

**A case of sub-coracoid dislocation of the humerus : with the formation of an indentation on the posterior surface of the head, the joint being unopened : with remarks on the mode of production of fracture of the anatomical neck, with dislocation / by Frederic S. Eve.**

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**Publication/Creation**

London : Printed by J.E. Adlard, 1880.

**Persistent URL**

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OF

SUB-CORACOID DISLOCATION OF THE  
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FORMATION OF AN INDENTATION ON THE POSTERIOR  
SURFACE OF THE HEAD, THE JOINT  
BEING UNOPENED;

WITH REMARKS ON THE MODE OF PRODUCTION OF FRACTURE  
OF THE ANATOMICAL NECK, WITH DISLOCATION.

BY

FREDERIC S. EVE, F.R.C.S.,

CURATOR OF THE MUSEUM, ST. BARTHOLOMEW'S HOSPITAL.

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Read May 11th, 1880.

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[*From Vol. LXIII of the 'Medico-Chirurgical Transactions,' published  
by the Royal Medical and Chirurgical Society of London.*]

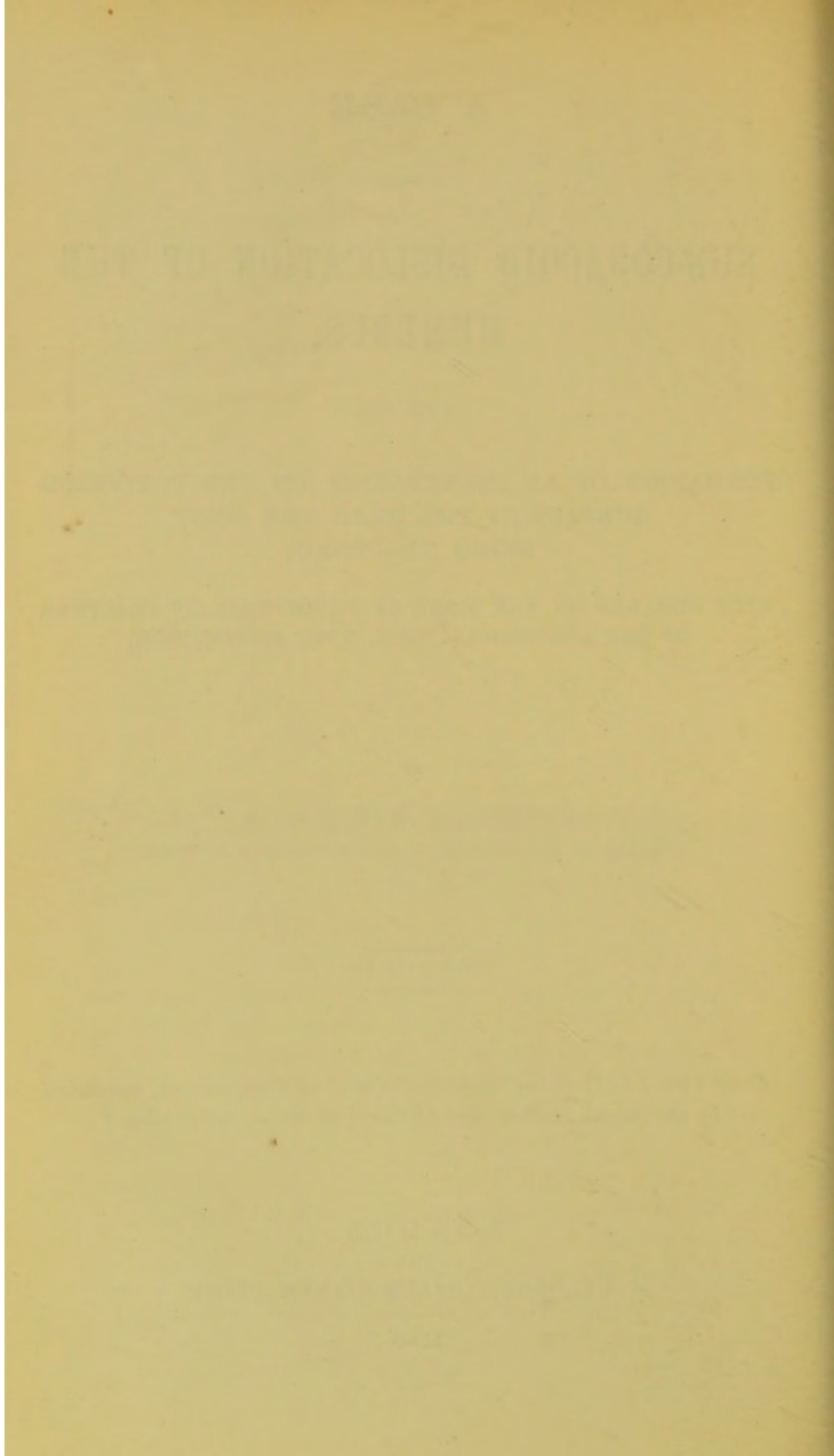
LONDON :

PRINTED BY

J. E. ADLARD, BARTHOLOMEW CLOSE.

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1880.



