most, 15 per cent. of the total number of the cases." But I can readily understand that when Mr. Tobin was reading up the subject this estimate escaped his notice.

5. Mr. Tobin states that there is reason to believe that section has a beneficial effect on tuberculous bone. "How often," he remarks, "in resections of the knee, do we put together bones much rarefied and otherwise affected by tuberculous disease, and find that they unite firmly and remain sound." But is it a fact that in early tuberculosis of the hip-joint the shaft of the femur below the trochanters is involved in the disease? Is not the bone at this level almost invariably healthy? Mr. Tobin's view that section has a beneficial effect on tuberculous bone is so novel, and the evidence he adduces in proof of it is at first sight so remarkable, that I am sure surgeons who have a turn for pathology would be interested to hear something more on the subject.

6. In conclusion, it seems desirable that Mr. Tobin should mention specifically the works on general surgery in which the plates show the "weight as applied to the limb in its normal instead of its abnormal position," so that in future editions this error may be corrected. As the case stands there appear to be authors whose plates are inconsistent with their letterpress. But who are they?

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, April 24th, May 29th. ² It is notable that while the other joints when diseased assume undesirable positions, the shoulder undergoes no deformity even in far advanced disease. ³ *Clin. Soc. Trans.*, vol. XIV, 1881. ⁴ *Disease of Joints*, 1897, p. 402.

TWO CASES OF TUBERCULOUS DISEASE OF THE KNEE-JOINT TREATED BY IODOFORM INJECTIONS: RECOVERY.

By EDWARD B. HOLWELL, L.R.C.P.ED., M.R.C.S.ENG.,
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CASE I. *Tuberculosis of Knee in a Man aged 25 Years.*—H. L., aged 13 years, a tall, overgrown youth, with very pink and white complexion and red hair, came to me on May 1st, 1885, with an oblong swelling at the inner side of the right knee; it extended upwards and outwards for $3\frac{1}{2}$ above and $1\frac{1}{2}$ inch below the patella; pain complained of over inner condyle. He first noticed the enlargement in February of the same year; there was no history of an injury. He was ordered rest.

On June 10th the tumour was much the same but now presented distinct fluctuation. Under ether, and using the carbolic steam spray, I made a free incision, got 4 ounces of pus and a quantity of partially organised lymph from the abscess, and having thoroughly cleaned out the cavity dressed with McGill's salicylate silk waste and iodoform and put on a back splint, I could find no communication with the joint. The wound soon healed, but the joint never quite recovered its natural size.

On April 12th, 1896, the patient, now aged 24 years, came to consult me for a discharging sinus at the inner side of the right knee, and complained of pain on movement of joint, and as his work necessitated an amount of kneeling it caused him great inconvenience, and he was unable to walk with any degree of comfort. On passing a probe for $\frac{1}{2}$ inch I found the sinus divided into two passages, one upwards and outwards above the patella, and the other upwards and inwards towards the flexor tendons. I was unable to find any communication either with the former suppurating cavity or with the joint. The knee was enlarged and had lost its natural contour, and was also cedematous.

On April 14th, ether having been administered, I opened up the sinuses as far as they were superficial, and having scraped away all diseased tissue, packed them with iodoform and gauze. They were four months in healing up. Shortly afterwards two small points broke out, discharging a thin-looking pus; they continually healed up only to open and again discharge.

On January 26th, 1897, the knee presented a very enlarged, rounded appearance, all the natural points of the joint having disappeared and bulged towards the outer side, the patella being displaced outwards. There was distinct fluctuation of a pulpy character. The patient complained of severe pain

on any joint movement, and could neither fully flex nor extend the leg; altogether it was now a typical tuberculous joint. In consultation with Mr. W. H. Brown, we agreed that before I proceeded to excise the joint (which we warned the patient might even be necessary) to give a trial to injection of iodoform and glycerine.

On January 28th, having drawn off five ounces ($\frac{3}{4}$ v) of slightly clouded synovial fluid by aspiration, I injected through the same cannula 2 drachms of glycerine and iodoform; this was followed by great pain and swelling the same evening.

On January 29th the knee was much distended and very hot but there was no increase of temperature.

Ten days afterwards (February 6th), the knee having recovered its former size, I again operated, but only obtained 1 ounce of synovial fluid, coloured and smelling strongly of iodoform. I injected 2 drachms as before. The same night there was great pain and swelling but no increase of temperature.

The third aspiration was performed on February 14th, removing 2 drachms of stained fluid. I injected 2 drachms of glycerine and iodoform. The joint looked much healthier and felt much firmer. This time there was hardly any swelling afterwards nor pain.

