

galus out of its socket, but on an abnormal downward as well as inward deflection of the neck. The inward deflection has been long recognised; the downward deflection has not, I think, received the attention it deserves. The reason why the equinus cannot be overcome in these cases after division of the tendo Achillis and the posterior ligaments is that the astragalus is already more or less in normal contact with the tibia and fibula, and further attempts at dorsi-flexion merely wedge the broader anterior surface between the malleoli. To cure the equinus, I hold, either the head and downwardly deflected neck of the astragalus, or in some cases the whole of the astragalus, and often other portions of the bone as well, must be removed. After the excision of the astragalus I have still found that the os calcis or other of the tarsal bones have locked against the external malleolus, and it has not been till parts of these bones have been removed or the external malleolus has been divided and bent backwards that the foot could be placed at a right angle to the leg. When the condition of the astragalus is present it is evident that the mere division of the ligaments and tense structures on the inner side of the foot and even in the sole will be quite futile for correcting the equinus.

In advocating some form of tarsectomy in severe cases I wish it to be understood that no one holds more strongly than myself that these severe cases, like large stones in the bladder, should never be allowed to occur. I have always taught that though I firmly believe these intractable grades of the deformity can only be cured by tarsectomy, at the best it is but a bad job. The foot, after removal of bone, is of course an imperfect member, but at the same time a useful one, and for out-patients to whom the expense of continually wearing apparatus is a great consideration the advantage of being able to dispense with irons is an immense gain. To my mind the moral of the whole question is the importance of undertaking the treatment of club-foot at the very earliest possible period. At birth the bones consist of little more than cartilage, and during the first few months of life can be readily moulded and made to take almost any shape. I have always looked up to Mr. Adams as my teacher in all things orthopædic, and although I differ from him as regards the question of tarsectomy I have hitherto, in the treatment of club-foot in infancy, followed out his method of correcting the varus before attempting to overcome the equinus, and I am bound to say with excellent results. I agree with Mr. Owen that in slight cases the division of the tendo Achillis is often all that is required in the way of operation, but I have certainly found it of benefit to correct by plaster-of-Paris or other mechanical means the varus before doing so.

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## SIMULTANEOUS DISLOCATION AT THE SUPERIOR AND INFERIOR RADIO-ULNAR ARTICULATIONS.

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A STEWARD on board a cargo steamer, aged twenty-one, was admitted to the Lady Strangford Hospital, Port Said, under my charge, in June, 1891. He was suffering from the unusual accident of a dislocation of the head of the radius forwards and of the lower end of the ulna backwards. As the causation and symptoms of this uncommon condition were very clear and exact, it seems worth recording. The patient while carrying a dish in his right hand during stormy weather tripped over a ring bolt. He pitched forwards on to the deck, falling upon his right hand, with the injured arm twisted under his body. The radial side of his hand came into contact with the deck, with the wrist bent and the hand pronated; while the weight of his body fell chiefly upon the outer side of the forearm. He felt "something give way," and found he could not flex or extend the elbow-joint, which was fixed in a semi-flexed position. The arm was pulled about by one of the engineers, and afterwards he was able to move the joint more freely. It was then roughly bandaged and put in a sling until he came to the hospital, four days after the injury. On admission, the patient was suffering very little pain or even inconvenience except from inability to use the right arm. The forearm was semi-flexed and the hand

pronated. There were only slight swelling and deformity discernible about the elbow-joint, but when the joints on the two sides were compared a flattening of the outer aspect of the forearm was noticed near the joint, over the position normally occupied by the head of the radius. The bend of the elbow was full, and on palpation a hard swelling was easily felt just to the outer side of the tendon of the biceps, against which it was pressed. On rotation of the radius this swelling was felt to move, and there was absence of movement in the normal position. Crepitus of a creaking character was felt and heard on rotation, but not on simple flexion of the joint or pressure on the radius alone. Passive movement or palpation about the elbow-joint caused very slight pain, but movement of the wrist, especially supination, was painful. The lower end of the ulna was decidedly prominent behind and there was an unusual depression between it and the carpus in front. The end of the bone could be pressed into its normal position with an audible click, but it returned as soon as pressure was taken off. On pronation or supination of the hand the same movement of the end of the ulna took place. When the radius was fixed and the ulna moved forwards and backwards the latter felt perfectly loose and could be separated from the radius and carpus with ease.

After the full administration of chloroform the head of the radius could be felt quite easily resting against the humerus in the bend of the elbow. With skilled assistance attempts were made to reduce the dislocation by fixing the humerus and steadily extending the forearm. At the same time pressure and manipulation over the head of the bone were tried. Then after full extension the forearm was flexed on the arm, at the same moment as downward pressure was made on the head of the radius. Rotatory movements of the radius during both extension and flexion were also tried. Although there was complete relaxation of muscles, yet the position of the head of the bone could be only slightly altered, and at no time did it regain its normal position. There were no signs of fracture or other injury about the elbow-joint, but it did not seem justifiable to make further or more violent efforts at reduction. So the attempt was relinquished and the arm put up in an angular splint midway between pronation and supination. A straight splint was put along the outer side with a pad pressing on the lower end of the ulna, while a similar splint and pad were made to exert pressure on the head of the radius. The splints were kept on for three weeks and were re-adjusted at the end of each week, when passive movements of the elbow, wrist and finger-joints were made. There was no tendency for the lower end of the ulna to become firmly fixed, so after the splints were removed a bandage and a couple of pads were worn. To restore the muscular power, friction, cold douching and graduated exercise were ordered. As there was no pain all movements were increased and the patient instructed to lift a daily increasing weight from the floor. After five weeks he left the hospital with a very useful arm. Flattening of the outer side of the forearm and fulness of the bend of the elbow were still apparent. Flexion of course was not complete, but he could button his clothes and feed himself. The chief discomfort arose from the condition of the ulna, but when it was properly bandaged inconvenience was only slight.

Cases of these dislocations occurring separately are quoted in "Holmes' System of Surgery," "Spence's Lectures" and the celebrated work on "Dislocations and Fractures" by Sir Astley Cooper. In the last-named work a series of cases of dislocation of the head of the radius forwards are given in detail. In five of these the dislocation was reduced successfully, in six it remained unreduced. In the same work it is said that "luxation of the lower end of the ulna backwards is the result of a sudden and violent pronation." The age of the patient agrees with that given in most of the recorded cases, and the fact of his being a delicate, lightly built lad, with very loose joints, would render dislocation more likely to occur than fracture. The occurrence of the double dislocation was doubtless aided by his right hand being engaged at the moment of his fall, and so, being caught off his guard, he was not quick enough to put it into the usual protective position involuntarily assumed while falling. When it is considered that the annular, the capsular, the oblique and the sacciform ligaments connecting the radius and ulna were, in all probability, ruptured, and the two bones only connected by the interosseous ligament, it is wonderful that the result of the accident was not more unsatisfactory.

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