, extending from the shoulders to the sides and back of the head. During the time required for this application the patient occupied the sitting posture, and chose for himself that position of the head and neck which appeared most comfortable. Within ten minutes from the time the last bandage was applied, the house surgeon, Dr. Burland, who remained in charge till the plaster should have set, noticed that the patient suddenly changed colour, becoming deeply livid, finger-nails and lips blue, and that he could not articulate. Respiration ceased, the pulse became slow and weak and very soon stopped. Drs. Roddick and Ross, who were in adjoining wards, were summoned, and found the man to all appearances asphyxiated and dead. The bandages were rapidly removed and artificial respiration begun. At this time no heart sounds were audible and respiration had ceased. The tongue was protruding from the mouth livid and swollen. The eyelids were partly open and the eyeballs stood out from their sockets. Artificial respiration was carried on faithfully and most vigorously for about fifteen minutes, when the natural act showed signs of return, and in twenty minutes artificial means could be discontinued. The patient became gradually conscious. The breathing was entirely abdominal. There was at first complete loss of sensation and motion from the head down, but after the lapse of half an hour he could move the toes of the left foot, but very slightly.

6 P.M.—Can move the left arm a little; right remains motionless; is gaining power in the left leg, and the right one can be simply stirred with considerable effort; full consciousness has returned; swallows well; speaks fairly; has sensation of general tingling.

7:30 P.M.—Power over limbs increasing; can now move the right arm as well as the left; pulse, 84; resp., 24.

Midnight.—Is sleeping comfortably and breathing freely. In order to retain the head in one position and render it immovable, plaster has been poured round it as he lies, encasing it completely, while at the same time all pressure is avoided.

23*rd*.—Passed a fair night; temperature, 100°; pulse, 80 and full; his greatest trouble is a thick tenacious mucus which collects in the pharynx, and is with difficulty expectorated; has some control over the bladder and rectum; is cheerful, and swallows and breathes more freely than for some days past.

26*th*.—Sensation is now fully restored and motion is fair in all the limbs; temperature 99°; pulse 80. At the earnest request of the patient, but not without much hesitation on the part of the surgeon, he was allowed to be moved from the uncomfortable position which he had so long occupied to a water bed arranged in readiness. The operation of moving was done with the utmost care, notwithstanding which the patient was found again to have lost consciousness and to be as completely paralysed as before. There was very little lividity on this occasion, and the heart and respiration were but little disturbed. He recovered consciousness in a few moments, but the paralysis remained. In three hours he could move the right leg slightly. At the expiration of five hours he could move the left toes and barely stir the left arm, the right arm remaining powerless. Sensation has been impaired throughout.

27*th*.—About daylight this morning began first to move

the right arm. Had a very good night; breathes and swallows freely; resp. 16; pulse, 80; temperature, 100°; complains of no pain; takes a fair amount of nourishment; has to be catheterized for the first time. Towards evening the temperature went up to 102°.

28*th*.—Has less power again in right arm, and numbness generally increased, due probably to some slight disturbance by the nurse, notwithstanding that the head is still encased in plaster. Has much difficulty in bringing up the mucus which collects in his throat. Has regained some power over bladder; temp., 101°; pulse, 112.

31*st*.—Still very little power over right arm, and in fact the most trifling movement of the body is followed invariably by more or less impairment of motion in all the extremities. Catheter has to be used occasionally; urine contains muco-purulent deposit; bowels moved with difficulty every third or fourth day. Tongue much coated in the centre and red at tip and edges; an aphthous ulcer on the side of tongue gives him trouble. Temperature, 100°; pulse, 110. The ulcers on the back are increasing in extent on account of the difficulty experienced in dressing them. Abscess in the pharynx gives no symptoms, having of late diminished in size.

February 4*th*.—The only unfavorable symptom lately has been diarrhœa, which is, however, yielding to kino; passes urine with little trouble; temperature last night reached 104°, but no chill; pulse ranges about 112; complains of cold feet; power in right arm not improving; pretty good motion in left arm and legs; tongue cleaner; sleeps well.

12*th*.—Temperature, 99°; pulse, 112, and weak; right arm about the same; tingling in soles of feet; pricking feeling in hands; intellect becomes hazy at times, and this is especially the case on awakening from sleep.

19*th*.—Temperature has been ranging between 99° and 101°; sensibility in limbs good, but motor power is not

improving; breathing becoming laboured at times; swallows well; lives mainly on liquid food; tongue at times dry; bowels inclined to be relaxed; urine passed with some difficulty once or twice in the twenty-four hours.

26*th*.—Condition unchanged.

March 10*th*.—Has been holding his own; temperature ranging between 99° and 102°; pulse rapid and weak; discharge from ulcers increasing and becoming very offensive; lies constantly on a pad of oakum; a bedsore has formed on the sacrum; power in left arm greater; right arm also improving, so that he can raise it to the chest; lower extremities remain *in statu quo*.

20*th*.—For the past ten days the patient has been in a most wretched condition, as bedsores are forming on every prominent point; and from the œdema about the right side of the neck the collection of pus, probably in considerable quantity, is feared, but no examination is possible. The other symptoms are unaltered.

23*th*.—While being moved in bed to-day, the patient again became paralyzed and suddenly expired.

Autopsy (*by Dr. Osler*).—Considerable emaciation. Bedsores on all prominent points on the back, and on the right side of the spine from the 7th cervical to the 5th dorsal there is a large superficial abscess, with rough, irregular walls. The deep cervical muscles on the right side—recti postici, obliquus inf. and complexius—are infiltrated with pus, which is mixed with lumps of cheesy matter. Anteriorly, the three recti muscles of the right side, together with the upper part of the longus colli, are also infiltrated with pus, and contain cheesy nodules. All the deep tissues, in fact, of the upper part of right side of neck are in this state. About 3 oz. of pus escaped from the incisions. The abscess points in the pharynx as a slight oval projection on a level with the top of epiglottis. It is separated from the tube of the pharynx by the thickness of the wall, and immediately beneath the epithelial lining there is a

small superficial collection of pus, apparently unconnected with the main abscess. Dissection of the cervical vertebræ revealed the following condition:—Both anterior and posterior occipito-atloid ligaments are thickened and bathed in pus, particularly on right side. The right condyle of occipital bone is completely devoid of cartilage, being rough on surface and edges. The left is very slightly affected. The atlas is extensively diseased; entire anterior arch is bare, posterior arch on right side in same condition. Upper articular surfaces denuded, most on right side. Atlo-axoid ligament on this side is destroyed, and caseous lumps are projecting at this point into the spinal canal. On looking at the cervical vertebræ from above, it is seen that the odontoid process of the axis is out of place, and encroaches on the posterior arch of the atlas, compressing the cord on the right side. It has great mobility, the transverse and check ligaments being completely gone, so that the process can be moved freely backwards and forwards. The occipto-axoid ligament is also destroyed. The tip of the odontoid process retains its cartilage, but in the rest of its extent it is bare and rough. The entire body of the axis is denuded on inner and outer surfaces, with the exception of a small part of the left arch. The right superior articular surface has lost its cartilage; on the left side a small portion of it remains.

The dura mater of the upper part of the cord is a little thickened. Pia and arachnoid look normal. The upper segment of cord, on a level with the odontoid process, is a little compressed, particularly on the right, and it is slightly softer, but the amount of coarse disease is not great.

Nothing of special note in other organs.

Remarks.—This case illustrates the great necessity for caution in the application of heavy dressings to the neck in extensive vertebral disease, and in fact to any part of

the spine where caries has made serious inroads. I was more than ordinarily careful here in allowing the patient to choose his position, as well as to avoid placing too great a weight on the head. No attempt at extension was made, my object being simply to support the head on a buttress of plaster of Paris built upwards from the shoulders. That the sudden asphyxia was due to displacement of the odontoid process and consequent squeezing of the cord there is, of course, not a shadow of a doubt; but whether this displacement was caused directly by the superincumbent weight, or by the irregular contraction of the "setting" plaster veering the head in one or other direction, I am unable to say.

In the casing of plaster I left an oval fenestra, two inches in length and one inch and a half in its greatest breadth, on the right side, opposite the upper portion of the posterior triangle of the neck. Following the practice as adopted in one case by my friend, Mr. Chiene, of the Royal Infirmary, Edinburgh, it was my intention to have made an incision, under the antiseptic spray, along the posterior border of the sterno-mastoid, and onwards between the splenius and levator anguli scapulæ to the anterior vertebral region, where doubtless I would have reached the pus contained in the retro-pharyngeal abscess referred to in the report. Through this opening the pus would have found ready exit, while, at the same time, it would have remained "sweet" under antiseptic dressings. How much more surgical is this method of treating abscess in this region to that usually recommended, namely, by incision through the mouth? When the latter procedure is adopted the pus is certain to become rapidly putrid from the admixture of air and food, and thus the process of decay already going on in the bones is hastened, while the blood of the individual is in hourly danger of contamination. Besides these objections to the ordinary method of incision, there is this important one

in the case of children, namely, that the sudden outpouring of such a large amount of pus as is sometimes contained in these abscesses, might cause alarming, if not fatal, asphyxia. The *external operation* is unattended with serious risk, there being no vessels of importance in the way, but in any case, after the division of the skin and superficial fasci[illegible]e director and handle of the scalpel only should be [illegible]d, with the finger in the mouth as an additional guide. To prevent the discharge from infiltrating the plaster and setting up putrefaction in the neighbourhood of the wound, a coating of paraffin should be placed for some distance around the edge of the fenestra.

CASE II.—*Cancer of Rectum—Removal of Four Inches of the Gut—Recovery.*[1]

S. C., æt. 24, married, well-nourished woman, medium height, was admitted May 16th, 1879. Family history good; no tubercle or cancer in own or husband's family; husband a very healthy man; no history of syphilis. Always enjoyed good health up to present illness; has been married four years; has had two children, both of whom are healthy; no miscarriages.

