

It will thus be seen that some improvement followed the introduction of the open method, but this in no way corresponds to that effected by the aseptic method.

The causes of death are not given, but of the 39 deaths of the first period, at least 27 were from pyæmia and septicæmia (14 of the cases treated to the end conservatively and 13 of the secondary amputations). Of the 18 deaths of the second period at least 8 were from pyæmia and septicæmia (5 of the cases treated conservatively and 3 of those amputated secondarily). As I have said, this is the most favourable statement possible, and it does not include those which died of other septic diseases.

I do not find any facts of statistical value, with regard to the results with other forms of antiseptic treatment, but the good results of irrigation and the water bath and of crust formation are well known, and have already been alluded to in the history of the subject. The whole tendency of the facts published in recent times is, however, to show that success increases according as the method adopted fulfils more and more the requirements of the aseptic principle; and the same is evident if we look at the history of the subject and see the successes obtained by the use of balsams, of crust formation, of irrigation and the water bath, and of subcutaneous surgery.

## CHAPTER XX.

RESULTS OF ANTISEPTIC SURGERY—(*continued*).

Abscesses connected with disease of the vertebræ. Best situation for opening psoas abscesses: best time for opening them: after-treatment and after-progress. Table of Mr. Lister's results: general summary and remarks on these cases. Comparative statistics are wanting. Sir James Paget's views.

BEFORE discussing these results, I think that it will be most convenient to consider the last group of cases to which I intend to refer, viz. cases of abscesses connected with disease of the vertebræ. The cases which I give here were treated by Mr. Lister between the end of 1871 and 1879; and I will mention all the cases which occurred during that period. I have been careful to take only those abscesses which were unmistakably connected with disease of the vertebræ, as indicated by curvature, by the history of the case and the symptoms present, and, in several instances, by the presence of pieces of bone in the pus. Of course this list, like the others, does not represent all the cases which Mr. Lister has ever treated aseptically, for he had several cases under his care before this period, and both before and during it, he has treated a number of similar abscesses in private practice. Here, as in other instances, his results have been better in private practice than in hospital, because the cases were attended to either by himself or by skilled assistants, while in hospital it was often necessary to leave the changing of the dressings to students.

In the treatment of these abscesses the general principles of aseptic surgery are carried out in the manner before described, and I need not recapitulate the points here. I must, however, say a few words as to the best situation for opening psoas abscesses. An abscess which has passed into the thigh,

lining the abscess cavity. This discharge rapidly diminishes, and in a few days becomes very slight. After the original pus is evacuated there is no more pus formation from the abscess cavity, provided that the drainage is efficient and that the discharge is kept aseptic. There may be a little suppuration from the granulations surrounding the orifice of the drainage-tube, which are irritated by the direct application of the carbolic acid, but there is no suppuration from the deeper parts. As a consequence of the slight amount of discharge the dressings are not often changed, and generally, in a few weeks after the abscess has been opened, the case is only dressed once a week, and then not because discharge has reached the edge of the dressing, but, for the reasons given on p. 93, because it is considered that the dressing is no longer sufficiently antiseptic.<sup>1</sup> A sinus often remains for a long time, sometimes for months, and the weekly dressings must be continued till it finally closes, the greatest care in carrying out the minutest aseptic precautions being required till healing is complete. Never be tempted, however slight the discharge, or however apparently superficial the sore, to give up the aseptic method or to substitute boracic for carbolic dressings. During the whole treatment of the case the patient must be kept absolutely recumbent, whether lying on his back or on his side is of little consequence, and must never be allowed to raise his shoulders for any reason whatever. Generally, after the sinus has healed, it is well to maintain the perfectly recumbent position for at least six weeks longer, so as to ensure that the bones are sound before the weight of the body is allowed to tell on them. The maintenance of absolute rest is essential for success.