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(Received March 23rd—Read May 11th, 1880.)

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THOMAS B—, æt. 36, was knocked down by a train while at work on the line. He was admitted to St. Bartholomew's Hospital under the care of Mr. Holden, and was found to have sustained a sub-coracoid dislocation of the right humerus; the head of the bone was distinctly felt beneath the coracoid process, and the axis of the limb was directed considerably outwards and backwards.

The dislocation was extremely easily reduced by traction on the limb with the heel in the axilla.

The patient died twelve hours after the accident from injuries to the thorax.

*Dissection.*—The deltoid muscle was bruised, and the upper portion of its insertion separated from the bone. The muscles around the shoulder-joint were carefully dissected, but no laceration of their substance was observed; there was, however, some extravasation of blood beneath the subscapularis near the joint. On exposing the capsule it appeared quite uninjured.

On opening the joint it was observed that the capsule had been stripped off from the anterior border of the glenoid cavity, but had remained continuous with the periosteum, which was also detached to a small extent from the adjacent anterior surface of the scapula; the joint had not, therefore, been opened by the injury. On the posterior surface of the head of the humerus, at the margin of the articular cartilage, there was a deep vertical indentation or groove, into which the anterior margin of the glenoid cavity accurately fitted.

*Remarks.*—The dislocation appears to have been of the true sub-coracoid variety, as described by Professor Flower.<sup>1</sup> The bruising of the deltoid, and the mode of occurrence of the injury, indicate that the dislocation was produced by direct violence, that is, by a blow on the upper and outer part of the upper arm.

The condition of the capsule in this case appears to be entirely without precedent. I have been unable to find on record a single case of traumatic dislocation of the humerus, in which the joint was not opened.

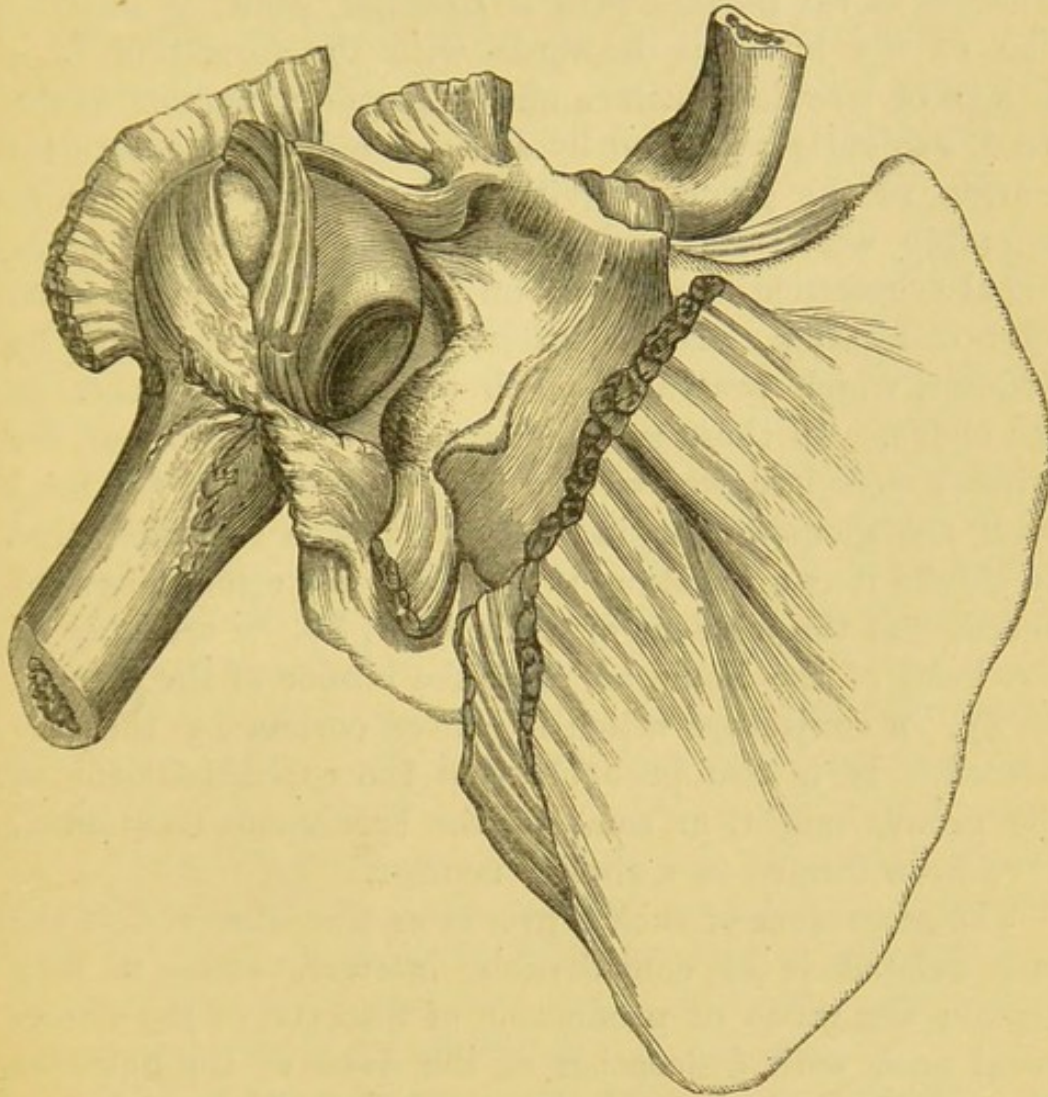
It cannot be ascribed to any abnormal change in the capsule, such as enlargement from distension or unusual elasticity, since room was made for the displaced head of the humerus by the detachment of the capsule and periosteum from the scapula, as described. The capsule and other tissues of the joint also appeared perfectly healthy.