In September of last year she first experienced severe lancing pain in the rectum, which was greatly intensified on attempting to sit down, and while at stool. Four months after this she was enabled, by means of the finger introduced within the rectum, to feel a hard growth about the size of a small bean. She applied gall ointment, and obtained some relief for a time. About the end of March last, however, the mass could be felt protruding at the margin of the anus, having rapidly increased in size, and being irregular, hard, and knotted to the feel. The pain was now intense, especially when at stool, and has of late

1 Reported by Mr A. Henderson.

become so severe that she is forced to remain in the recumbent posture the greater part of the time.

On examining the part there is very little disease to be seen externally, but on introducing the finger into the rectum, a large, irregular, hard, and evidently ulcerated mass is felt extending to fully two inches from the margin of the anus, and involving three-fourths of the circumference of the bowel. It occupies mainly the posterior and left wall, and is very painful to the touch. A circumscribed portion, deeply imbedded and about the size of a marble, is thought to be an enlarged gland.

May 17*th*.—Excision of the lower end of the rectum being decided upon, ether was administered and the patient fixed in the lithotomy position, the bowels having been well cleared out with a purgative and enema.

The anus was surrounded by two elliptical incisions extending from the centre of the perineum to the point of the coccyx. The bowel was carefully isolated by dissection and the frequent use of the scissors and the finger, until about three and a half inches could be readily extruded. The mass being somewhat adherent to the posterior wall of the vagina, a small perforation was unavoidably made in that situation during the dissection. The hæmorrhage was very trifling and easily controlled. To remove the diseased portion, scissors only were employed. The healthy edge of bowel was attached to the margin of skin by a number of carbolized silk, with intermediate gut, sutures. Drainage tubes of the largest calibre were inserted into the extreme upper and lower angles of the wound and held in position by fine catgut sutures passed through the skin on either side. Through the drainage tubes was passed a stream of chloride of zinc solution of the strength of forty grains to the ounce. The part was then dressed with lint, soaked in carbolic oil, over which was placed a pad of oakum, the whole retained in position by the ordinary T bandage.

The nurse was instructed to remove the dressings every eight hours in order to irrigate the parts with the warm 1 to 40 carbolic solution, and at the same time to draw off the urine. One grain of opium was ordered to be given three times a day in order to keep the bowels sealed, and, when necessary to relieve pain, morphia hypodermically; iced beef-tea and brandy to be given at stated intervals.

May 19th.—Everything has been going on satisfactorily since the operation; highest temperature, 100·2°; pulse ranging from 112 to 120; wound looks very healthy drainage tubes doing good work; irrigation continued every eight hours.

23rd.—Temperature for past three nights over 102°, falling every morning to normal; very little pain; had a liquid stool last night and four to-day, which caused some pain: margin of wound healed in many places, so that some of the sutures have been removed; drainage tubes continue to be very useful; have been shortened to-day; for the increased temperature twenty grains of quinine have been taken each afternoon and the dose is to be repeated.

27th.—The patient is improving rapidly; part healing well; drainage tubes removed to-day; loose stools somewhat frequent and troublesome, but cause no serious discomfort; powders of chalk and opium ordered; morning temperature normal, evening temperature 100°; equal parts of carbolic lotion and red wash used for the wound.

June 15th.—Patient has continued to improve in every particular; temperature normal; pulse 80; appetite good; discharge from wound very slight; granulations healthy; she is allowed to sit up.

28th.—Left Hospital to-day; wound almost entirely healed; patient greatly improved in appearance and general health; has still little control over the bowel.

July 28th.—The patient was visited to-day at her house. She expresses herself as being perfectly well, and certainly

looks well. She is rapidly recovering control over the bowel.

The specimen examined microscopically was found to present all the characters of epithelioma.

Remarks.—The undoubted success which in the past few years has attended excision of the lower portion of the rectum for carcinoma, especially in the hands of Volkmann of Halle, Levis of Philadelphia, and Van Buren of New York, places this operation in the list of so-called justifiable surgical procedures. While the palliative measure, colotomy, has been frequently performed in this city and country, my esteemed colleague, Dr. Fenwick, was the first surgeon in Canada, as far as I can learn, who excised the rectum for cancer. His patient was an old lady of seventy, and the operation, which proved to be most successful, was performed August 6th, 1878, soon after Van Buren had published his cases. She is still in the enjoyment of good health, there being no evidence of recurrence. Volkmann's success has been marvellous, and is attributed by him mainly to the fact that he employs throughout the most approved Listerian precautions. Now, while there are few holding more decided views regarding the utility of the antiseptic method in the vast majority of surgical procedures, I am unable to see how it is possible to carry out all the details of that practice in an operation such as that under consideration. Volkmann, in his enthusiasm, certainly shoots beyond Lister himself, for the latter never pretended to keep wounds antiseptic when in such close proximity to the bowel and genito-urinary apparatus. It is sufficient, in such cases, to apply thoroughly to the cut surfaces a watery solution of chloride of zinc, of the strength of forty grains to the ounce. Employed in this way this salt has the remarkable property of rendering a wounded surface incapable of putrefaction for two or three days, that critical period during which septic absorption is so liable to

occur through the cut ends of veins and capillaries. In the operation of excision of the rectum, the solution can be applied either before the cut surfaces are brought together, by means of a piece of lint or absorbent cotton held in dressing forceps, or subsequently by injection through the drainage tubes. As an external dressing nothing can be made to adapt itself so closely to the cut surfaces, and at the same time cause less irritation, than numerous strips of lint saturated with carbolized oil of the strength of one to twenty, and which in the female can be better held in position by passing the ends of the longer strips into the vagina. Oakum makes an excellent pad, and at the same time it does antiseptic duty. The drainage tubes should be of the size known as Lister's No. 7, or about three-eighths of an inch in calibre, and should be secured to the edges of the flaps by silk or gut sutures, otherwise they are certain soon to become displaced. Through these irrigation with warm carbolized water can be readily carried on, and this should be practised at stated intervals, say about every eight hours for the first six days, and subsequently night and morning, or as often as the bowels are disturbed. I am disposed to think that to these two measures, *thorough drainage* and *frequent irrigation*, is to be attributed a large share of the success which has attended this operation. There is this to be remembered, however, regarding irrigation, namely, where there is a suspicion that the peritoneum has been opened, it should be used with great caution, and, perhaps, not at all for twenty-four hours after the operation.

CASE III.—*Pott's Curvature of Spine, following Injury—Treated by Sayre's Method.*

P. A., aged 21, a sparely-built Finlander, under medium height, entered Hospital July 5th, 1876, with an acute curvature of spine occupying last two dorsal and first two

lumbar vertebræ. There was a history of a blow on the middle of the back from a piece of timber, which knocked him so that he fell twenty feet into the hold of a vessel. This was in the early part of the winter of 1875; for several weeks he was unable to walk at all, and never since, perfectly erect. The projection of the spines observed on admission was not noticed by patient until after an overlift in June last, since which time he has worn an ordinary bandage tightly bound round the waist as a support, and to relieve the boring pain felt at seat of the injury. This was aggravated by walking, when it sometimes extended to iliac regions.

On admission the actual cautery was applied on either side of the spinal column with marked benefit, and the patient was kept in bed and at rest. This treatment was followed until 1st November, when he began to suffer much pain in the legs, which he attributed to lying on his back, and for it he was given morphia. On the 7th November it was found upon examination that patient was unable to walk, save with his body bent far forward and the hands holding upon the knees. Sayre's suspending apparatus was then applied, and a neatly fitting plaster of Paris bandage adapted to the lower half of the body. As soon as this had set, patient was able to walk actively, without pain and quite upright. After two months the bandage was removed and another fitted, and patient discharged wearing it, October 1st, feeling himself a "new" man.

CASE IV.—*Pott's Curvature, following Injury—Treated by Sayre's Method.*

J. D., æt. 9, a well-nourished lad, with strong tubercular history on his mother's side, came to Hospital Dec. 5th, 1878, complaining of pain about "small of back," particularly at night, when in bed. It appeared to follow

an accident which occurred to him nine months previously, at which time he fell heavily upon his back, which has since been weak and now shows a projection involving the three lower dorsal vertebræ. There is no difficulty experienced in maintaining the upright position in walking. On the 8th December a plaster jacket was applied, and in a week the patient was discharged wearing it with comfort.

CASE V.—*Torticollis—Division of Sterno-Mastoid.*

E. J., an unhealthy-looking child, æt. 9, was admitted January 21, 1878, with following history:—Was born with double talipes varus; cured at 4th month. Always sickly until 18th month, when she had a severe attack of bronchitis. Since then has been in better health, though she has had strumous disease of one eye and ear. Towards the close of the first year her head became drawn to left side. This has persisted, and now the left sterno-mastoid is firmly contracted, and head much deflected to left; left angle of mouth and left lower eyelid droop slightly.

January 23rd.—To-day the affected muscle was divided subcutaneously at clavicular attachment; a band was placed about the head, another round the waist, and the two joined by tapes which retained the head erect. Until February 6th, these were removed three times daily, and head moved passively from side to side. The head still inclining to left, the sternal fibres of the muscle were divided; a considerable hæmorrhage occurred, which was checked by compress. Stays were again applied for a week, after which time the head was held erect and child discharged.