The constitutional state of the patient rapidly improves after the abscess is opened. If hectic fever is present beforehand, it generally rapidly subsides (see T. Chart LIV), and the temperature becomes normal, and remains so throughout; and if the temperature is normal before the abscess is opened it does not rise nor assume a hectic type, as is so common when the

<sup>1</sup> I may just recall the fact alluded to on p. 89, that when dressings are left on for a week, there sometimes occurs a little irritation beneath them, and that, therefore, it is well to rub a little of the salicylic cream on the skin around the wound before applying the dressing.

discharge is allowed to putrefy. The general condition of the patient corresponds entirely to this state of the temperature: if he has been weak and suffering before, he rapidly regains strength, loses his pain, and puts on flesh; his appetite returns, and he soon feels in a state of perfect health. The reason for this is evident; the patient is not exhausted by the daily loss of a large quantity of discharge, while he is relieved from the presence of the abscess. Cod-liver oil and iron are, of course, given throughout, but stimulants are rarely necessary, at least after the first week or two. Although these cases remain so well, and although the discharge is soon practically *nil*, yet they are as a rule very tedious, and it is well not to reckon on cure in less than six or eight months; some cases indeed last much longer. It is expedient, therefore, to warn the patient's friends of this before the abscess is opened, for otherwise they may get discouraged and take the patient away; and if aseptic treatment is not continued to the end, the chances of recovery are almost as slight as if it had never been employed.

A number of examples of the 'aseptic course' of these abscesses just described will be found in the following table, so that I need not detail a case here.

## PSOAS AND

No.	Name and Age	Date of Operation and Discharge; with Result	Disease.
1	Jane T., 38 . .	<i>Op.</i> , Dec. 21, 1871. <i>Dis.</i> , Jan. 31, 1872. <i>Result</i> , putrefied.	Large psoas abscess forming a bulging tumour in the thigh and extending high up in the abdomen. First noticed six months previously, pain in back, &c.
2	Donald T., 24 .	<i>Op.</i> , Feb. 19, 1872. <i>Dis.</i> , Feb. 1873. <i>Result</i> , cured.	Lumbar abscess. Patient hurt his back two-and-half years ago, pain in back, &c.
3	Thomas G., 5 .	<i>Op.</i> , April 2, 1872. <i>Result</i> , unknown, probably cured.	Psoas abscess in connection with advanced spinal disease. A lumbar abscess appeared later.
4	William L., 45	<i>Op.</i> , April 1872. <i>Dis.</i> , April 3, 1873. <i>Result</i> , cured.	Lumbar abscess. Curvature of spine, &c.
5	Thomas M., 62	<i>Op.</i> , July 4, 1872. <i>Dis.</i> , April 2, 1873. <i>Result</i> , died of an independent cause.	Lumbar abscess. Patient first noticed a swelling three months previous to admission. There was no curvature but great pain on pressure over the spine in the lumbar region.
6	Peter L., 35 . .	<i>Op.</i> , Sept. 1872. <i>Dis.</i> , Oct. 21, 1873. <i>Result</i> , cured.	Psoas abscess with marked curvature of the spine about the lower dorsal region. Abscess pointing in the thigh. Disease began nine years previously. Suffered great pain and had been getting weaker and thinner.

## LUMBAR ABSCESES.

Treatment	Remarks
Abscess opened in thigh and 40 oz. of pus evacuated. Drainage-tube inserted.	On December 26, it was found that the menstrual flow had soaked the dressings and the discharge had a disagreeable odour. On December 28, a large piece of bone came away. As the abscess was undoubtedly putrid, and as the patient was very anxious to go home, she was allowed to do so. At that time there was profuse discharge and the patient was getting weaker.
Opened, 10 oz. of pus evacuated. Drainage-tube inserted.	The discharge rapidly decreased in amount, being in the main serous though occasionally somewhat purulent. The abscess had completely healed on October 24, but on November 11 the cicatrix gave way and a sinus was re-established. This healed permanently about the end of January.
Opened, drainage-tube inserted. (The lumbar abscess was opened in October).	After opening the first abscess the discharge was considerable and purulent, but there was no smell. Many fragments of bone came away during the course of the summer, and in October a lumbar abscess was found and opened. The case is not completed in the note books, the last note having been taken on April 20, 1873, to the effect that there was very little discharge, and that the general health was good. I should think that the case was in all probability cured.
Abscess opened. Drainage-tube inserted.	Aseptic course. The wound was found healed on August 11, but the scar again opened. Healed again on October 13; again the scar gave way. Healed permanently on December 10. For some time the patient could not do without a spinal support, but in July 1877 he showed himself, and was then perfectly well and strong and able to do any kind of work.
Opened. Drainage-tube inserted.	On November 28, some curvature of the spine was noticed. In February the dressings were changed weekly, there being only a small sinus, which at the end of March had almost absolutely healed. At this time a small glandular abscess formed in the neck and was opened and dressed with boracic lint. On March 23, erysipelas attacked this wound and quickly spread over the head and neck. The patient got rapidly weaker, and died on April 2. (This is really a case of cured lumbar abscess dying of another cause before leaving hospital.)
Opened. Drainage-tube inserted. The material evacuated was very thick.	Aseptic course, the discharge being purely serous and very slight in quantity. Healed in September 1873.

