

on after an attack of fever, about a month ago. The joint was not much swollen nor flexed, but the pain was very severe, especially at night. She had no fever at the time of admission.

It was at first hoped that the inflammation would subside under rest, and this happened to a certain extent, but on the 22nd she had an attack of fever, which made the joint worse. It became more swollen and the fluctuation more distinct. The joint was aspirated on the 28th, and about 2 oz. of turbid fluid evacuated. On examining the fluid under the microscope a few pus corpuscles were visible. The operation was followed by marked relief and subsidence of the inflammation; but the joint still remained swollen, and slightly painful on pressure. The pain subsided gradually, and the swelling, which was due entirely to the inflammatory exudation outside the joint, disappeared under a single application of biniodide of mercury ointment (gr. xv. to 1 oz. of simple ointment). The patient was discharged on the 30th of June 1876, with a perfectly sound joint.

3. J. N. Talapatra, aged 12, was admitted, on the 26th of April 1876, suffering from synovitis of the left knee-joint, which came on only 12 days before, after exposure to cold. He consulted a medical practitioner, who first prescribed tinct. of iodine to be applied over the joint, and afterwards 3 blisters in succession over the knee; but, finding no relief, he came into the hospital. The knee was flexed at an obtuse angle. It was very tense, painful, and hot; bowels irregular; temperature 100° F.

The joint was aspirated and 6 ozs. of clear synovial fluid were evacuated. The limb was put on a straight posterior splint and ice applied over the joint. The relief was instantaneous. The fluid did not collect any more, and the patient was discharged, perfectly cured, on the 26th of June 1876.

4. B. C. Banerjee, aged 23, was admitted on the 3rd of May 1876 for synovitis of the left knee. He had been suffering from rheumatic pains in almost all the joints, during the last 12 months. About a fortnight before admission his left knee became swollen, hot and painful.

The joint was aspirated on the following morning, and 5 ounces of clear synovial fluid withdrawn. The operation had to be repeated again on the 15th, and about 4 ounces of fluid were evacuated. Perfect rest on a splint, and cold applications completed the cure, and the patient was discharged on the 1st July 1876.

5. S. P. Chatterjee, aged 25, was admitted on the 2nd of July 1876, suffering from gonorrhoeal rheumatism and synovitis of right knee. The joint was swollen, tender, hot and semi-flexed. The patient was also feverish.

The joint was aspirated, and 3 ounces of greenish coloured clear fluid were evacuated. The limb was straightened and put up on a Macintyre's splint, and ice was applied over the joint. On the following morning the joint was nearly as full as it was before; but the pain was slightly less. On the 5th, it was again aspirated, and 2 ozs. of synovial fluid withdrawn. The aspirator had to be used very often in this case, owing to the rapid accumulation of fluid. The aspiration was repeated on the 7th, 8th, 9th, 11th, and 12th, and 2, 2, 1, 1, and $\frac{1}{2}$ ounces of fluid were evacuated on each occasion respectively. The fluid became thicker as it lessened in quantity. The joint became quieter after the last aspiration, and all that remained was slight stiffness of the joint and swelling outside it. The patient was discharged on the 10th of October 1876 at his own request, (on account of some private business.) But, as the joint was not freely moveable, he was told to come back after his business was settled. The patient was re-admitted on the 25th November 1876. The joint was quite free from pain. The swelling had entirely disappeared. He could extend it completely, but could not flex it more than an angle of 90°. He was placed under chloroform, and the fibrous bands, between the head of the tibia and lower end of the femur, were broken by forcibly flexing and extending the joint. Ice was applied over the joint. The slight inflammation that was excited subsided under it, and the patient was discharged with a perfectly moveable joint on the 22nd of December 1876.

He came again two months after this. The joint was completely free from pain and the movements perfect. He could walk 10 miles a day without feeling the least inconvenience.

6. Kristolal, aged 30, was admitted on the 2nd July 1876, for traumatic synovitis of the right knee.

The joint was swollen, hot, painful and semiflexed. The patient was also feverish. Ice was applied over the joint, which

was also kept at rest on a splint. But, the tension becoming greater, it was aspirated on the 5th, and about an ounce of turbid fluid withdrawn. The patient made a rapid recovery, and was discharged cured on the 25th of July 1876.

7. Parbutty, aged 25, female labourer, was admitted on the 8th of September 1876, for synovitis of the right knee, which came on only eight days before, quite suddenly, accompanied with a slight attack of fever. She was also in an advanced stage of pregnancy.

The joint was very much swollen, painful and semi-flexed. It was aspirated on the 10th, and two ounces of turbid fluid withdrawn. The limb was straightened, and perfect rest maintained by putting it on a moulded guttapercha splint, and ice was applied over the joint. The pain and swelling diminished after the aspiration; but the symptoms gradually appeared again, and required the repetition of the aspiration on the 12th, and about an ounce of turbid fluid was evacuated. The aspirator had to be used again on the 17th and 18th, and one and a half ounce of clear synovial fluid were withdrawn on each occasion. The joint gradually assumed its natural size, and the patient was transferred into the obstetric ward, perfectly cured of her synovitis, on the 2nd of November 1876.

