ice. The patient had no food for eight days, except glycerine, brandy, and distilled water. On May 26th, she was discharged cured.

CASE IV.—Mary W., aged 21, single, a servant, was admitted April 30th, 1875. On May 28th, she complained of severe pain in the left side. On the 31st, five leeches to the abdomen gave great relief. On June 6th, twelve leeches were applied to the seat of pain. On June 17th, the operation was performed. The cyst was multilocular, and extending into the right hypochondriac region. There was slight hæmorrhage. There were adhesions of the peritoneum to the cyst anteriorly, but none to the other neighbouring organs. The abdomen was carefully sponged out. The clamp was applied. During the first forty-eight hours after the operation, the patient took nothing but small quantities of tepid water (24 ounces in all). The urine contained albumen and lithates; these disappeared on the 19th. The amount of nourishment taken between 11 A.M. on the 19th and 11 A.M. on the 20th was, glycerine, 5 drachms and 5 minims; brandy, 7 drachms; water, 23 drachms; with 40 minims of aromatic spirits of ammonia. The nourishment taken during twenty-four hours between 11 A.M. of the 20th and 11 A.M. of the 21st consisted of glycerine, 1 ounce, 1 drachm, 25 minims; brandy, 1 ounce, 1 drachm, 40 minims; water, 20 drachms.

ON DISLOCATIONS OF THE ELBOW-JOINT AND FRACTURES OF THE LOWER END OF THE RADIUS.*

By ALEX. OGSTON, M.D.,

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THE preparation of compound dislocation of the elbow-joint and injury to the lower extremity of the radius, which I have the honour of showing you, has the following history.

A. B., a boy, aged twelve, was climbing a cherry-tree in the country, about ten miles from Aberdeen, on August 10th, 1875. He fell to the ground, and received a compound luxation of the right elbow-joint. He could give no account of the position of the arm at the time of the fall. He was seen by Dr. Fiddes of Aberdeen, who sent him into the Aberdeen Infirmary. Dr. Kerr being ill, I saw the boy for him, two hours after the receipt of the injury. There was no swelling of the arm. The lower end of the right humerus protruded completely through a lacerated wound on the front of the elbow, and could not be reduced. On inserting a finger into the cavity of the elbow-joint, the epitrochlea and epicondyle could be felt separated from the humerus, and lying in their proper position in relation to the radius and ulna. The pits from which they had been torn could be seen in the protruded humerus. The posterior surface of the protruded humerus was stripped of its periosteum for two inches up. There was almost no hæmorrhage.

The wrist of the same arm exhibited signs of fracture of the radius above the wrist-joint. The fracture could be reduced, and its signs made to disappear temporarily. When this was done, the deformity did not tend to reappear unless the arm was lifted by the hand. It was observed, however, that bony crepitus could not be elicited, and that the styloid process of the radius did not present the displacement upwards, which is observable in cases of Colles' fracture. It was, on the contrary, in its normal position, of a quarter of an inch lower than the styloid process of the ulna, instead of being shortened so as to be on the same level.

The arm was amputated above the lower fourth of the humerus.

The subsequent dissection of the extremity showed the following peculiarities. The wound through which the humerus projected was found to be transverse in direction, with lacerated margins, and to involve the skin, superficial fascia, and deep fascia. It was smaller than the circumference of the protruded part of the humerus, and embraced it so tightly as to preclude reduction. The subcutaneous veins of the forearm were uninjured; the humerus having protruded above the fork formed by the median vein, dividing into the median-basilic and median-cephalic veins. The cutaneous nerves of the forearm had also escaped injury; the nerves of Wrisberg and the cutaneous branches of the internal cutaneous passing on the inner, and the cutaneous branch of the musculo-cutaneous on the outer side of the wound. The tendon of the biceps muscle lay in the outer side of the wound, but the slip which it sends off to the deep fascia of the forearm was torn through. The brachial artery lay in the wound against the inner side of the protruded humerus; it was quite exposed, but not denuded of its sheath. Still more inwardly lay the uninjured median nerve. The brachialis

anticus muscle was almost wholly torn through; for the lower end of the humerus had perforated it, giving rise to a large hole through its middle, a bundle of the lateral fibres, of the size of the little finger, passing down on each side of the shaft to the insertion of the muscle, and thus forming a muscular collar embracing the bone, which of itself would have been sufficient to have prevented replacement. A slight extravasation of blood existed in the hollow of the elbow in front of the torn lower end of the brachialis anticus. The fleshy origin of the pronator radii teres from the humerus above the internal condyle was torn through. The epitrochlea was detached through its epiphysal cartilage, and a shell of bone from the humerus, corresponding to the common attachment of the flexor muscles of the forearm, was detached along with it. The epicondyle was fractured off along with a small thin shell of bone corresponding to the common origin of the extensor muscles of the forearm. On the outer side of the humerus further up, the origin of the extensor carpi radialis longior, and of the supinator radii longus, as well as the external intermuscular septum, were detached from the bone for a distance of two inches upwards. The posterior and internal surfaces of the humerus were denuded of periosteum to the same extent.