CASE VI.—*Omental Hernia—Operation—Peritonitis—Death Eighteen Hours after Operation—Chronic Tubercular Peritonitis—Phthisis.*

T. S., æt. 36, a delicately built man, came to Hospital November 21st, 1877, with following history and symptoms:—No account of any phthisical, cancerous, or nervous disease in family. Has always been healthy. No history of syphilis. Married for seven years; two children—one living, healthy; the other died young. Has been a moderate drinker. Was a bookkeeper until five years ago; since then, owing to his having suddenly lost his sight, he has worked at telegraphy. Fifteen years ago he fell through a hole in the wharf at Point Lévis, sustaining a severe shock, and ten days after a swelling, like a bubo, appeared in right groin. It was reduced without much difficulty, and a truss applied, which he wore until three years ago, when he thought himself cured. Since then the swelling has reappeared from time to time, but was easily reduced. A month ago it gave him much pain and kept him in bed; he applied ice to the tumour, but was not able to reduce it, and came to Hospital. At present an oblong tumour with a tense feel occupies the right side of scrotum, above and in front of the testicle, which can be distinctly felt. The tumour does not yield to taxis. The patient has a haggard look; bowels regular; until last month they have been constipated; moved freely after a dose of castor oil. For six months has had a cough; worse in morning; never had hæmoptysis. Lungs appear healthy, save that a few moist râles, small in size, are heard at their bases; they disappear on coughing. Heart sounds normal. Hepatic and splenic dulness normal.

Patient was anæsthetized by chloroform on 24th November, and a vertical incision was made over tumour in scrotum, adhesions divided upon director, and a fatty and

fibrous mass exposed, 7·5 cm. long by 3·2 cm. in width and thickness. The pedicle was caught in clamp and divided; bleeding stopped by thermo-cautere. Pedicle fastened to edges of wound by cagut, and the wound closed by catgut sutures and dressed with strict antiseptic precautions. The patient did apparently well until morning, when he grew rapidly weaker, and died. At the autopsy, 16 hours after death, 35 oz. of amber-colored fluid in abdomen; omentum thick and attached below in scrotal incision by sutures. Walls of intestines red, relaxed and covered with flakes of lymph Many of the coils are closely adherent, and here and there dark spots corresponding with ulcers in the mucosa are seen. The opposed surfaces of intestine are rough and granular. Mesentery also rough and irregular, being beset with small tubucular nodules; the tissue about these being inflamed gave a peculiar shaggy appearance to the membrane. A similar condition existed on parietal peritoneum. In left pleural cavity 14 oz. serum found; flakes of lymph over base of left lung. Left parietal pleura thickened. Right pleura free. *Heart* healthy. *Lungs*—Left, at apex, presents two cavities size of walnuts, with firm walls; scattered through the whole organ are numerous groups of miliary tubercles. In right lung few scattered tubercles and caseous knots, but no cavities found. *Spleen* large and soft. *Liver* fatty. Ureters and bladder healthy. *Intestines*—In jejunum and ileum were 15 to 20 tuberculous ulcers, ranging in size from a threepenny bit to a shilling. A few ulcers in cæcum and colon. Solitary glands in cæcum and ileum very distinct. *Brain*—Meninges healthy. No tubercles about vessels.

CASE VII.—*Elephantoid Condition of Tissues of Foot occurring during Presence of Necrosed Bone—Disappearance upon its Removal.*

C. P., æt. 57, pilot; good family history; has been a moderate drinker; admitted October 11, 1878. The left foot is greatly enlarged, as shown by following comparrative measurements: Left foot, round instep, 13½ inches; at base of great toe, 13 inches; ankle 14 inches. Right, foot, round instep, 9½ inches; at base of great toe, 9 inches; ankle, 11 inches. Tissues hard, rough and brawny, and this condition extends up to middle of leg. At middle of dorsum a small ulcer exists from pressure of tight boot. It discharges fœtid pus. There is a small sinus over metatarsal bones on inner side of sole, and on probing it the bones are found denuded of periosteum and necrosed. These were removed, and the opening dressed with carbolic oil (1-20). The thickening of foot rapidly disappeared and patient was discharged in three weeks, with both feet about same size.

CASE VIII.—*Multiple Fracture—Laceration of Kidney—Complete Rupture of Bladder.*

J. B., æt. 34, a powerfully-built labourer, admitted June 5th, 1878. Whilst at work, loading marble on a dray at 10 a.m., was struck upon the lower part of the abdomen and legs by a slab weighing about five hundred pounds. He was brought to the Hospital shortly afterwards suffering from shock. There was oblique fracture of both femurs at the junction of lower and middle thirds, comminuted fracture of right tibia and fibula and compound fracture of left tibia and fibula. Surface cold, pulse weak, face anxious. There is tenderness over hypogastric region. The patient does not complain much of pain. After an hour he passed urine containing a large

proportion of bright blood—not clotted. Ice bags were placed over abdomen. Stimulants moderately administered, and legs placed in box splints. At evening he complained of pain in abdomen and great tenderness and vomiting, stercoracous in character, set in; patient rapidly sank and died the following morning. The *post-mortem* examination showed a rupture of left kidney at its posterior and upper border, the tissues about being deeply stained with blood; a transverse laceration of bladder at the base. In the peritoneal cavity bloody urine and serum, with flakes of lymph. Patient informed those attending him that he had not emptied his bladder for some time before the accident.

CASE IX.—*Popliteal Aneurism—Cured in One Hour and Forty Minutes by a Modification of the Esmarch Method.*

N. McN., æt. 33, a strong, well-built man, was admitted June 23rd, 1879, complaining of a painful swelling in the right popliteal space. The patient is a sailor; always enjoyed good health; not intemperate; no definite history of syphilis; family history good. About a week before admission he experienced, for the first time, a shooting pain about the heel and sole of the right foot, which he attributed to wearing a tight-fitting boot. The pain soon extended to the calf of the leg, and was accompanied by a tingling sensation in front of the leg and foot.

On examination a pulsating tumour, half as large again as a hen's egg, occupied the lower part of the popliteal space. Over the site of the tumour the leg measured in girth one and a half inches more than its fellow. Expansile pulsation is most distinct. The skin over the swelling is tense; superficial veins of leg are enlarged; slight œdema of inner side of leg. By pressure over the femoral artery pulsation in the popliteal tumour is arrested, and by firm and continued pressure over the swelling itself the sac

can be emptied. The heart and rest of arterial system appear perfectly healthy.

The day following admission a horse-shoe tourniquet was applied over the vessel in Scarpa's space for a few hours, but as the man was allowed to manipulate the screw at pleasure no good, of course, came of the treatment, but, on the contrary, the tumour was thought to have increased in size, while the leg was much swollen, skin very tense, and pain excessive. Some days were allowed to elapse in order to allow the irritation thus excited to subside.

July 2nd, 1.00 P.M.—The patient, previously prepared by proper dieting and mild purgation, was placed by himself in a comfortable room on a firm mattress. A hypodermic injection of one-quarter grain of morphia was administered to anticipate the pain. The affected limb was elevated by an assistant, while another stripped it of its blood. The ordinary Petit's tourniquet (the old-fashioned strap tourniquet with screw and pad, so familiar to all surgeons, and which is found in every amputation case,) was applied about four inches below Poupart's ligament, a small pad of lint being placed over the position of the femoral artery. Pulsation was thus completely arrested in the aneurism. The limb was raised on pillows, with the knee slightly flexed.

1.30 P.M.—Pain intense; half a grain of morphia given subcutaneously; no pulsation; limb congested, and intensely blue in colour; temperature 99·6°; pulse 84. A Martin's rubber bandage was now applied firmly from the extreme points of the toes to the tourniquet, pressing the aneurism, thus making the limb again bloodless. This had the effect of relieving the pain very considerably; tourniquet tightened.

2:00 P.M.—Temperature, 100°; pulse 70; pain again becoming great; another hypodermic; no pulsation; limb

again congested; elastic bandage applied, and followed by a flannel roller, as he complained of cold.

2.17 P.M.—No pulsation; tumour has been singularly firm to the feel; articular vessels, hitherto imperceptible, can be distinctly felt; pain in tumour very great. Skey's tourniquet is now applied above Petit's, and the latter removed; limb enveloped in cotton wool.

2.40 P.M.—All pressure on the femoral vessel is removed by reversing the screw of Skey's instrument; no pulsation in the tumour can be made out by the most careful search; pain still considerable; temperature 100°; pulse 70; another hypodermic injection of morphia. A skilled assistant was left in charge of the patient, with instructions to re-apply the tourniquet should pulsation return; the patient to be kept on an exclusively milk diet.

3rd.—Rested well during the night; no pulsation; aneurism feels firm and resisting; very little pain.

4th.—Patient complains of a burning sensation in foot and leg. When feeling the tumour about noon to-day I thought I got pulsation, but on more careful examination it proved to be a transmitted impulse, probably from one of the tibial vessels.

10th.—Tumour diminishing in size and not so firm to the feel; no pulsation in the sac itself; occasional pain of a neuralgic character about the foot and ankle; general condition of patient much improved.

25th.—Discharged cured.

Remarks.—I am inclined to regard the method of procedure adopted in this case for the cure of aneurism, as more rational than that by elastic compression—now-a-days so much in vogue amongst surgeons. It has this chief advantage, that while the current of blood through the aneurism is arrested by the process of simple elevation of the limb, blood sufficient for coagulation is allowed to remain, while a certain amount is permitted to approach and probably enter the sac from collateral sources. This

does not obtain when Esmarch's band is employed. Besides, the latter, after a very short time, becomes excessively painful, and, by its pressure, continued for so long a period; it often causes sloughing of the skin and cellular tissue, and perhaps permanent injury to nerves. The administration of an anæsthetic, which is invariably called for when the elastic band is employed, constitutes, in my opinion, another very valid objection to its use, and for the following reasons: first, there may be, and often is, some organic heart-trouble which would contraindicate an anæsthetic; secondly, the surgeon may be unable to secure the services of an assistant sufficiently skilled to administer an anæsthetic, and hence would be obliged to remain in constant attendance, perhaps, for some hours; thirdly, the long-continued administration of any anæsthetic, more especially ether, which would, for many reasons, generally be chosen, is always followed by more or less irritability of stomach, often by considerable elevation of temperature and restlessness, with other disturbing influences, all directed against the permanency of the newly-formed clot. Where morphia alone is required during the treatment, the patient never becomes unruly, and is seldom so narcotized that he cannot contribute passively to the success of the operation.

