

TWO KNEE CASES.

SERIOUS INJURY TO JOINT WITH IDIOPATHIC EROSION OF
CARILLAGES; REPEATED ASPIRATION; RECOVERY.
FRACTURE OF PATELLA, TREATED BY SILVER
LIGATURE; RECOVERY.

By LEIGHTON KESTEVEN, M.R.C.S.

CASE 1.—At the Brisbane racecourse on Nov. 10th, 1883, J. W.—, squatter, riding his own horse in a Corinthian race, having the inside running, at the turn for home in a hot finish brought his knee in contact with the distance post. So great was the concussion that the post—which was six inches in diameter—was snapped off at the ground. His leg was thrown backwards over the horse's rump, and he was nearly unseated, but managed to recover and get his leg over again, and rode in fourth or fifth at the winning-post. He was lifted off his horse and taken to the jockeys' room, where I saw him within five minutes of the accident. The leg was very much swollen, and the knee appeared to have received serious injury. He was at once conveyed into town and I attended him at his hotel. On examination I came to the conclusion that there was no fracture, nor any extensive laceration of the ligaments; but that the synovial membrane was lacerated, and most probably the semilunar cartilages displaced, as he was in extreme pain, and the joint was evidently filling fast with fluid. Three hours later the knee was greatly distended, the synovial sac bulging on each side above the patella, and the patella floating. On pressing it down on to the condyles (which, owing to the great distension could with difficulty be done) a grating sensation was communicated of rough surfaces, indicating that the forcible impact of the patella on the condyles had denuded the apposed surfaces of both of some amount of their cartilage. The calf of the leg was bruised from the knee to the ankle, and distended with effused blood; cold cloths and ice were applied, and morphia administered hypodermically and by mouth.

Next day (11th), under chloroform, I opened the calf of the leg (using eucalyptus spray) by an incision four inches in length, and removed about ten ounces of clotted blood from a hematoma formed by the sheathes of the muscles, washed out the wound with ice-cold carbolic lotion, stitched it up, covered it with boracic lint, and bandaged as tightly as I thought safe. I then aspirated the knee joint, and removed twelve ounces of what appeared to be almost pure blood, giving great and immediate relief to the patient. The leg was then put up on pillows, steadied with sandbags, and cold irrigation applied to the knee. The fluid drawn off on being examined under the microscope proved to be nearly pure blood, and contained tessellated epithelium and cartilage cells. It clotted shortly after exposure to air. The general constitutional disturbance was severe; he had passed a very bad night, and had been awakened each time he dozed off by jumping pains in the knee. The grating could be very easily felt on rolling the patella on the condyles after the fluid had been removed. The temperature was 104°F.; pulse 120; skin hot and dry. A mixture was ordered of opium, aconite, and acetate of ammonia in camphor water. A medical man called in consultation by the patient's friends considered the injuries too severe to admit of saving the leg, and recommended immediate amputation.

13th.—Two other medical men, in consultation, in view of the palpably serious nature of the injury to the cartilage of the joint, recommended that the leg should be put on a long splint, to obtain ankylosis of the knee joint, as the only means of saving the leg. This advice I declined to act on, and, taking the responsibility myself, I put it on a McIntyre's splint, flexed, and applied ice-bags to the joint, slightly altering the angle—i.e., increasing or diminishing the flexion—three or four times daily. The pain is very severe, especially the spasms at night, and the joint very tender on pressure. Temperature 103.4°; pulse 110. Not much pain in calf, which has not been disturbed.

14th.—The knee appears as much distended as on the 11th. Pain intense; temperature 103°. Aspirated, removing thirteen ounces of dark-red fluid, which examination shows to be sero-sanguineous with tessellated epithelium, but no trace of pus corpuscles. Great relief of pain.

15th.—Temperature 102.5°; pulse 96. Passed a better night and had about five hours' sleep.

18th.—Had a severe rigor this morning; and though the knee was not so distended or painful and the temperature was not raised, I considered it advisable to aspirate for

diagnostic purposes, and drew off eight ounces of fluid, red, but lighter than the last. No trace of pus; fewer epithelia. Carbonate of ammonia, iodide of potassium, and bark ordered, and six ounces of whisky daily.

22nd.—Temperature 99°; pulse 80. Very little fluid accumulating. Wound in calf undressed, first time since the operation; quite healed by first intention.

25th.—Increase of pain in knee: passed a bad night, with jumping pain. Temperature 102°; pulse 100 and rather hard. Patient flushed and irritable. Aspirated, getting only two ounces of clear, serous fluid; no pus cells. Extract of belladonna ordered to knee. Previous mixture repeated.

26th.—Temperature 99.8°; pulse 92. Flushing and irritability disappeared. Pain much less.