On February 23rd 2 drachms of stained synovial fluid were removed, and I injected 2 drachms. This was not followed by pain nor swelling until next day, when there was very little swelling.

The fifth injection was made on March 3rd. I had great difficulty in getting into the joint, the knee being so much firmer and knit together. This injection was followed by no pain or swelling.

On March 21st, the sixth injection, for the first time there was no fluid in the joint. The knee was very much smaller.

On March 29th, the seventh injection, I had difficulty in injecting only 1 drachm of fluid.

On April 15th, the eighth injection, I injected again 1 drachm.

On April 30th, the ninth injection, I was only able to get $\frac{1}{2}$ drachm into the knee, and I believe it was only into the crack of the trocar. He could walk a short distance without difficulty or pain. The joint was nearly its natural size, but there was slight stiffness.

On May 26th, eighty-eight days after the first injection, the patient walked nearly two miles and felt no worse afterwards. There was very little difference in the size of the two knees. He only complained of slight stiffness, and informed me that his knee felt stronger and more to be relied upon than for several years. In this case, although I injected nine times, I believe the last three were unnecessary, though the great difficulty is to know when our object is attained. There is no doubt that a few years ago, before the present treatment was known, this knee-joint would undoubtedly have been excised, if not amputated.

June 26th. He has now returned to his work, at least has my sanction to do so.

CASE II. *Tuberculosis of Knee in Child aged 8 Months.*—M. K., a Jewish child, aged 8 months, a sickly, puny infant, came to the out-patient department of the Leeds Public Dispensary March 5th, 1896. The right knee was greatly enlarged, pulpy, and with nearly all shape of the joint lost, presenting a barrel-like appearance, and flexed almost at a right angle, and a white cheesy colour. There were two discharging sinuses, one at the outer side passing upwards and inwards, the other extending completely across the joint, probably, however, extra-articular. Under chloroform I dilated the sinuses, thoroughly scraped them out, and having inserted two drainage tubes, put on a back splint and dressed with gauze, iodoform, and wool.

On April 2nd the knee was larger and the joint full of pus, and felt on movement to be entirely disintegrated. Under chloroform I made a free incision into the joint from the outer side, and a counter incision at the inner side. The joint was washed out with corrosive sublimate solution 1 in 2,000 and a drainage tube carried across the joint from one incision to the other. It was dressed with gauze, iodoform, and wool, and put on back splint.

On April 14th the knee was much smaller and firmer, and the child generally improved in health. The drainage tube was taken out, and the knee dressed as before.

On May 7th the discharge had ceased and the incisions healed, but there was severe superficial dermatitis. The knee could not be flexed beyond a right angle, and that caused pain, which made me still suspect mischief in the joint.

On November 26th, 1896, the child was again brought to me. The knee was very hot and inflamed, and there was doubtful fluctuation. In a month's time, having got things quiet, I applied a pot leg, and lost sight of the case till March 1st, 1897, when, on removing the plaster, the knee, with the exception of the discharging sinuses, appeared as bad as ever. There was considerable swelling, redness, and oedema. The exploring needle found no pus, however. There was also severe dermatitis, and the skin was in a filthy discharging state. The limb was put on a back splint, and I ordered hot fomentations every four hours.

On March 18th, the skin having now become quite clean and healthy, and all other treatment failing, I injected glycerine 3j, holding gr. 7½ of iodoform in suspension.

On March 25th the knee was much improved, smaller, firmer, and could be moved. I injected again 3j of glycerine and iodoform.

On April 1st the knee was much smaller and firmer. The child now voluntarily moved the joint, which was injected for the third time. I had great difficulty in entering the joint, and could only inject 3ss, and most of this I believe was left in the track of the needle.

On April 8th I endeavoured to inject for the fourth time, but was unable. The child crawled about, which it had not done for thirteen months.

On June 22nd no signs of disease could be seen or felt. The shape of the knee was quite normal, and the child moved about as well as any child of 2 years old can do. In this case, it was a very long time before the parents would allow active measures. As the notes show, prolonged and systematic treatment had been unsuccessfully tried. The rapid improvement, and if one might say cure, under the iodoform injection is therefore very significant, and in future I shall never condemn any joint, no matter how much it may be destroyed, till I have tried what iodoform injections will do; for in both of these cases here reported I had little hope of saving the joint, and movement I never thought to obtain.

REMARKS ON FOUR CASES OF HYDATIDS OF THE LIVER.

