

THE CANADA LANCET.

A MONTHLY JOURNAL OF

MEDICAL AND SURGICAL SCIENCE,
CRITICISM AND NEWS.

Vol. XX.] TORONTO, MARCH, 1888. [No. 7.

Original Communications.

TWO CASES OF UN-UNITED FRACTURE.

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CASE I.—A. R., aged 18, single, a miner, was admitted into the Hospital, on the 31st August, suffering from an un-united fracture of the left humerus.

History obtained from Patient :

The patient while working at Spring Hill coal mines, jumped off a car in motion, a rope swinging around struck him on the left arm and knocked him insensible. When he recovered consciousness, he found he could not move his arm. A doctor was at once sent for, who diagnosed a fracture of the left humerus below the insertion of the deltoid muscle. The fracture was at once set, and the splints in which the arm was first put up were left undisturbed for nine weeks; they were then removed and the bones were found un-united. The arm was thereupon put up in plaster of Paris bandage, which was removed in eight weeks, and the fracture again found un-united. A consultation was then held, at which it was decided to slightly irritate the ends of the fragment by gently rubbing them together. This was done and the arm was put up in a plaster of Paris bandage for four or five weeks. When the splint was taken off, no union was found to have occurred. He then came to the hospital for treatment.

When admitted, patient was in very good health. The left humerus was found, on examination, fractured below the insertion of the deltoid, and the arm about one inch shorter than the other. He was unable to move his arm. A consultation of the medical staff was held on the 6th of Sept., at which it was decided to re-set the bones and

wire them. On the 8th of September I operated in the following way. The patient being etherized and an Esmarch applied, I washed the parts thoroughly with a carbolic solution, 1 in 40, and made an incision $3\frac{1}{2}$ inches in length over the seat of fracture, and in line with the outer border of the biceps and brachialis anticus muscles. On cutting through the integument and some areolar tissue, the cephalic vein was exposed and held to one side by an assistant. I then laid the border of the brachialis anticus muscle bare, and followed it down to the bone. The soft structures being now held well apart by two assistants, I laid open the periosteum and denuded the ends of the fragments. The ends of the bone being pushed through the wound, I removed a short piece from the end of each, at right angles with the axis of the shaft, and drilled a hole through each fragment from its periosteal surface, and brought their vivified surfaces together, and held the bones in position by silver wire. The hemorrhage was then checked and the wound washed with a carbolic acid solution, 1 in 40, and its edges were held in coaptation by catgut sutures, a drainage tube being first inserted. The arm was then put up in a rectangular splint, a trap being left over the wound to enable it to be dressed without disturbing the parts. It took over an hour and a half to perform the operation, which was done under a spray of carbolic acid, and with complete anti-septic precautions.

On the 10th of September, the 2nd day after the operation, the wound was dressed under the spray. It looked well; I removed the drainage tube and left it out; there was no discharge. On the 16th of September, the 8th day after the operation, the wound was again dressed under the spray, and the stitches were removed, union having taken place by first intention. On the 16th of October, when the splint was removed, good bony union was found to have taken place. The patient's temperature remained normal throughout.

On the 18th of November, as the patient was walking on the platform in front of the hospital, with his hands in his pant's pockets, his feet slipped and he fell heavily on his left side and re-fractured the humerus.

The arm was at once put up by the house surgeon on a rectangular splint, and left untouched