Dec. 2nd.—Temperature and pulse normal. Applied oleate of mercury to knee. Grating sensation plain. Carbonate of ammonia and iodide mixture reordered.

12th.—Very much improved in general health, appetite good, and bowels regular. Very little tenderness on pressure on knee. Grating still perceptible, but less; no jumping pain, only aches slightly at night. Joint painted daily with tincture of iodine.

25th.—Convalescing rapidly. Pain quite gone. No swelling or signs of effusion, but tenderness on putting foot to ground. Grating almost inaudible. Splint taken off, and the leg put into Sayre's plaster-of-Paris bandages from hip to ankle.

30th.—Left for home. In plaster-of-Paris, and on crutches. Very little tenderness on standing; no grating perceptible.

He had the bandages off a fortnight after this, and was getting about freely a month afterwards. No stiffness was left in the knee, and he says that that leg is as sound and reliable as the other.

Remarks.—In summarising the points of this case I would give the reasons of my diagnosis and treatment. The hæmorrhage into the joint might have proceeded from lacerations of the capsular ligaments, but from the tension, the peculiar defined shape of the swelling, and the constant presence of tessellated epithelium and cartilage cells, I felt justified in locating its origin principally, if not entirely, in the erosion of cartilage and synovial membrane from the surfaces of the patella and condyles in contact. Besides which the grating was of too distinct a nature to be mistaken for anything but denuded bone, and too early a symptom to be taken for the crackling caused by organised bands of adhesions. The spasm and jumping pain during sleep are diagnostic of erosion or disintegration of cartilage, and the heat and tenderness of the joint and agony on movement of synovial mischief. The effusion being traumatic and so rapid and the pain of distension so great, I felt that early aspiration with careful 'antisepsis' was indicated as imperative: first, for the relief of pain, and, secondly, for the removal of what was evidently effused blood; and to the success in obtaining those objects, by relieving the pressure on the synovial membrane and removing a possible source of decomposition, I attribute the obviation of suppuration. The value of the microscopic examination of the effused fluid as a means of diagnosis and guide to treatment was most apparent, and enabled me to watch the processes going on inside the joint as plainly as if I had been able to see into it. The appearance of the leg the day after the accident was seemingly hopeless—cut, bruised, and black from the thigh to the ankle,—and yet by the aid of the microscope I was able to make a favourable prognosis from the beginning, and act on it, to the result of saving a joint which might have been sacrificed to expediency. My reasons for declining to adopt the suggestion of the straight splint to procure a stiff knee were the excellent general health of the patient and the continued absence of pus in the effused fluid. I therefore ordered the limb to be moved at intervals on the splint from the first to prevent the organisation of the effused fluid into fibrous adhesions, the position of flexion being adopted as affording the maximum amount of relaxation of the joint.

In a similar case, if of an asthenic type and ill-nourished, it might be necessary to obtain ankylosis to obviate further mischief in the joint; but I very much doubt if there are many cases so asthenic that careful nursing and nutrition would not pull through any such risks. With means of diagnosis so simple and practicable, if utilised with due care and precaution and in time, many a joint might be saved that is at present sacrificed to the plan of treatment by immobility.

CASE 2.—On the railway, near Brisbane, on Nov. 20th, 1884, J. R.—, aged twenty-four, signalman, slipped on the metals, and fell on his knee, fracturing his left patella. His right foot was a club-foot (talipes equinus) and very weak.

I had therefore no hesitation, in view of the very unreliable knee joint which a ligamentous union of the patella would give him (he being dependent on his own exertions for a livelihood), in deciding to ligature the fragments with silver wire. This I did on November 29th, under the eucalyptus spray. The bone drill snapped in one of the fragments, and I had hard work to get it out again. I hammered the ends of the wire into the patella. After ligaturing, the wound was stitched up, covered with a good pad of dry boric lint and oil silk, and bandaged. No drainage tube was put in. The temperature the following day was 99.5° F., and normal the day after, and continued so to the end. The wound was not undressed until Dec. 21st, twenty-two days after the operation, when the wound was found to be healed by first intention. Plaster-of-Paris bandages were then put on, and retained for three weeks. When removed, perfect union of the patella had taken place, and his leg was quite sound,

Some day I think of taking the wire out or nipping the end off it, as it irritates the skin over it.

Remarks.—This case is useful—1st, as showing the great benefits this operation confers, compared to the old plan of ligamentous union. With a weak foot on one leg and an unreliable knee on the other, this man would have been incapable of earning his living; 2nd, as another added to the long list of successful ligatures of the patella for simple fracture. I was induced to send these two cases to you by the interesting nature of the “Occasional Records in the Science and Practice of Surgery,” contributed to THE LANCET by Mr. Oliver Pemberton. The details of cases outside of hospital practice, treated by the operator himself throughout, with his reasons for such, may often very well be more interesting than the set notes by the surgical registrar or house-surgeon of another man’s case.