8. J., Christian, aged 45, was admitted on the 16th of March 1877, suffering from synovitis of the left knee-joint. The joint was not at all painful, nor was it flexed; but the swelling was very great and fluctuation distinct. The joint was aspirated the next morning, and 2 ozs. of turbid fluid were evacuated. Ice was applied. No splint was required in this case, for the limb was kept at rest between two sand bags. The fluid re-collected, and 3 ounces of it were removed again on the 19th; the joint went on filling up rapidly, and the aspiration had to be repeated almost every second day to keep pace with it, and the limb was put up on a splint; the number of times that the aspirator was used in this case amounted to eight; the last was on the 1st of April. The splint was removed on the 17th of May, and the patient discharged cured on the 7th of June 1877.

9. Nassavun, aged 40, maid servant, was admitted on the 20th of May 1877, suffering from synovitis of the left knee. The disease commenced with an attack of intermittent fever, about a month before her admission into the hospital. The joint was flexed at an angle of about 60°. It was swollen, but not very tense, and only slightly painful on pressure.

The joint was aspirated on the 23rd, and an ounce of clear synovial fluid removed. The limb was straightened and kept at rest on a splint, and cold was applied over the joint. No further interference was necessary. The inflammation subsided, the joint assumed its normal shape and size, and the patient was discharged, with a perfectly sound joint, on the 5th of July 1877.

10. A. Reynolds, aged 21, was admitted on the 18th of June 1877, for traumatic synovitis of the right knee-joint. He hurt his knee the day previous to his admission. On admission, the right knee was only a little swollen with slight marks of abrasion over it; but it was hot and painful. At first it was hoped to combat the inflammation by ice and rest; and, although the pain and heat greatly diminished, the collection of fluid became greater and greater every day. The joint was aspirated on the 27th, and 3 ozs. of synovial fluid, highly tinged with blood, were evacuated. No further collection occurred, and the patient was discharged cured on the 12th of July 1877.

GENERAL HOSPITAL, MADRAS.

CASE OF EXCISION OF THE KNEE-JOINT.

By JAS. J. L. RATTON, M.D.,

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I am indebted to Mr. C. Patch, clinical clerk, for the notes of the following case:—

History.—Ramasawny, a Hindu servant, aged 20 years, a strong and healthy looking young man, was admitted into the General Hospital, Madras, on the 16th of October 1877, with the following history:—Ten days previously, whilst chopping wood, he struck himself on the upper and outer aspect of the right knee-joint with an axe. The wound inflamed and suppurated, the knee grew hot and painful and enlarged, and the patient was advised to come to hospital.

Admission.—On admission, the right knee-joint was found to be two and a half inches larger than the left, hot, painful, tender on pressure, and very painful on motion. A sloughy suppurating wound, about an inch long, not communicating with the joint, was found about an inch above and external to the patella. Pulse 104; temperature 101° F.; tongue furred; bowels constipated.

Treatment.—The leg was confined to a back splint; the wound was syringed out with carbolic lotion, 1 in 40, and dressed antiseptically, twice daily. A calomel and jalap purge was given at once, and the following pill:—Quinine gr. ii, opium gr. ½, three times a day. Chloral gr. xx at bed time.

Progress.—The patient continued in much the same state for the next four days; the morning temperature, under the tongue, ranging from 99° to 99.8° F., and the evening temperature from 100.5° F. to 102° F. The wound looked cleaner, but pain and tension increased in the joint, and the slightest motion was attended with excessive pain.

On the 5th morning after admission, the temperature rose to 101.5° F., and the patient fainted from excess of pain when the wound was dressed. Suspecting from the first that the traumatic synovitis was leading to suppuration within the joint, I now explored the inner side of the joint with a fine trocar and canula, which gave vent to a purulent fluid. An incision was then made on the inner side of the joint, the wound on the outer side was prolonged into the joint, and a cotton wick "drainage tube" was passed from one side to the other. I ordered the joint to be syringed out with carbolic lotion and dressed antiseptically morning and evening, crushed ice to be constantly applied over the dressings. Quinine, opium and chloral to be continued.

Progress.—From this point the patient steadily got worse; the temperature on the evening of the operation ran up to 104° F., and on the four subsequent evenings ranged from 102° to 103.5° F. The morning temperature kept at about 101° F. The patient was delirious at nights; the pain in the joint was very severe, and rendered agonising by the least motion; his appetite failed; he lost flesh rapidly; and his spirits were excessively depressed. On examining the joint with the finger on the 25th October, the synovial membrane was found to be in a pulpy, gangrenous condition, and the discharge was most offensive.

Consultation.—I now consulted with my colleagues, Surgeon-Major Furnell, M.D., F.R.C.S., and Surgeon Beaufort, M.B., on the propriety of excising the joint, and they agreed with me in thinking the case a fair one for excision. The man could not possibly live through the process of ankylosis with suppuration. I therefore excised the knee-joint on the 25th October, 19 days after the original injury, and five days after the joint had been freely incised.