The indentation or groove on the posterior surface of the head of the humerus is another unusual feature in the case.

From its position, shape, and the mode of occurrence of

<sup>1</sup> 'Holmes' System,' 2nd ed., vol. ii, p. 814.

the injury (presumably by direct violence), I conclude that the groove was produced by the forcible impact of the humerus against the anterior margin of the glenoid cavity.



Sub-coracoid dislocation of humerus reduced during life. The capsule was not lacerated, but was stripped up with the periosteum from the anterior margin of the glenoid cavity. A deep indentation is seen on the posterior surface of the head, produced by forcible impaction on the margin of the glenoid cavity. Specimen preserved in St. Bartholomew's Hospital Museum, No. 1019.

The formation of the groove partially accounts for the slight damage to the capsule, as the head of the bone, having lodged on the margin of the glenoid cavity, was thus prevented from passing further inwards on the surface of the scapula. The groove was situated at the extreme margin of the articular surface, showing that the head was entirely

separated from the glenoid cavity; the case cannot, therefore, be regarded as an instance of incomplete dislocation.

There are two dried specimens of shoulder-joints in the museum at St. Bartholomew's<sup>1</sup> Hospital, showing dislocation of the humerus forwards with the formation of a groove or trochlear surface on the posterior portion of the head, evidently produced by attrition against the anterior margin of the glenoid cavity, which has itself been considerably worn away. Malgaigne<sup>2</sup> has noticed the occasional occurrence of grooves on the head of the humerus after dislocation. He mentions two cases described by Sédillot, which presented much the same appearances as the above. In these specimens, as in the two former, the furrows were hollowed out by the movements of the head upon the glenoid margin, but Malgaigne remarks<sup>3</sup> that he thinks it is a question if they are not sometimes produced, "at the moment of dislocation, by the crushing of the head of the humerus upon the border of the glenoid cavity," a conjecture which is proved correct by the case related. It is also probable that the commencement of the groove might, in some of the specimens mentioned, have been formed in a similar manner.

The occurrence of such a groove as that observed in the case related is of considerable interest, since it may explain the mode of production of fracture of the anatomical neck with dislocation of the head of the humerus forwards. If the blow had been sufficiently forcible the head of the humerus would probably have been chipped off by the anterior margin of the glenoid cavity, instead of simply an indentation being produced by it, and the head would then have slipped inwards on the anterior surface of the scapula, with the articular surface directed forwards, as usually happens in cases of fracture of the anatomical neck with dislocation of the head. Such a condition is well known in a specimen<sup>4</sup> of fracture of the

<sup>1</sup> Sub-series C, 27, 34.

<sup>2</sup> 'Fractures et Luxations,' p. 496.

<sup>3</sup> Op. cit., p. 497.

<sup>4</sup> Specimen shown. Sub-series C, No. 103.

anatomical neck with dislocation, in the museum of St. Bartholomew's Hospital, also by Sir Astley Cooper's specimen in St. Thomas's Hospital Museum, in which the parts are dried *in situ*.

Further, the mode of production of the hitherto unaccountable cases of impacted fracture of the anatomical neck may, perhaps, *in some instances*, be explained in a similar manner. If the posterior surface of the neck of the humerus were driven against the anterior margin of the glenoid cavity and the head thus broken off, it appears possible that a continuation of the force might drive the broken extremity of the shaft upon the articular surface of the head (now directed forwards), producing a more or less complete impaction. There would necessarily be a forward displacement of the head, and this was precisely what was observed in the two specimens described by Mr. R. W. Smith.<sup>1</sup> In both of these the head of the humerus was displaced forwards beneath the coracoid process, and rotated on its axis, so that the articular surface looked forwards; only the outer part of the articular hemisphere of the head was driven into the upper extremity of the shaft, the inner part being free. The bones, in fact, occupied much the same relative positions as in fracture of the anatomical neck with dislocation of the head, except that the outer part of the articular surface of the head was driven into the shaft.

In both specimens a fracture passed through the tubercles; in neither had the capsule been torn.

The rare peculiarities which the case described presents, rendered it, I thought, of sufficient interest and importance to bring before this Society. I am indebted to the kindness of Mr. Holden for permission to do so.

<sup>1</sup> "Fractures and Dislocations."