Brisbane, Queensland.

OSSEOUS UNION OF INTRA-CAPSULAR FRACTURE OF THE FEMUR.

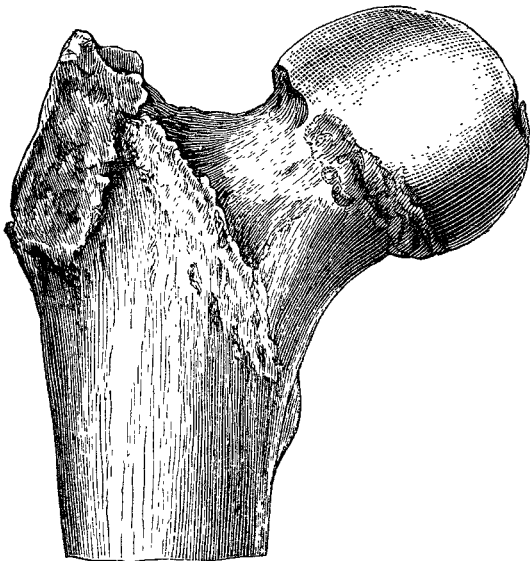
By THOMAS F. RAVEN, L.R.C.P. &c.

A WOMAN, aged sixty-nine, slipped and fell, and on examination presented the usual symptoms of fracture of the neck of the femur, without impaction. She was treated with a long splint, and no extension was made.

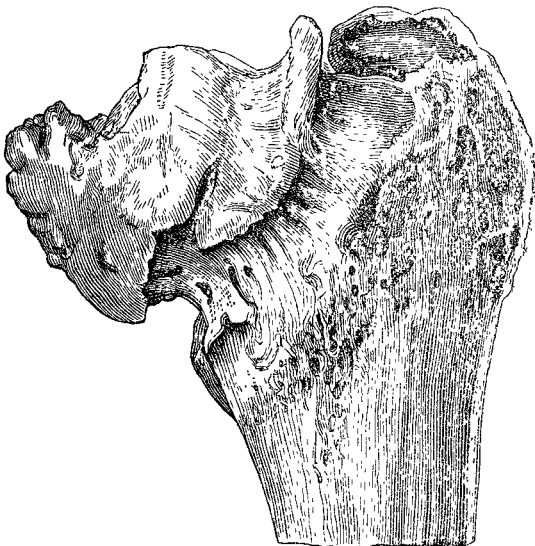
shaft. A short time ago she died, at the age of seventy-six, and I was enabled to secure the upper portion of each femur. The accompanying sketches, made with artistic fidelity by Mr. Arthur Trower, M.R.C.S., show how close to the head of the bone the fracture really was, and give a good idea of its complete bony union, and also of the contrast between the injured and uninjured bones, both in regard to the fracture itself and the resulting osteo-arthritis.

Sir James Paget tells me, after an inspection of the bones, that he does not remember to have seen so thorough a

Anterior Aspect.



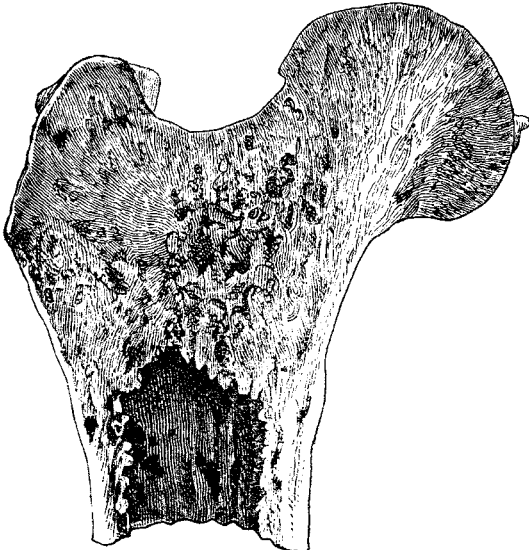
Right.



Left.

Bones removed from a woman, aged seventy-six years, who sustained a fracture of the neck of the left femur seven years previous to her death. The sketch shows strong bony union and erosions of the head of the bone from arthritis.

Sections.



Right.



Left

Her recovery was so rapid and she walked so well subsequently, although with a shortened limb, that I was inclined to doubt the accuracy of my diagnosis, and to suspect that the fracture had occurred high up in the repair of this kind of fracture, and by his advice I have presented the specimens to the Royal College of Surgeons, where they will be found in the Pathological Museum.

Broadstairs.