I look upon the occasional application of Martin's elastic bandage as a very necessary and important item in the treatment, as adopted in our case. It obviates that painful and otherwise hurtful venous stasis, which must of necessity occur. As to the length of time required to effect a cure in this case, I feel certain that all compression could have been with safety removed at the expiration of one hour, as the tumour then felt as firm as at any subsequent period, and the small vessels in the neighbourhood had already increased their calibre very considerably. As a precautionary measure, however, I applied Skey's tourniquet.

I am indebted to Mr. A. Henderson for the notes which I have made use of in drawing up this case.

CASE X.—*Sarcomatous Tumour of Radius—Amputation at Elbow Joint—Recurrence in Humerus—Subsequent Amputation at Shoulder Joint—Recovery.*

D. C., æt. 42, a French-Canadian wood-piler, was admitted to hospital 1st August, 1878, suffering from a tumour which occupied the upper fourth of the anterior aspect of the forearm. The trouble was first noticed by him about four months before admission, but had become rapidly worse in the last six weeks. No history of syphilis, tubercle or rheumatism. A few enlarged veins traversed the skin over the mass. By measurement, the affected arm was two inches greater in circumference than the other. The man suffered intense pain of a shooting character, especially at night, and had an anxious, though not cachectic, look. As the question of chronic periostitis was raised by some of my colleagues, I decided to give him the benefit of the doubt, and put him on large doses (gr. xx.) of the iodide of potash, with hypodermic injections of morphia and warm fomentations for the pain

At the end of three weeks the symptoms were found to have increased in severity, so that, on the 22nd August, assisted by Drs. Fenwick and Wilkins, I proceeded, with antiseptic precautions, to remove the arm, first making an exploratory incision. I cut a long posterior and short anterior flap, utilizing the thickened integument over the olecranon. The muscles were divided after the circular method, and the bone sawn off immediately above the articular surface. The tendon of the biceps was subsequently found to be diseased, necessitating a higher division of that muscle. Instead of the ordinary tubing for drainage, I used two large skeins of carbolized horse hair, passing them through a dependent

opening made in the posterior flap, after the fashion of Syme in his amputation at the ankle joint. In the dressing, I employed here what I can strongly recommend in the greater operations, namely, a couple of flat sponges, properly purified in 1 to 20 solution, applied external to the protective for the purpose of soaking up discharge and preventing it from too soon reaching the edges of the principal dressing.

From the clinical report taken by Mr. McCaffrey, I glean that the dressing was removed on the day following the operation, that the sponges contained about two ounces of bloody serum, and the wound was free from redness or any appearance of tension. On the third day the horse-hair drains were removed, having done their work admirably, and short pieces of drainage tube inserted in their place, but at the angles only. The temperature has never been over 100°, and it was nearly that (99·2°) before the operation. The wound united throughout by first intention, and the man was discharged from Hospital on the sixteenth day after the operation. The stump resulting was well-fashioned and of the useful kind, reminding one very much of Carden's amputation through the condyles of the femur.

Under the microscope the tumour presented the well-marked characters of a round-celled sarcoma. The tendon of the biceps, and at least an inch of the belly of the muscle, were also infiltrated. The ulna was intact. The tumour occupied the upper fourth of the shaft of the radius, and when dissected was found to be as large as a goose's egg.

March 26th, 1879.—The patient sought admission to-day for a pain and swelling in the stump and lower third of the humerus. On examination, the end of the stump is found very much expanded and crackles under the fingers. He has suffered great pain during the past two months and looks worn out from want of sleep. He is willing to

submit to any operative procedure that will give him relief.

29*th*.—Ether was administered, and, with the assistance of Dr. Fenwick, I amputated at the shoulder joint by a modification of Baron Larry's method. Antiseptic measures were taken. The heads of the biceps muscle were removed as close as possible to their bony attachments, as, it will be remembered, the belly of the muscle was found at the last operation to be much infiltrated with sarcomatous elements.

April 1*st*.—Patient doing well; suffers little or no pain; is now cheerful; upper drainage tube removed to-day; wound looks promising.

12*th*.—Wound firmly healed; all dressings removed; not a bad symptom has appeared throughout. He has long suffered from a chronic cough and intercostal pain, and will be transferred for treatment to the medical side.

CASE XI.—*Incised Wound of Thigh—Traumatic Tetanus, occurring Eighteen Days after Receipt of Injury—Recovery under Chloral Hydrate.*

Z. B., æt. 37, a muscular Canadian, was admitted to Hospital the day after the receipt of an incised wound, six inches long by one deep, at middle of outer side of right thigh. The wound, which had involved a vessel of considerable size, was, upon his admission, stuffed with lint that had been saturated in chloride of iron. Towards end of first week the stuffing began to detach, and by end of second week was nearly all removed, and the wound filled with healthy granulations. Four days later the patient complained of a feeling of stiffness about the lateral cervical muscles, which rapidly increased, so that he experienced difficulty in masticating food, and raising his head. These symptoms being dreaded as tetanic, patient was placed in a quiet room, and on fluid diet, with

a free amount of alcoholic stimulants, and ten grains of chloral hydrate every four hours. This seemed to give relief at first; but in two days regular tetanic spasms seized patient's cervical and abdominal muscles, occuring at irregular intervals and excited by movement or noise. Jaws could be separated only about half an inch in the intervals, and during spasms they were firmly shut. A dose of croton oil was administered with good effect, and chloral increasd to ten grains every hour. This was followed by an abatement of the symptoms and a sleepy condition, except during the paroxysms, which came on with pain and firm spasms of the whole muscular system, every half or two hours. Four days after occurrence of trismus, the spasms occurring less frequently and patient being in a heavy lethargic state the greater part of the time, the chloral was stopped and hypodermic injections of the one-sixteenth of a grain of eserine was given every third hour for twelve hours. This, though in no way affecting the pulse or pupil, rather increased the frequency of spasms, and was discontinued. The patient was put on chloral and salicylic acid, ten-grain doses of each, every fourth hour, in solution; but after twenty-four hours' trial proving ineffectual in checking the intensity or frequency of the spasms (which now occurred about every ten or fifteen minutes with great suffering), the acid was omitted and chloral in ten-grain doses again resorted to. A second dose of croton oil was given, and on second day after returning to chloral alone there was a decided improvement noted; spasms being very much less frequent and lasting only about half original time, the jaws being separated at will about one inch. The wound throughout looked healthy, but now appeared to have taken on a diphtheritic character, the granulating surface being covered with a firm, tenacious membrane, which, being removed with forceps, did not reappear. Muscles of abdomen and neck, as well as those of face, which from

the beginning of spasms were in a state of tonic contraction, now became somewhat relaxed. Risus sardonicus, previously well marked, disappeared. Four days later (the thirteenth of tetanic seizure), patient experiencing spasms only at long intervals, the chloral was reduced to ten grains every second hour; and two weeks later all evidence of tetanus having disappeared, the dose was reduced to one drachm per diem, and in another fortnight patient was discharged well.

CASE XII.—*Extensive Cellulitis following Injury to Hand—Pneumonia—Death at End of First Week.*

A. A., a stout, powerfully-built Scotchman, æt. 38, received a severe blow on back of left hand whilst playing at shinty the day before his admission. The skin was simply abraded, and little attention given to the hand until the evening of the second day, when it became swollen and painful, and patient felt chilly. On admission there was considerable swelling and tension, and several incisions were made in back of hand with relief. Poultices were applied, and the hand kept elevated on a pillow, and muriated tincture of iron in 20-drop doses administered every fourth hour. The forearm became rapidly involved, and on the third day the swelling and tension reached elbow joint, above which the irritated lymphatics could be traced with the eye. On the fourth day six ounces of whiskey were allowed, in addition to a nourishing diet. The temperature had fallen from 104·5° Fah. to 101·5°. The forearm being very tense and painful, a few incisions were made, which gave relief for a time. Poultices continued. On the fifth day the arm became swollen and very painful; fluctuation was felt at outer side near elbow. Patient had several severe chills; temperature rose rapidly from 101·5° to 105° Fah. Pulse 112. Respirations 56 per minute. Cough set in with

pain in side and rusty expectoration. On examination of chest, signs of pneumonia at base of right lung. The temperature remains high, in spite of twenty grains of quinine given the night previous. Dyspnœa became urgent, pulse quick, and patient died on the evening of the seventh day.

CASE XIII.—*Concussion of Brain—Complete Paralysis of Third Nerve.*

J. M., æt. 40, whilst drunk fell through the hatchway of a vessel into the hold about thirty feet, and was brought to Hospital in an unconscious state. There was a severe contusion over left malar region and great swelling, closing the corresponding eye. On palpation, crepitus was detected in this region. Right pupil dilated. An ice-cap was applied to the head, lead lotion to the contusion, and a brisk purgative administered. The following morning consciousness had returned; patient was very restless and complained of frontal pain and general chilliness. Over last two ribs on left side, there was tenderness on pressure, but no crepitus. Heart and lungs seemed healthy. Urine contained a small quantity of albumen. On third day, ice was omitted; swelling had nearly gone; eyes opened. Conjunctivæ suffused, marked photophobia. Right pupil dilated. Right upper-lid drooped. All muscles of right eye were paralysed except external rectus, superior oblique and orbicularis. Memory defective; mind somewhat wandering. Speech slow and a little thick. Urine and fæces passed voluntarily. Albumen still present in urine. On fourth day patient continued to experience pain about forehead, and chilliness; but he was allowed to be up about the ward. A blister was applied to right temple. Crepitus still felt over left malar prominence. On seventh day paralysis of all the muscles of right eye supplied by third nerve, remained quite as marked as at

first, excepting the pupil, which was less dilated. Patient, feeling quite well, was discharged.

