ISOLATED FRACTURE OF THE GREATER TUBEROSITY OF THE HUMERUS.*

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TRAUMATIC separation of the greater tuberosity of the humerus occasionally occurs as a complication of dislocation of the shoulder, when it may obstruct reduction, predispose to recurrence or lead to prolonged disability. Isolated fracture is considered very rare by the authorities; at least one doubts its existence. The more general use of the X-ray in shoulder injuries will doubtless show that this accident is less infrequent than has been supposed.

It is hoped that the two following observations may aid in clearing up the clinical picture, which is somewhat hazy in the standard works.

CASE I.—On August 16, 1903, a man 46 years old and weighing about 175 pounds, was pitched down three or four steps by the lurching of an ocean steamer, and landed squarely on the front of the tip of the left shoulder. There was total disability in abduction and rotation, soon followed by great swelling of the shoulder and arm and by a large ecchymosis on the outer aspect of the arm extending finally to the dorsum of the hand. The arm was examined about 15 hours later by the ship's surgeon, who found pain on rotation, tenderness over the outer part of the shoulder, but no crepitus and no dislocation; he regarded the injury as a severe contusion, and the arm was carried in a sling for the remainder of the trip with only moderate discomfort except for dressing and undressing, when assistance was required. There was no confinement to bed.

On landing in New York, August 22, 1903, Dr. Forbes Hawkes was consulted and a skiagram was taken, which showed

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FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

complete separation of the greater tuberosity with displacement upward and outward of about a quarter of an inch. The backward displacement which may have existed did not show in the plate. The shoulder and arm were placed in a plaster splint for two days, after which the sling was resumed.

The swelling and ecchymosis slowly disappeared, and without massage or special exercises the function of the shoulder was gradually resumed. A plate taken early in November, 1903, eleven weeks after the accident, showed the tuberosity abnormally prominent and bony union taking place (Fig. 1). About this time the function of the arm was fairly good, and soon after became entirely restored for all ordinary uses. At the present time the patient is conscious of no defect in strength or function, the hand can be placed behind the back and raised vertically above the head, though critical examination reveals some diminution of abduction and external rotation at the shoulder. A skiagram taken March 19, 1907, shows the trochanter-like prominence of the greater tuberosity, which can be easily palpated, and bony fusion with the shaft (Fig. 2).

Case II.—A stout lady, about 80 years old, on September 25, 1906, fell forward while going down stairs, striking an upright board with the outstretched left hand. There was shoulder disability and much swelling and ecchymosis of the outer and inner side of the arm, a surgeon was called in and a diagnosis of fracture of the upper end of the humerus was made. Ice was applied for a week, and on October 3 the arm and shoulder were put up in a starch bandage. This patient was first seen by the narrator on October 23, 1906, four weeks after the accident. There was a little active and more passive motion at the shoulder, but little abduction or external rotation.

There was tenderness and some prominence of the greater tuberosity, but no crepitus, and the head was in the glenoid cavity. There was much swelling about the shoulder and also about the arm above the elbow particularly on the inner side, and extensive ecchymosis on the outer side reaching below the elbow, and on the inner side to just above the elbow. A skiagram taken October 27, 1906, showed separation of the greater tuberosity of the left humerus with slight upward and outward displacement; backward displacement did not show in the anterior view; there was also a splinter of bone on the inner side of the humeral neck,

which possibly indicated a separation of the lesser tuberosity; union seemed to be taking place (Fig. 3). After a few days the starch splint was discontinued, and the arm supported by a bandage and later by a sling. The vibrator was used to the shoulder and arm muscles two or three times a week for several weeks. Strength and mobility of the shoulder gradually increased, and when the patient was last seen, February 19, 1907, she had very fair use of the arm, which could be abducted without scapular motion to about 60°, and rotated to about 50°. The hand could be raised high above the head, and with some difficulty placed behind the back. The plate taken February 13, 1907, shows prominence of the tuberosity with apparent bony union, and a bony nodule the size of a small pea on the inner side of the neck (Fig. 4).

From these two cases one may conclude that isolated traumatic separation of the greater tuberosity may occur from direct or indirect violence, that the displacement of the fragment may be upward, outward, and backward and very moderate in amount, that early disability at the shoulder, swelling and ecchymosis are prominent symptoms, that crepitus may be absent, that in uncomplicated cases with moderate displacement, splinting in abduction and external rotation, suturing, nailing, and confinement to bed, are unnecessary, that bony union occurs, and that recovery may be practically perfect without splints, massage or special movements.