## PSOAS AND

No.	Name and Age	Date of Operation and Discharge; with Result	Disease
7	T. H., 9 . . .	<i>Op.</i> , Feb. 8, 1873. <i>Dis.</i> , March 8, 1873. <i>Result</i> , in process of cure.	Three lumbar abscesses. Curvature in the dorsal region. Patient weak and thin.
8	Helen T., 24 . .	<i>Op.</i> , May 7, 1873. <i>Dis.</i> , Dec. 22, ,, <i>Result</i> , cured.	Psoas abscess, which had passed into the thigh. Patient began to feel weakness in the back about six months previously. She had noticed the swelling in her thigh for three months.
9	Donald R., 26 .	<i>Op.</i> , June 2, 1873. <i>Dis.</i> , Jan. 23, 1874. <i>Result</i> , cured.	Psoas abscess pointing in the thigh. Curvature in the lower lumbar region.
10	Jane R., 27 . .	<i>Op.</i> , July 2, 1873. <i>Dis.</i> , Feb. 2, 1876. <i>Result</i> , cured.	Patient was admitted in June 1873 on account of suppuration of the sheaths of the flexor tendons of the hand following an incision into a bursitis of these tendons not performed aseptically. On July 2, a psoas abscess was found in the right iliac fossa. Had suffered from pain in her back for about a year, and for some time from abdominal tenderness.
11	Anne McK., 22	<i>Op.</i> , Aug. 21, 1873. <i>Dis.</i> , Spring 1874. <i>Result</i> , cured.	Lumbar abscess with well-marked curvature of the lower dorsal vertebrae. A second abscess formed later.
12	— W., 32 . . .	<i>Op.</i> , Sept. 2, 1873. <i>Died</i> , Feb. 3, 1874. The cause of death was phthisis.	Psoas abscess pointing in the thigh. Curvature in the lumbar region; great pain in the back. Advanced phthisis.
13	Eliza M., 30 . .	<i>Op.</i> , Feb. 19, 1874. <i>Dis.</i> , Nov. 10, ,, <i>Result</i> , in process of cure.	Dorsal abscess. Great tenderness on pressure over the whole dorsal vertebrae and curvature of the middle ones. Patient very weak and anæmic. The pain began a year ago. Patient half-witted.

LUMBAR ABSCESSSES (*continued*).

Treatment	Remarks
Opened. Drainage-tubes inserted.	On Feb. 23, the two smaller abscesses had closed. The drainage-tube was removed from the other, and by March 8, the discharge was very slight. The parents were very anxious to take the child home, and they were allowed to do so after having been instructed in the method of dressing. The general health was at that time improving.
Opened. Drainage-tube inserted, 30 oz. of pus were evacuated.	Aseptic course. After June 3, the case was dressed every second day, and after July 6, every three days. Healed about the beginning of November.
Opened above Poupart's ligament. Drainage-tube inserted, 23 oz. of pus evacuated.	Aseptic course. No more pus. Found healed on October 10. Patient allowed to get up for the first time on December 6.
Abscess opened above Poupart's ligament, 20 oz. of pus containing pieces of bone were evacuated. Drainage-tube was inserted.	The discharge rapidly diminished, and the case was soon dressed only once a week. Aseptic course, the discharge being purely serous. On December 2, 1874, abscesses were found in connection with the elbow-joint and opened, the patient's health being then good and the psoas abscess almost healed. When the patient left hospital everything was sound. When heard of in 1877, she was well and strong and had a fairly movable elbow-joint.
Opened, 10 oz. of pus evacuated. Drainage-tube inserted.	Aseptic course. Quite healed on July 31, 1874. On September 15, 1874, she was allowed to sit up for the first time, but afterwards felt great pain in the dorsal vertebrae. She again sat up on October 3, but again had pain. On October 22, a small abscess was opened at the side of the former one. This healed during the spring of 1875, and the patient was discharged cured. (The exact dates of healing and discharge cannot be ascertained.)
Opened, 24 oz. of pus evacuated. Drainage-tube inserted.	Till the middle of November the case went on well, and the general health seemed to improve, but from that time the lung disease rapidly got worse and the patient gradually became weaker. Diarrhoea set in in January. During the last two or three weeks there was a considerable increase in the amount of the discharge, which became purulent.
Opened, 24 oz. of pus evacuated. Drainage-tube inserted.	The abscess went on as usual, the discharge diminishing, and the patient's health improving when, on April 9, she tore off the dressings. Next day there was a slight smell, and the wound was injected with 1-20 carbolic lotion. The discharge thereafter was odourless. No notes are given from the end of April till November 10, when she is said to have been 'discharged in process of cure.' (See T. Chart I.V.)