CASE XIV.—*Urinary Calculus in a Lad of Six—Lithotomy.*

E. S., æt. 6, a Canadian lad, was admitted May 20th, 1878, suffering with symptoms of retention of urine, which the mother stated had existed for about one year. At first he complained of pain in micturating; latterly the stream would suddenly cease while in the act, and he has now and then passed bloody urine. There has been a tendency, for some months past, to prolapsus of the anus when in the act of defæcation or micturition. A sound was passed into bladder and a medium-sized stone found, which had a hard feel. The operation of lateral lithotomy was performed, and a stone removed which weighed twenty-two grains and was the size of a large bean. Very slight bleeding attended the operation, and this was arrested quickly by application of ice. A large sponge which had been carbolized was held to the incision by a napkin, and patient put to bed and placed on a milk diet, receiving an occasional dose of opium. Until the twenty-third day patient did well, the wound being then nearly closed, though by it all urine still escaped from bladder. That evening the temperature rose to 102° (never before exceeding 99°), and the patient felt uneasy and restless. A No. 4 catheter being passed into bladder through urethra, and with the finger in the rectum, a fistulous opening between the two was discovered and large amount of fœtid urine containing much solid *débris* was removed from the former. The fistula, as well as the external wound, soon closed. Patient passed urine naturally without trouble, and was discharged on the thirty-fifth day.

CASE XV.—*Gunshot Wound of Hand—Lodgment of Bullet in Base of Metacarpal Bone—Removal—Subsequent Extensive Cellulitis—Amputation above Wrist.*

P. R., a healthy Irishman, æt. 50, whilst cleaning a pistol the day previous to his admission into Hospital, was accidentally shot in the hand. The ball entered between thumb and index finger on the palmar aspect, in an oblique direction, towards the bases of metacarpal bones. Very slight hæmorrhage had occurred, though the wound had been probed before his removal to Hospital. On examination with the ivory-pointed probe, under chloroform, the ball was found lodged in base of second metacarpal bone. An incision was made over the site, the bone divided by the chain-saw, the bullet extracted, and the ends of bone placed in opposition, a drainage-tube introduced, and the incision in dorsum closed by cat-gut sutures, and covered with water dressing. The following day there was distension of surrounding tissues and elevation of temperature. Sutures were removed and the wound irrigated by a steady stream of cold water. In spite of this, the cellular tissue rapidly became inflamed for some distance up forearm, and the wound became gangrenous and the metacarpal bones denuded of periosteum. After a month the patient, having an irregularly high temperature, diarrhœa alternating with constipation, and suffering much pain, amputation three inches above wrist was consented to, and done antiseptically by flap operation. The patient did well; temperature never above 100°; stump soon healed, and patient was discharged in another week. An examination of the amputated member showed all the metacarpal and carpal bones, and ends of ulna and radius, denuded of periosteum and the third metacarpal bone fractured.

CASE XVI.—*Carcinoma Vaginæ—Excision.*

H. J., æt. 30, a rather cachectic-looking woman, of fair complexion, married for two years, and the mother of one healthy child. Applied for admission on the 7th of October, 1879, with a ragged, ulcerated sore involving the whole of the left labium major and extending for about an inch upwards along the roof and left wall of vagina. Family history good. Patient healthy until about eleven months ago. Since then has suffered much pain and burning in vagina on micturating. Six months since she observed a small sore on inner surface of left labium, which has gradually increased in size, and bled from time to time in washing the part. Several times since her last catamenial period (September 22nd), when the flow was scant, she has lost large quantities of blood, bright-red in colour and fluid. No pain experienced in walking. Glands in groin not enlarged. No history of syphilis. On 10th of October, three days after admission, the whole of the diseased mass was removed, the surfaces covered by mucous membrane, stitched with cat-gut to the skin, and a catheter left in bladder. After nine days, during which the temperature did not exceed 101°, and patient experienced but little pain, the catheter was removed, the surface looking well, and healing rapidly by granulation where the sutures had given way in one or two places. On nineteenth day patient left Hospital; wound quite healed, and parts looking healthy. No difficulty experienced either in voiding or retaining the urine. A month later she returned for examination, when the vagina was found to have a remarkably normal appearance.

CASES OF HIP-JOINT DISEASE.

Fifteen cases of this affection have been under treatment in my wards during the past two years. The

youngest patient was two and a half years old, the eldest eighteen years. Seventy-five per cent. were under ten years. Four excisions were performed, with one death from exhaustion. In two of the cases, the soft parts were so riddled with sinuses that it was found impossible to keep the wounds antiseptic. However, they made good recoveries after many months of treatment.

Subjoined is a brief report of the fourth case, in which excision was performed antiseptically. I am indebted to Mr. G. H. Groves for the notes of the case:—

E. W., æt. 6, was admitted July 10th, 1878; family history good; is fairly nourished. Some two years before admission he fell across the back of a chair, since which time he has complained, now and again, of pain in the right hip. There is now constant pain and lameness, with flattening of the buttock, obliteration of the ileo-femoral fold, and all the signs and symptoms characteristic of morbus coxæ in the advanced first stage; no evidence of suppuration.

The treatment adopted was by extension with weight and pulley; varied counter-irritation by means of iodine liniment, flying blisters, and the actual cautery; and with syrup of the iodide of iron internally. This was continued uninterruptedly for over three months, and the general and local conditions were certainly improved. On 1st October the nurse drew my attention to the fact that the little fellow was less inclined to play, was losing his appetite, and complained of pain in the hip. His temperature was taken, and found to be 101°; pulse rapid; suppuration suspected, although fluctuation could not be made out. Ordered five grains of quinine to be given each day, absolute rest on the back, hot fomentations to the region of the hip, and the weight to be increased from four to eight pounds.

On the 18th November, in spite of these measures, pus was discovered, with the aspirator, behind and a little

below the great trochanter; roughness in the joint also detected

November 24th.—Assisted by my friend Dr. Ross, I excised the hip, employing the single straight incision; a quantity of pus exuded. The bone, first stripped of its periosteum, was divided through the base of the trochanter with a chain saw. The head of the bone was found to be devoid of cartilage, and the acetabulum was considerably eroded along the upper margin, but was not interfered with. Hæmorrhage was trifling. Two cat-gut sutures were inserted at either end of the incision, the centre being left open for drainage.

29th.—Wound looks well; discharge quite antiseptic; temperature, 98·2°; patient feels no pain.

December 20th.—The antiseptic dressings were to-day removed; condition of patient much improved since operation; there is still some discharge, although the cavity is now so much contracted that the drainage tube, No. 6, is with difficulty introduced; boracic lint to be applied.

February 21st, 1879.—Patient has been going about on crutches since the beginning of this month, and the wound has been closed for some days; general condition excellent. Discharged.

Remarks.—The incision which I prefer in this operation is one extending along the anterior border of the trochanter for a distance of two and a half inches above and below the point of that process. Then I have always, with the single exception of the case just reported, made another incision at right angles to that, directly backwards, for a distance of one inch and a half. This gives more room than any other incision with which I am acquainted, not even excepting the V-shaped incision of Cheever. I save as far as possible the periosteum with its muscular attachments, and, even if not diseased, invariably remove the trochanter.

In two of my earlier operations of excision of the hip I had a rather sad experience, Following the directions usually given, my assistant (an excellent one on both occasions), in his efforts to throw the bone out of the socket, fractured the femur—in one case through the lower third, in the other about the junction of the upper with the middle third. Amputation at the hip joint was subsequently called for in one case, and with a rapidly fatal termination; the other died within a month, of pyæmia. Hence, of late, I have discarded that most unsurgical procedure of utilizing the tremendous leverage furnished by the length of the femur, and wrenching the head of the bone out of the acetabulum, and have substituted for it the less brilliant though safer method of dividing the bone *in situ*. I first separate the periosteum and soft parts from the entire circumference of the bone at the situation of the intended division, and then, guided by a probe, carry a chain-saw round the bone and make the section. The trochanter is then grasped with the lion forceps, and the head and neck of the femur are dissected out at leisure. In this way many muscular attachments may be saved, and certainly that lamentable accident, fracture of the femur, cannot occur. Our practice, too, has been to interfere as little as possible with the acetabulum.

As to the after-treatment, I have never seen the necessity for the wire breeches or other complicated apparatus employed by the majority of surgeons. It will be generally sufficient to adapt a light weight, say four pounds, to the limb, while heavy sand bags are applied on each side to keep it steady and in good position.

CASES OF SYNOVITIS.

A number of cases of synovitis, more especially of the knee-joint, of the sub-acute and chronic varieties, have

been under treatment during the past two years. The following case, reported by Mr. McArthur, will give a fair idea of the line of treatment usually adopted, with especial reference to the application of Paquelin's thermo-cautére :—

A. F., æt. 24, was admitted September 26th, 1878, complaining of a swelling in the right knee. Has had gonorrhœa, but not for some months. He is intemperate, and states that after one of his "sprees" he noticed on rising in the morning that the right knee was swollen. He thinks the swelling came on during the night, but doubtless it might have been there for a day or two. The joint is found to be an inch and a half greater in circumference than the other; is painful when moved, and there is a tender spot over the inner condyle, which, it is thought, might have received a blow. There is slight preternatural heat. No other joints affected.

September 26th.—The limb was placed in a well-padded McIntyre splint, adjusted at a slight angle; poultices of linseed meal to be applied every six hours to the joint; internally, iodide of potash in ten grain doses thrice daily; nourishing diet.