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A MAN, aged 36, came under my care in November, 1895. He stated that he had observed a swelling over his stomach five years previously. This had been repeatedly aspirated at a neighbouring hospital, but always rapidly refilled. He had been able to follow his trade until three weeks previously when he began to be feverish and to lose strength. Examination revealed a fluctuating tumour with the "hydatid thrill" over the left side of the epigastrium. It was intimately adherent to the abdominal wall; and on incising it half a pint of pus with numerous hydatid cysts escaped. He continued ill after the operation, and a few days later a larger swelling could be made out over the liver to the right of the middle line. This in turn was incised, and gave exit to a quart of pus containing several hundred small cysts. He now for a time improved, and then began to have evening pyrexia with rigors, followed by profuse sweating. As the two cysts already evacuated were well drained it was evident that the mischief must be elsewhere. By introducing a finger into the second cyst cavity and tapping over the right side of the liver deep fluctuation could be elicited. The suppurating cyst, which we judged it to be, was, however, too deeply placed to be readily reached from the surface, and besides to have attempted its evacuation in this way would almost necessarily have involved opening the peritoneal cavity. For these reasons I determined to open it through the second cyst cavity, and was successful in doing so. The third tumour proved to be the largest of the three, and, like the others, contained pus and an enormous number of cysts. For several days the patient remained in a highly critical condition, but

eventually made a good recovery. The discharge from the third cyst cavity for a time was mixed with much bile.

Judging from the progress of the case, it is probable that the operation on the first cyst induced suppuration in the second, and that in turn in the third cyst. The complete return to good health, notwithstanding the enormous amount of disturbance to the liver is the most noteworthy point in the case.

The second case was that of a boy, aged 17 years, who came to me in June last with an oblong tumour of the size of a cocoanut, situated in the mesial line behind the anterior abdominal wall. It had been observed for some time by my colleague, Dr. Burgess, and, as it was growing rapidly, it was decided to explore it and if possible to take it away. On opening the abdomen the tumour was found to be of a dark red colour, and adherent in many places to the intestines and omentum. On separating the adhesions, it could be traced upwards to the back part of the under surface of the left lobe of the liver, from which it sprang by a pedicle 2 inches in diameter. As yet the true nature of the tumour had not been made out, but those of us present at the operation feared we had to deal with a malignant tumour. Acting on this fear, I excised the portion of the liver from which it originated. In order to control hæmorrhage the liver around the tumour was divided in sections, about three-quarters of an inch at a time. Each section was at once secured by a thick silk ligature passed through the entire depth of the liver, from the upper to the under surface and again back to the upper surface, parallel with and a quarter of an inch distant from the cut surface. Six of these sutures were inserted, and they served admirably the purpose for which they were intended. During section of the liver and the insertion of the sutures hæmorrhage was stayed by firm pressure between the thumb and fingers. The lad made a very rapid and complete recovery, and seems to be none the worse for the loss of a considerable portion of his liver. The tumour proved to be a tense, suppurating hydatid, and from it beautiful specimens of living scolices were procured.

In discussing the differential diagnosis previous to operation, the question of "hydatids" had been carefully considered; but the absence of a definite history of the growth having started from above, and the fact that it did not rise and fall during respiration, seemed to militate against its being a hepatic hydatid. Another noteworthy point in the case was the entire absence of evening pyrexia, which is so commonly associated with suppurating cysts.

The third case was that of a woman, aged 38 years, who when I first saw her was in a most wretched condition. For several weeks she had been coughing up large quantities of offensive bile-stained pus containing hydatids. She was very feeble, pulse 130, evening temperature 103° F.; had profuse night sweats, and was slightly jaundiced. She was quite unable to sleep, or even to lie down, on account of a hacking cough. The back of the right lung was consolidated as high as the spine of the scapula. The diagnosis of a suppurating hydatid cyst discharging through the right lung was of course self-evident. After carefully considering how best to drain the cyst, I decided to make the attempt through the lower part of the pleura, which it was judged would be obliterated by the preceding inflammatory exudation. In order to allow the left lung full play during the operation, the woman was placed on the edge of the table in the right semi-prone position. This position allowed of free access to the back of the right lung. A 3-inch flap of skin and muscle was raised over the ninth and tenth ribs, just outside their angles, and two inches of each of these ribs were removed. The costal pleura was carefully divided immediately below the inferior margin of the hepatized lung, and, as we anticipated, was adherent to the diaphragmatic pleura. A long, sharp-pointed bistoury was now thrust through the diaphragm into the liver, and after passing through a thin layer of that viscus it entered the abscess. The wound was cautiously enlarged, and the contents of the cyst, consisting of about a quart of pus, with numerous hydatids, removed with a blunt flushing scoop. With the finger in the empty cyst one could feel the opening through the diaphragm into the lung. After introducing some iodoform a large drain tube was inserted, and the skin flap partly adjusted. She bore the operation well,