## PSOAS AND

No.	Name and Age	Date of Operation and Discharge; with Result	Disease
14	Margaret M., 7	Op., July 1874. Dis., Jan. 1875. Result, cured.	Psoas abscess, angular curvature in the lumbar region. Began six months before admission.
15	Margaret S., 20	Op., Aug. 3, 1874. Dis., Sept. 2, 1875. Result, cured.	Dorsal abscess. Angular curvature in the dorsal region. Symptoms began eighteen months before admission. Patient thin, without appetite, and had cough and hæmoptysis.
16	Susan J., 12	Op., Aug. 17, 1874. Dis., April 17, 1875. Result, putrefied.	Psoas abscess. Curvature in the lumbar region.
17	William M., 6	Op., Sept. 14, 1874. Dis., Nov. 7, 1876. Result, cured.	Psoas abscess, which had not yet passed into the thigh. Curvature in the lower dorsal region.
18	William L., 25	Op., Jan. 19, 1875. Dis., June 19, " Result, left hospital before healing was complete.	Psoas abscess. Curvature in the lumbar region.
19	Thomas M., 15	Op., July 4, 1875. Result, cured.	Lumbar abscess. Patient was admitted in May with an abscess connected with a carious rib.
20	Mary C., 4	Op., Nov. 18, 1875. Dis., June 27, 1876. Result, putrefied.	Psoas abscess with disease of the vertebrae.
21	Margaret W., 24	Op., Nov. 16, 1875. Died, March 17, 1877. Result, died of exhaustion.	Psoas abscess pointing in the thigh. Acute curvature in the lumbar region. The abscess extended all round the thigh.

## LUMBAR ABSCESSSES (continued).

Treatment	Remarks
Opened, 14 oz. of pus evacuated. Pieces of bone in the pus. Drainage-tube inserted.	Aseptic course. Healed November 20, 1874. Allowed to sit up on January 9, 1875. Exact date of discharge not given.
Opened, 5 oz. of pus evacuated. Drainage-tube inserted.	Aseptic course. Healed in August 1875. Patient rapidly picked up flesh and regained her appetite after the abscess was opened. When she was discharged she was stout and well.
Opened, 8 oz. of pus evacuated. No drainage-tube was inserted.	On September 8, this wound had healed, but a collection soon reformed, which, on evacuation, was found to consist of clear yellow serum. During the month of February the case seems to have putrefied, and on March 22, aseptic measures were stopped and wet boracic lint applied. Sent home.
Opened by a dissection as if to tie the external iliac artery. Drainage-tube inserted.	Aseptic course, but the patient was extremely restless, and it was very difficult to prevent him from sitting up. To this is possibly due the long delay in healing. This abscess was found healed on September 15, 1876. A second abscess formed on the opposite side and was opened during October 1875. This had healed before the patient was discharged.
Opened like No. 17, 15 oz. of pus evacuated.	The wound was doing well, but the patient got tired of hospital, and would not stay longer. The tube was therefore removed and he was taught how to dress the wound aseptically. When he left his urine was albuminous, but its state on admission is not given.
Opened. The spinous process of one of the lumbar vertebrae was felt to be bare. Drainage-tube inserted.	This case seems to have followed an aseptic course; the patient left the hospital healed and cured. But the notes are abominably taken, and there is no note either of the date of healing or of the date of dismissal.
Opened like No. 17, above Poupart's ligament. Drainage-tube inserted.	This case did well till the Christmas holidays, when putrefaction seems to have occurred. After that time there was profuse purulent discharge, though for the most part odourless. The child was getting thinner and weaker, and the parents wished to take her home.
Opened, 39 oz. of pus evacuated containing pieces of bone.	All through the case there was great difficulty in getting free drainage, and consequently there was an unusual amount of discharge, the case requiring dressing about every second day. Latterly the patient suffered severe pain in the thigh, leg, and back, with constant vomiting. On post-mortem examination the lumbar vertebrae were found to be completely disorganised, cavities containing cheesy material being found in the bodies, transverse and spinous processes of the vertebrae. The bodies of two vertebrae were absent. The liver, spleen, kidneys, and intestines were in a state of waxy degeneration. For T. Chart just before death, see No. LIII.