October 5th.—Patient very comfortable, but very little improvement in appearance of joint. It is still more than an inch larger than the other. Ether was administered, and the thermo-cautére applied in lines on either side of the patella; dressed with lotio plumbi.

6th.—Looking better; already on measurement there is a reduction in size of about one-third of an inch; poultices to be substituted for the lead lotion.

9th.—On measuring the joint it is found to be enlarged again, owing to cellular infiltration following the application of the cautery; there is now, however, no pain in the joint on movement, and no tenderness; one of the glands in Scarpa's space is slightly enlarged.

16th.—Joint has now a normal appearance; patient

expresses himself perfectly well; can flex and extend the limb without pain or trouble; weak carbolized water dressing to take the place of the poultices.

29*th*.—Discharged cured, but cautioned to wear flannel over the joint and to "favour" the limb for some time.

The thermo-cautére has been largely employed for chronic inflammation of all the joints, and invariably with the most gratifying results. It is applied fearlessly directly over the articulation, and we have yet to learn that any injurious consequences follow its employment. While ordinary blistering, either immediately over an enlarged joint or in the neighbourhood, constantly disappoints, the actual cautery seldom fails to effect an improvement, if not a cure. Why this form of counter-irritant should have such a specific action has, so far as I can learn, never been satisfactorily explained. To insure absolute immobility of a joint while the treatment is being carried out, the plaster of Paris or glue bandage is often applied, a fenestra being made opposite the articulation. The time-honoured Scott's dressing, consisting of the ammoniacum and mercury ointment, spread on sheepskin, and applied in strips after the manner of Baynton's strapping, is also found serviceable in many cases.

A CASE OF OCCIPITAL MENINGOCELE,

TREATED BY SETON, WITH ANTISEPTIC PRECAUTIONS—DEATH.

BY

T. G. RODDICK, M.D.,

Mrs. H., a French woman, brought her female child, aged one month, to the out-patient department on the 10th of May, 1879, to receive advice regarding a congenital tumour of the head. The parents presented a very healthy appearance. The child was fairly nourished, and the lower extremities were well developed. There was found, however, an absence of perineum, so that the rectum and vagina terminated in one shallow opening.

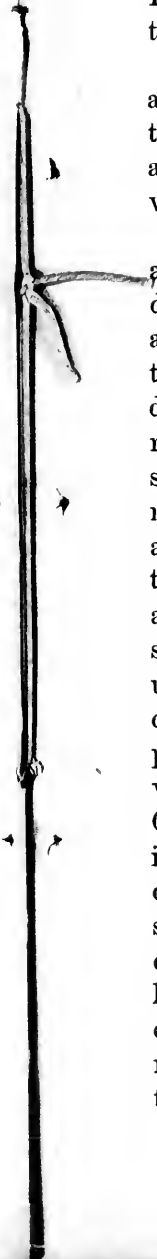
The tumour had not increased much in size since birth, being now about the dimensions of half an ordinary lemon. It appeared to grow by a large pedicle from the centre of the occipital bone at the situation of the protuberance, and, from the fact of its being full of fluid, stood out firmly from its point of attachment. (See Plate.) An opening in the occipital bone could be distinctly made out with the finger. It was translucent, fluctuating, and distended when the child cried. It was covered for two-thirds of its extent with soft, downy hairs. It was thought to contain no brain substance. When lying on its side or back, the child breathed tranquilly, but the moment it was turned on its face the breathing became laboured and the

head very much congested, no doubt from compression of the brain substance by the additional fluid thrown into the skull from the tumour.

The child, who was passed on to me by my friend, Dr. Major, was admitted more as a clinical curiosity than with a view to any operative interference. However, the parents were most solicitous that something should be done. Accordingly, the treatment was begun by drawing off four drachms of the fluid with the ordinary hypodermic syringe, which made the tumour quite flaccid. A compress of cotton wool and a moderately tight bandage were now applied. On the following morning the tumour was as tense and full as before. The fluid withdrawn was as clear as the purest water, and coagulated with heat.

On the 15th May I applied a piece of fine elastic ligature to the neck of the tumour, making the least amount of pressure, my intention being, if possible, to cut off the communication between the sac and the interior of the skull. I thought that this could best be done by lighting up a certain amount of inflammatory action in the secreting sac, the surfaces of which at the pedicle would be held opposed by the constricting band. A strip of lint was placed between the skin and the elastic ligature, so as to protect the former. This procedure caused little or no irritation for the first three days. The child seldom cried and nursed well. After this, however, signs of distress appeared. The child became troublesome and vomited frequently. The ligature had, in spite of every precaution, caused a sloughy condition of the skin in two or three places. The tumour, which for the first forty-eight hours was blue and congested looking, now began visibly to shrink, so that by the fifth day, when the ligature was removed, it presented very much the same appearance as on the occasion when the four drachms of fluid were withdrawn. There was now no appreciable impulse on crying.

Cooling and antiseptic lotions were applied for three or four days, but by this time the tumour had regained its original size, but the impulse was only slightly marked. I decided to risk nothing more in the case, and discharged the child.



However, within a week (May 31st), the parents returned and begged me to make another attempt to remove the tumour. The child by this time had picked up in health, and the sores round the pedicle, caused by the elastic band, were nearly healed.

I now determined on trying the effect of a seton, and accordingly introduced two threads of coarse silk, dressing the part antiseptically. The fluid drained away very rapidly, saturating the dressings, so that they had to be frequently replaced. On the third day the meningocele had entirely collapsed, so that what remained, consisting of the skin and contained membranes, sat closely on the back of the skull. Meantime there was no suppuration, or other evidence of inflammation, and the child's condition was fair; no symptoms referable to the brain. No amount of crying or change of position affected the appearance of the remnant of the tumour, showing either that adhesive inflammation had been set up in the passage of communication, or that the sides of the pedicle were so firmly collapsed that no fluid could pass outwards from the brain. On the fourth day the seton was withdrawn and the openings sealed with collodion. On the sixth day (June 7th), the mother insisted on removing the child, as she herself was suffering in health from close confinement in the hospital ward. In fact her milk supply had been diminishing for some days, so that the child had to be fed or nursed with the bottle. I visited her home three days subsequently and found that the child was not getting that amount of care which it required; in fact, one of the neighbours informed me that the child was being very indifferently nursed, as the mother

was not well and she had no assistance. The little thing had altered very much in appearance, being pinched and cadaverous looking, and moaning constantly. There was nothing to indicate brain trouble beyond a slight nystagmus noticeable at times. There was no heat of head, and the shrivelled remains of the tumour continued to be unaffected by crying or position. There was occasional vomiting and some diarrhœa, which could well be attributed to the character of the food.

June 15th.—Since the date of my last visit the child continued to sink and died this morning.

Autopsy.—I succeeded in getting a partial and very hurried examination of the head only, and secured the occipital bone, a figure of which is given in the plate. The sac was found entirely collapsed, and as far as could be made out there was no passage of communication between the membranes within and without the skull. There was considerable thickening and fibrinous deposition along the pedicle, but nothing to indicate recent acute meningitis. The lateral ventricles were more than usually full of flocculent serum. The fourth ventricle, with which the sac, doubtless, originally communicated, presented nothing abnormal. The brain substance was pale. No other organ was examined. The opening in the occipital bone presented a keyhole shape, its greatest length being 10 millimetres, greatest breadth 8 m., the most contracted part measuring a little over 4 m. The edges of the opening are rounded at the sides, but sharply cut at the bottom. It occupies the exact position of the occipital protuberance without and torcular Herophili within the bone. The lower border of the opening and the foramen magnum are separated by a portion of strong bone 8 m. in breadth. Three or four points in the bone on either side of the opening are seen to be exceedingly thin, and in one place on the left nothing but pericranium appears to be present as a covering.

This case belongs to a class of congenital malformations of more than ordinary interest, and about which comparatively little has yet been written. A remarkable similarity, both in appearance and history, exists between the case just reported and one described and depicted in those admirable clinical lectures recently published by Mr. Jonathan Hutchinson, of the London Hospital. In his case, the operation of excision was most reluctantly performed, as he says, "although we hoped that it had no communication with the skull, it was impossible to feel sure." The child made a good recovery, "but," he continues, "I cannot forget that we ran a very great risk of opening a meningeal sac, and am unwilling to admit that success in a single instance like this should be allowed to interfere much with the general rule which enjoins surgeons not to interfere with congenital tumours in the occipital region." Mr. Hutchinson, like myself, consented to resort to operative measures with considerable reluctance, and only after great pressure from the friends had been brought to bear. The result in his case certainly justified the means, and I am fully convinced that had the mother, in my case, been more solicitous for the well-being of her malformed child, I also would have been in a position to record a perfect success, though by a very different method of treatment. As to the employment of the seton in meningocele, I consider, judging from my experience in this single case, that it well deserves a trial, but should the opportunity again offer I should be disposed to try the combined treatment of elastic compression and drainage by seton, with antiseptic precautions. I cannot help thinking that the elastic ligature, in this case, modified in no little degree the subsequent result.

Mr. Holmes [1] suggests the employment of a clamp with narrow flat blades. This being placed on the pedicle, the

1 Surgical Treatment of Children's Diseases.

cyst is tapped, and as the fluid escapes the blades are tightened with a view of bringing the inner surfaces of the stalk in contact with each other, and lighting up such an amount of inflammation as will obliterate the pedicle. The tumour may then, he thinks, be dissected away. He advocates strongly the injection of iodine.

REMARKABLE CASE OF FAVUS

BY

T. G. RODDICK, M.D.

The following case I have considered worthy of notice distinct from the ordinary Surgical Records. In order to convey a still clearer conception of the case, a wood cut is appended, executed from a drawing by Mr. W. Raphael. For the notes from which the report is made I am indebted to one of my Clinical Clerks, Mr. T. A. O'Callaghan, B.A.