Operation.—I need not describe the operation further than to say that Esmarch's bandage was first applied; carbolic lotion was freely poured over the incisions, &c., during the operation; a thin layer of bone, short of the epiphysis, was removed with the cartilages from the femur and tibia; the patella was not removed; the incision was the ordinary, single horse shoe cut; hæmorrhage was arrested by torsion; and the wound was washed with chloride of zinc solution and afterwards with carbolic lotion.

Adjustment.—Before bringing the flap down, the limb was adjusted, under chloroform, on a straight McIntyre's splint, with fixed foot piece, which had been previously measured to the parts. A bracketed Liston's long splint was applied on the outer side. Pads were arranged under the tibia to keep it up, and over the femur, to keep it down, and when the bones were in good apposition, the whole apparatus was firmly bound together with strapping.

The flaps were then united with 5 points of silver wire suture, and the wound was dressed antiseptically. Surgeon Beaufort aided me well during the operation. The following mixture was ordered after the operation, and continued for some days:

Sulphurous Acid	...	...	ʒ xx
Quinæ Sulph.	...	...	gr. iii
Liq. Morphine	...	...	ʒ ss
Water	...	...	ʒi ter in die.

As the patient was very restless after the operation, ʒrd grain of morphia was given hypodermically.

26th October.—As the knee was very hot and painful, the dressings were removed, and the wound was irrigated with iced carbolic lotion. This irrigation was kept up day and night for ten days.

Progress.—The patient was for the first few days very restless and irritable; appetite poor. Milk, beef tea, and stimulants were pressed, and chloral was given at bed time. On the 27th October, the temperature ran up to 104° F., but from that day it fell gradually and touched normal on the 4th of November, 9 days after the operation. From thenceforward it remained at about normal.

Complications.—On the 31st October patient's right arm became very painful and tender, and he quite lost the use of it. The irrigation had got up the bed, and caused a chill and partial inflammation of the cord. With the avoidance of damp the hypodermic injection of morphia, and flannel bandages, the arm completely recovered in three days. On the 3rd of November, the irrigations were stopped, and antiseptic injections and dressings were used instead. On the 6th of November a large bed sore, which had been threatening, formed over the sacrum. The patient had been hitherto kept on a canvas fracture bed for the sake of immobility. He was now placed on an air bed, and the bed sore was dressed in the ordinary way. About this time his medicine was changed to Quinæ et Ferri Citras gr. v. ter in die, Quinæ gr. ii, Opii gr. ½, morning and evening, and chloral as usual at bed time.

Progress.—The patient continued to improve in general health and spirits daily. The knee rapidly diminished in size, and the discharge decreased. On the 16th November, the wound was dressed with simple dressing.

19th November.—The last silver wire suture was, this day, removed. The patient is taking large quantities of nourishment, and 6 ounces of port wine, daily.

1st December.—The incision has completely healed, and no further dressings are applied to the knee.

Christmas Day.—On this day, exactly two months after the operation, the splints were removed, and the leg put up in a starch bandage, extending from the toes to the groin.

1st January 1878.—Patient was allowed to get up, and move about on crutches.

1st February.—The starch bandage was removed, and patient walked comfortably with one crutch.

Discharged, 20th February.—Patient walks with the aid of a walking stick. The right leg is 1½ inches shorter than the left. He feels no pain in the knee. Can walk without a walking stick, but with a sense of insecurity. General health excellent. Discharged with the admonition not to fatigue the leg for three months to come.

Remarks.—Doubtless, the rule in cases such as this is to amputate. Excision is seldom practised in the knee-joint for acute inflammatory mischief. But European surgeons are our guides in this matter, whilst European conditions do not obtain in India. The people, the climate, the food, the hospital buildings—all differ. I need not dwell on these points in the *Indian Medical Gazette*, but I must mention another matter which influenced me strongly, so strongly, that I would always excise the knee-joint in preference to amputating, if I had the choice, in the case of a healthy pauper, under 40 years of age. It is this, that amputation practically condemns a homeless cooly to die a lingering death from starvation and neglect. Whereas, excision enables him to support himself and to live. Of the truth of this statement I am persuaded from inquiry and observation in Madras; and, if such be the case, it should have great weight in deciding surgeons in similar case. I do not claim for this case more than that it proves that a man may have his knee-joint excised for acute suppuration, and yet make a rapid recovery with a useful limb. One great difficulty in the after-treatment of the case was to combat the tendency of the irrigation and injections to slop the bed. India-rubber, oiled silk, tow, cotton wool, and collodion were all used in combination, but water would trickle over, or through, all obstacles, and soak the bed. With the experience of this case before me, I would in future treat an excision case on an air bed, sloping slightly towards the foot, so that water might trickle away from the trunk.

MADRAS, 2nd February 1878.

Army Medical Department.—We understand that the Medical Department of the Army is engaging the serious attention of the Secretary for War; and that a scheme will shortly be propounded, which, it is to be hoped, will remove the objections young men have to join.—*Medical Press and Circular.*