## PSOAS AND

No.	Name and Age	Date of Operation and Discharge; with Result	Disease
22	Ellen S., 32 . .	<i>Op.</i> , Nov. 14, 1875. <i>Dis.</i> , Feb. 3, 1876. <i>Result</i> , cured.	Large lumbar abscess. Curvature of the spine.
23	John D., 18 . .	<i>Op.</i> , March 22, 1876. <i>Dis.</i> , March, 1878. <i>Result</i> , cured.	Psoas abscess pointing in the left groin. Curvature of the spine. Patient had been ill for a year. He was in an extremely weak and emaciated state. At a later period an abscess formed in the right thigh.
24	John D., 24 . .	<i>Op.</i> , April 4, 1876. <i>Died</i> , Oct. 2, " The cause of death was phthisis.	Psoas abscess. Curvature of the spine in the lumbar region. Patient was very weak, and had advanced phthisis.
25	Eliza T., 19 . .	<i>Op.</i> , Aug. 1, 1876. <i>Dis.</i> , July 1880. <i>Result</i> , cured.	Admitted with a psoas abscess on the left side, which had not yet reached the thigh. Great tenderness and curvature of the spine in the lumbar region. At a later period a psoas abscess formed on the other side and also a lumbar abscess.
26	Helen E., 50 . .	<i>Op.</i> , Nov. 16, 1876. <i>Dis.</i> , Sept. 4, 1877. <i>Result</i> , cured.	Patient injured her back a year before admission. It had been very weak and painful ever since, and when admitted there was a psoas abscess pointing in the thigh. Patient was very weak.

LUMBAR ABSCESSSES (*continued*).

Treatment	Remarks
Opened. Drainage-tube inserted.	Aseptic course. Healed November 20, 1876. (See T. Chart LVI.)
Abscess opened above Poupart's ligament. Drainage-tube inserted.	The psoas abscess went on very well. A large abscess formed in the other thigh, and was opened on February 11. The patient was removed to a private house in October 1877, and placed under Dr. Bishop's care. Dr. Bishop writes as follows in the <i>British Medical Journal</i> for January 31, 1880: 'John D., healed in March 1878. Left Edinburgh in May. When last heard of he was able to walk without support, and was feeling quite strong.' (For T. Chart for some days after the second abscess was opened, see No. LIV.)
Opened above Poupart's ligament. Pieces of bone escaped with the pus. Drainage-tube inserted.	The discharge seems to have remained aseptic, though latterly it increased somewhat in amount, necessitating a change of dressings every two or three days. His cough got worse, he became weaker, and died of phthisis.
Opened above Poupart's ligament, 20 oz of pus evacuated. Drainage-tube inserted.	Aseptic course, but the case was extremely tedious. A psoas abscess formed on the right side, and was opened on January 16, 1878. In March, after a gymnastic performance in her bed, she felt great pain in her back, and a lumbar abscess formed and was opened on April 17, 1878; bare bone was felt by the finger. The case went on with almost no discharge, the dressings being changed only once a week, till August 1879, when the first sinus healed. In the beginning of October this opened up again. On November 22 the right psoas abscess was found healed, and on December 27, the lumbar abscess had healed. Although the original sinus had not yet healed, the patient was allowed to get up in February 1880. This sinus healed in June 1880, and the patient went home in the beginning of July. During the whole time the patient had been in good health, and her rosy cheeks (not hectic) and appearance of perfect health rendered it difficult to persuade any one that she was suffering from disease of the spine with two psoas and one lumbar abscess. (See T. Chart LVII. taken at the time when the second abscess was opened.)
Abscess opened above Poupart's ligament, 18½ oz. of pus evacuated. Drainage-tube inserted.	Aseptic course. Healed July 5, 1877. Before her discharge she was able to walk about. (See T. Chart LVIII.)