Amanda Taylor, æt. 10, born in Montreal, was admitted to the Hospital September 23rd, 1879.

Family History.—Father is deaf and dumb; otherwise strong and healthy. Maternal grandmother died of consumption; mother has had inflammation of lungs on more than one occasion, and now suffers from a chronic cough. One of the sisters is phthisical. No history of syphilis. The mother has had ten children, four of whom died during childhood; has had no miscarriages. When a child she suffered from an eruption styled "the humour," which affected chiefly her head and ears, and was probably an eczema, as it disappeared in her eighteenth year. Her eyelids have yet, however, an eczematous appearance, being occasionally red and swollen. All the members of the family have had eruptions on the head at one time or other. One of the sisters, a girl of eighteen, now wears a wig, having lost her hair when a child. A boy, twelve years of age, shows every

indication of having suffered from extensive favus, a few crusts of which are still, in fact, to be seen along the border of the hair. The top of the head is devoid of hair and indented by numerous scars, the seat evidently of old favus crusts.

As to the case under consideration, the mother states that five years ago an eruption appeared on the scalp in the form of very small, white, dry pimples; no vesicular character in the eruption. These "pimples" would enlarge and desquamate, and then fall off, leaving often a raw surface. This condition of things was confined to the scalp for two years, after which the eruption began to assume the appearances which at present exist, and spread successively to the shoulders, arms, and buttocks.

The child has always been weak, emaciated and anæmic, but of late has been looking more delicate than ever.

Appearance of Eruption.—Over almost the entire scalp and extending to the temples is a yellow cheese-like mass of eruption, for the most part irregular, but presenting towards the forehead crusts having a cup-shaped character; on the left forehead are two well-marked crusts. The face, ears, and front of the neck are free. The eruption is well-marked and extensive on the back of the neck, along the spine of the scapula, and on the outer side of the arm as far as the junction of the upper with the middle-third of the forearm, being especially thick over the point of the olecranon. The sides of the body and buttocks are thickly covered, and the crusts here are remarkably well-defined, being rounded, and in places standing isolated from one another. The patches on the limbs are also most characteristic, and are confined almost exclusively to the extensor surfaces. In places, as will be noticed on reference to the plate, there is an attempt at a linear arrangement of the eruption, this being especially marked in the neighbourhood of the left knee, and on the calf of the right leg. There is little, if any, indication,

however, of a symmetrical disposition of these lines. On the legs the cups are smaller than elsewhere, extending to the points of the internal malleoli on both sides. The sulphur-yellow appearance of the crusts is here well seen. The eruption is absent from the hands and feet, and does not encroach on the middle line of the trunk in front. It is thickest on the head, the points of the elbows, and over the region of the patella on both limbs; the crusts being piled several deep, and in places assuming very much the stratified appearance of that common fungus growth so often seen on the bark of certain trees. Pediculi swarm among the crusts on the head, and where these are thickest about the elbows and knees. The peculiar musty smell of favus pervades the entire ward. The cervical and inguinal glands are enlarged.

The following is an epitome of a very graphic report furnished me by Mr. O'Callaghan of a visit made, at my request, to the patient's home:—

This afternoon (October 11th, 1879), we set out on our search for the patient's home. In the poorest part of Griffintown—well-known as the home of poverty and filth—is a little street named Basin, about eighty rods in length, filled with rubbish of all kinds in all stages of decomposition. The street is lined on one side by a row of low wooden houses; on the other by a wood-yard, a few miserable houses, and a foundry that continually emits volumes of thick black smoke. Running parallel with, and a few yards from the street, is the canal. In the midst of a crowd of boys we found our patient's brother, aged about twelve years, who informed us that he was engaged in picking coal and wood about the docks to supply the family with fuel. He has had, as long as he can remember, an eruption on his head. (This is the case already referred to in the report.) He volunteered to tell us that his brothers and sisters had been, some time in life, as bald as he, but had all entirely recovered. We

since learnt that the eldest sister wears a wig, being absolutely bald.

We found that the family occupied a tenement house situated in a dirty back yard. In it there were marks of extreme poverty. The coal and wood were piled in one corner of the room, a heap of straw in the other. The air was oppressive, a rank odour of decay and moisture pervading the place. The window looked into a yard, evidently the receptacle for the refuse of the whole house. The tenement previously occupied by the family, and in which our patient first suffered from the disease, appears to have been, if possible, in a more unhygienic condition than their present residence.

Diary of Case.—Nov. 31*st.*—No treatment has hitherto been resorted to, the case being retained *in statu quo* as a clinical curiosity. The number of pediculi has increased very much since admission, so that now they swarm in every direction. The child was chloroformed, and a number of the crusts and hairs removed for microscopical purposes. She was then placed in the ordinary wet pack, consisting of a sheet wrung out of tepid water, a couple of blankets, and enveloping all a piece of rubber sheeting. She remained in this without discomfort for five hours, at end of which time the crusts had almost disappeared from the body and limbs, leaving deep, red, flesh-coloured bases. In the meantime a solution of bichloride of mercury of the strength of twelve grains to the ounce was applied freely to the head to destroy the pediculi.

4*th.*—The sites of the crusts are to-day slightly raised. The entire body and limbs are enveloped in strips of cotton cloth saturated in a lotion composed of one part of sulphurous acid and five of water. The pediculi on the head are still numerous, but it is thought well to reduce the strength of the bichloride solution by one-half. The child appears to suffer much from cold and shivers con-

stantly. She is ordered most nutritious diet, including half a pint of cream daily.

5th.—Condition much improved, she being cheerful and disposed to take more nourishment.

6th.—To-day the crusts were removed from the head, the hair cut close, and the whole body carefully bathed. The scalp presents a very raw appearance, the epidermis having come away with the hair and crusts. The appearance of the body has greatly improved. The pediculi have entirely disappeared. The lotion of sulphurous acid is now being applied to the head.

10th.—Patient allowed up and about, and all treatment discontinued in order to observe to what extent the disease will recur.

17th.—On the head and about the elbows and knees the parasite is beginning to re-appear in beautifully formed, sulphur-yellow, cup-shaped patches, varying in size from a pin's head to a split pea, and perfectly isolated. In the centre of the crusts no mould can be made out with the naked eye, but with the aid of a lens it can be distinctly seen. A more beautiful and conclusive demonstration of the development and parasitic character of the Achorion cannot well be imagined.

26th.—To-day the sulphurous acid lotion of same strength was applied; child in excellent health.

27th.—The fresh crop of crusts has disappeared.

December 8th.—Epilation was begun to-day under chloroform, and is to be repeated each day for about twenty minutes, until the diseased hairs are all removed.

24th.—An ointment containing five grains of ammonia-chloride of mercury to an ounce of vaseline is to be applied to the patches on the body and limbs, the sulphurous acid to be continued to the head; patient in perfect health.

January 5th, 1880.—The process of epilation was com-

pleted to-day; the white precipitate ointment is to be applied to the scalp also.

18*th*.—These notes have been held back from the press, in order to make as late an observation as possible regarding the condition of the disease. There is certainly no appearance of the parasite on any part of the body, and as far as can be made out no indication of its return. The skin of the trunk and extremities has assumed a uniformly soft and healthy appearance, while the scalp has a glossy and normal aspect, and is being rapidly covered with soft downy hair. The child's general condition is remarkably improved. An ointment containing carbolic acid and vaseline (gr. v. to ℥i.;) will be applied for some time to the skin where the disease was most prevalent; internally cod liver oil and steel.

SOME REMARKS ON

LISTER'S ANTISEPTIC METHOD

AS PRACTISED IN THE

MONTREAL GENERAL HOSPITAL,

(DURING THE TWO YEARS ENDING SEPTEMBER, 1879.)

BY

T. G. RODDICK, M.D.

I have thought this a fitting opportunity to record briefly a few general conclusions at which I have arrived regarding Professor Lister's method of treating wounds; giving at the same time the results of the system as carried out in the Wards of the Montreal General Hospital.

The details of the practice were studied by myself in the Wards of the Royal Infirmary, Edinburgh, during the summer of 1877; and on my return to this country in September of that year I brought with me a complete Antiseptic outfit, including boiler, charged gauze, protective, drainage tubes, &c. I had not been many hours in the city before I was called upon to attend a case of compound fracture of the leg, which I dressed antiseptically, and since that time, with scarcely an exception, all major operations performed in the Hospital have been done with antiseptic precautions.

The Hospital, the central portion of which was erected in

1821, is ill-adapted for the purposes for which it is intended, although the management, under the able guidance of the President, Peter Redpath, Esq., deserve great credit for the efforts they have made during the past four years to modernize the building, as well as to improve the nursing service. The ventilation, lighting, and hygienic condition generally have at last been much ameliorated by the substitution of a few large and airy wards for a number of wretched little rooms, which were notorious as being veritable hot-beds of disease germs. The bath and closet systems have also been much improved. Thus, undoubtedly, a great change has been wrought in the sanitary condition of the Hospital since 1876, and to it, and the improvement in the system of nursing, I am willing to accede a due share of the credit for the admirable results which have been obtained in the surgical wards during the two years ending September, 1879.

For many years the Hospital Staff had been almost in despair over their surgical cases. It was exceptional to save an amputation, and even operations of the magnitude of breast and tumour excisions were frequently followed by fatal results. It was next to impossible to protect a wound against erysipelas, and blood-poisoning was an every day occurrence. The following quotation from Nussbaum's remarkable paper entitled the "Past and the Present" gives as truthful a picture of the condition of our Hospital, previous to the introduction of "Listerism," as can well be imagined :—"If a case of amputation or resection was fortunate enough to escape pyæmia, it was only to suffer again and again from attacks of erysipelas or hospital fever, or the wounds became covered with an unhealthy exudation which had to be destroyed by caustics."

I regret that it is not in my power to offer an accurate comparative statement of the surgical results of the Hospital before and after the introduction of Lister's method, as unfortunately we had not been in the habit of

keeping complete records of the cases. In the following table, however, will be found a faithful statement of the results for the two years ending September, 1879, being the first two years of the Listerian *regime*.

The following are the members of the Staff whose cases, besides my own, are included in this table—Drs. Reddy, Fenwick, Ross, and Wilkins :—

MAJOR OPERATIONS.	RECOV.	DIED.
Amputation of Thigh	3	..
" Leg	4	1
" Arm	9	..
" Foot (Syme's)	2	..
Excision of Elbow	4	..
" Hip	2	1
" Knee	4	..
" Astragalus	2	..
Removal of Breast	12	..
" Tumour (various)	17	..
" Testicle	2	..
Ovariotomy	1	..
	62	2

Following the plan adopted by Mr. Savory in the preparation of his statistics of St. Bartholomew's Hospital, as comprised in his recent address, I have not included in this table three cases of herniotomy which proved fatal. The deaths in all these cases of hernia occurred within forty-eight hours after operation, the condition of the patients at the time of admission being exceptionally unfavourable. All minor operations, such as the amputation of toes and fingers, the opening of abscesses, the removal of bullets, the removal of small tumours, and operations on the eyelids, which were done antiseptically, have been purposely eliminated from the table, although in not one of these can we record a single untoward event.

Of the deaths that occurred, one was in amputation of

the leg for gangrene due to embolism of the femoral artery. The gangrenous action extended in the flaps, and the patient, a feeble woman, aged 55 years, succumbed to exhaustion in the third week. The autopsy disclosed aneurism of the common iliac and occlusion of the vessels from that point. The antiseptic dressings were removed after the first week, and charcoal poultices substituted. There was no evidence of pyæmia in the case. The other death recorded in the table was in a case of far advanced morbus coxæ, in which excision was performed as a *dernier ressort*. Sinuses of long standing existed, and although a faithful attempt was made to "sweeten" them at the time of operation, the discharge was putrescent from the first, and the antiseptic dressings were abandoned on the third day. This patient died unquestionably of pyæmia on the sixth day, but the wound had probably never been in an antiseptic condition.

We have then a record of 64 major operations with two deaths, being a mortality of 3·12 per cent. There are few British hospitals whose statistics can compare favourably with these. The late lamented Callender, of St. Bartholomew's, boasted of a mortality of barely 3·4 per cent., his operations being performed by a modified antiseptic method. One of the surgeons of the Royal Infirmary, Glasgow, a follower of Lister, recently published a table of statistics, similarly constructed to our own, giving a mortality of 3·22 per cent.

To give some further idea of the great change wrought by "Listerism" in our own hospital, I would quote the results in the amputations of the lower extremity during the last two years of the old system. Of four amputations of the thigh recorded, *all were fatal*. Of six amputations of the leg, *four* were fatal. This frightful mortality is probably exceptional, but what guarantee have we that it would not have been perpetuated under

the then existing method of treatment. The fact is, as a staff of hospital surgeons, we had no well established or uniform method of treating wounds or amputations. The form of dressing applied depended in great measure on the caprice of the operator—thus one would use water dressing and leave the wound open; another would attempt to seal it hermetically with a view to securing primary union, the result being often great tension, great constitutional disturbance, and rapid septo-pyæmia; while a third would be influenced by every suggestion, and in the space of a few days would have tried several different dressings. Now we have a definite method of procedure, and we know from experience that if all the prescribed precautions be taken a certain given result will follow.

We have had our failures, it is true. By "failure" the antiseptic surgeon does not mean fatal result, but simply the occurrence of putrescence in wounds. This has, however, almost invariably occurred at a date so distant from the original operation that no evil consequences followed. It is a clinical fact, which I am in the habit of pointing out, that if a wound can be kept "sweet" for ninety-six hours, there is little likelihood of harm coming to the patient by the subsequent occurrence of putrescence. The temperature may go up a degree or so, and there may be a little more pain in the wound, but beyond these there will usually be no serious complication. Hence, I make it a rule to change the antiseptic dressings daily for at least the first four days, even though the draw-sheet should not be stained. When, however, the discharge from a wound becomes putrid (as indicated by the odour, and the presence of bacteria) within the four days, the constitutional disturbance is almost certain to be considerable, and it will often be found a matter of the greatest difficulty to remove these evidences of putrefaction.

The following case,[1] which has recently been under my care, illustrates these facts very well:—

Edward L., æt. 31, a fairly healthy-looking man, was admitted to the Hospital November 13th, 1879. Being a "tramp," he slept in an open barn one night some two weeks before admission, and on awakening in the morning felt the right foot cold and benumbed. He did not remove his boot, and walked almost continuously for four days without looking at the foot. He now began to suffer great pain, and noticed that the part was much discoloured. When he entered hospital the anterior portion of the right foot was in a gangrenous condition, of a greenish-black colour, moist, and emitting an offensive odour. The line of demarcation extended from the anterior border of the internal cuneiform bone, which was exposed, across to the opposite side of the foot. The healthy portion of the foot was a little red, swollen, and tender as far as the ankle. On the left toes were a number of superficial ulcers.

November 20th.—Line of demarcation so well formed that the dead parts are falling away from the living behind the tarso-metatarsal joints; nothing inflammatory about healthy part of foot; temperature normal; appetite good. To-day I performed antiseptically Syme's amputation, assisted by my friend, Dr. Shepherd. Beyond an unusual amount of oozing, there was nothing special in the operation. In the heel flaps were left two sloughy-looking ulcers, each about the size of a ten-cent piece.

21st.—Very restless and uneasy; slept little; had a severe headache during the night; profuse perspiration, but no rigors; nausea, no vomiting; tongue thickly coated; pulse frequent and compressible; foot comparatively comfortable. Dressing removed, and found saturated with bloody serum, but no odour; temperature 100°.

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1 Reported by Mr. H. B. Small.

3·00 P.M.—Temperature 104°; patient very restless; ordered twenty grains of quinine.

22*nd*. More comfortable since the quinine was given; dressings saturated with serous discharge, which is decidedly fœtid. The little patches of ulceration before noticed tend to spread. The cavity of the stump was thoroughly injected with 1-20 carbolic solution, with a view to making it again antiseptic.

23*rd*.—Temperature last night 101°: feels fairly well to-day. The discharge is again very fœtid, and, under the microscope, is found to be swarming with bacteria. The stump is again well washed and injected with the 1-20 solution, and dressed under a good spray. Pieces of gauze soaked in the ordinary chloride of zinc solution are applied to the ulcers. In fact, every effort is made to sweeten the stump.

24*th*.—Discharge if anything more fœtid than before, darkening both protective and drainage tube. Temperature ranges between 101° and 102°, though otherwise the patient appears to be comfortable. It is felt that, in order to correct the septic tendency, the dressings should be removed oftener than once in the twenty-four hours, but as this is not practicable at present, the antiseptic dressings are to be discontinued and the stump kept constantly irrigated with a 1-40 carbolic lotion. Primary union has taken place only in part, about half of the edge of the flaps having sloughed for a depth of from one to two lines.

Healing, chiefly by granulation, went on slowly, but the man made a good recovery, with an excellent stump, and was fit to be discharged on the 20th January, 1880. The fœtor rapidly gave way to the irrigation. One of the ulcers on the stump, before referred to, subsequently sloughed through the entire thickness of the flaps, and, from the first, must have been deeper than we imagined.

What the exact cause of so obstinate a putrescence could have been, I am unable to say. I incline to the belief,

however, that bacteria had found a hiding place in the recesses of that slough which subsequently proved to extend so deeply, and that they were never reached by the 1-20 solution. They would lie quiet, doubtless, so long as the immediate effects of the antiseptic lasted, after which they would swarm out and multiply as they only can. Continuous irrigation with even a weaker solution will, under such circumstances, subdue the bacteria, and in forty-eight hours often sweeten the discharge. Then, if it is thought well, the spray and gauze can be again brought into requisition, and Lister's method, with now infrequent dressings, carried out to the end.

In like manner when sinuses have existed in a part for a length of time, as in connection with a dead bone or a diseased joint, it is often a most difficult task to cleanse them so effectually that the discharge shall afterwards remain aseptic. This can be done only by repeated injections of chloride of zinc solution, of the strength of forty grains to the ounce, and in some cases this causes such an amount of distress and irritation that it cannot be effectually carried out. Hence in not a few cases of necrosis and in one or two joint excisions, where sinuses had long existed, I have been compelled to abandon Lister's dressing proper, and to trust to antiseptic irrigation. The results obtained in this way have been always long delayed, but ultimately good.

But to return to the subject of our Hospital mortality since the introduction of the antiseptic method. There is another remarkable fact which is well worth recording, namely, that in the two years under consideration, there has not been a single death from Erysipelas. For months together the Ward set apart for that purpose has not contained a case. In fact during the session of 1878-9 a case of traumatic Erysipelas would have been almost welcomed for its clinical interest. Now and then patients with the idiopathic form have been admitted, but these

were never isolated; nor do we find that the disease assumes that malignant type, which was formerly so often seen. The atmosphere into which it is now brought is not so congenial to it, and certainly deprives it of its contagious character.

Much more of equal value and importance remains to be said on this subject, but neither time nor space will permit. Before closing this article, however, I have much pleasure in bearing testimony to the honest and zealous manner in which the Resident Staff of the past two years have assisted in carrying out the "Listerian" method, and to the lively interest which the Managing Committee have ever shown in connection with the subject.

Moreover, it is very satisfactory to be able to make this assertion, that there is no Hospital the Surgeons of which could have stronger convictions in favour of the antiseptic system, than those attached to the Montreal General Hospital.