At the wrist, the lower epiphysis of the radius was found separated, a transverse diastasis having taken place through the epiphysal cartilage. The lower fragment was displaced backwards, but, owing to the transverse direction of the fissure, there was no shortening, and the shell of cartilage had prevented the occurrence of bony crepitus. The fissure was just at the lower margin of the pronator quadratus, and a few of the lowermost fibres of this muscle were torn across at their insertion into the radius. The front surface of the upper fragment of the radius underneath the pronator quadratus was partially denuded of its periosteum for three-quarters of an inch upwards, and this periosteum hung as a short flap from the upper edge of the lower fragment at its anterior part. Extensive infiltration of blood, but no distinct coagulum, was found in the connective tissue beneath the fascia, separating the superficial from the deep muscles on the front of the forearm, and this was most extensive in two situations, viz., in front of the interosseous membrane, between the flexor longus pollicis and the flexor profundus digitorum muscles, and between these muscles and the pronator quadratus. Similar extravasation extended into the palm of the hand, along the tendon of the flexor longus pollicis, and was also present on the back of the wrist below the tendon of the extensor secundi internodii pollicis. Finally, the styloid process of the ulna was fractured off at its tip, an injury which was not observed before dissection.

Nothing else abnormal was revealed by the dissection, which was conducted with great care.

My reason for bringing forward these minute details is, that they suffice to show exactly how the injuries had been produced, and are of value as adding to the knowledge we already possess regarding similar accidents to the radius and elbow-joint. The only possible explanation of their mode of production, and the one now generally adopted to explain similar injuries, is, that the boy had fallen with outstretched arm, on the palm of his hand, while the wrist was bent backwards. This is supported by the absence of cutaneous abrasion and extravasation from any other part of the arm on which the impact with the ground could have occurred; it being known that the palm of the hand usually escapes without such lesions. The palm of the hand resting on the ground, the weight of the body had to be borne by the forearm, and, as usual, the radius gave way at its lower part, just above the wrist. The fracture occurring by diastasis, or separation of the epiphysis, there was no impaction of the upper into the lower fragment, which was carried backwards with the carpus, and the strain thrown at the same time on the internal lateral ligament of the wrist-joint sufficed to break off the tip of the styloid process of the ulna to which it is attached.

The symptoms of fracture thus produced were somewhat peculiar. It is known that when this does not occur by diastasis of an epiphysis, the lower end of the radius, which articulates with the carpus, is not only carried backwards, but it is displaced obliquely, so that the articular facet is altered from its normal direction, *i.e.*, looking downwards, forwards, and inwards, and is found directed downwards, backwards, and outwards. The preparation of an old Colles' fracture, which has united, which I now show, will illustrate this alteration of direction very well when compared with the normal bone. The displacement results from a rotation of the lower fragment on the horizontal axis which runs through both forearm bones from within outwards, as well as on its antero-posterior axis. This last rotation, coupled with the frequently oblique direction of the plane of fracture from before upwards and backwards, or with the more or less marked impaction of the upper into the under fragment which is usually

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present, leads in almost every case to a shortening of the radius. Of this the most marked symptom is one which is invariably, or almost invariably, present, viz., a drawing up of the styloid process of the radius in relation to that of the ulna. Normally, the forefinger and thumb, if firmly pressed against the upper row of the carpal bones, easily feel that the styloid process of the radius is a quarter of an inch lower down than that of the ulna. But after Colles' fracture, the two processes are pretty nearly at the same level from the shortening of the radius. This sign has not been absent in any of the Colles' fractures, amounting to about a dozen, which I have met with during the past year. But in the boy who sustained the above injury, the styloid processes were noted as standing in their usual relationship, and on dissection this peculiarity was confirmed. It is evident that in him the existence of diastasis of the epiphysis, as distinguished from Colles' fracture, was the reason of this peculiarity, as well as of the absence of crepitation on moving the fragments on each other. The rotation of the articular facet was simply backwards, without the usual outward obliquity.

The continuation of the force acting on the arm, which, at the moment of the fall, had been extended at the elbow-joint, led in the next place to an over-extension of the elbow, and to dislocation backwards of both the forearm bones. The forearm bones are, I believe, capable of being dislocated backwards only by an over-extension of the elbow-joint; at least, any other mechanism very rarely produces this displacement. The humerus was by the hyperextension of the elbow-joint so much tilted forwards, that its lower extremity came to lie in front of the heads of the radius and ulna. The anterior ligament was then torn through, and the pressure of the lower end of the humerus led to the brachialis anticus being skinned and stretched over it, and finally to its being perforated by the bone, the brachial artery and median nerve slipping inwards over the internal condyle, and the tendon of the biceps, set free by the rupture of its aponeurotic slip to the deep fascia of the forearm, slipping over the outer condyle. At the same time, the internal and external lateral ligaments of the elbow-joint tore off the epitrochlea and epicondyle to which they were attached. The lower end of the humerus, when thus set free, had only to tear the aponeurosis, superficial fascia, and skin, to produce the compound dislocation which was observed.

This state of matters in the elbow-joint seems to throw some light on the occasional occurrence of irreducible dislocations of the elbow. Here the brachialis anticus, tightly embracing in its perforated opening the shaft of the humerus, would have defeated all attempts at reduction, even had the wound of the more superficial parts been enlarged. And it would have been a very hazardous operation to attempt the division of the remaining lateral fibres of the brachialis anticus, on account of the proximity of the brachial artery and median nerve on the inside, and of the biceps tendon and radial nerve on the outer side.

We sometimes meet with an irreducible dislocation of the elbow presenting a great similarity to the above case, except that it is not compound, *i.e.*, without the wound of the skin and fasciæ. The case which is before you, for instance, was taken from such an irreducible dislocation of the right elbow-joint in a boy aged 14, who presented himself at the Infirmary after the injury was four months old. He could give no account of the position of the arm at the time of the fall. He had fallen from a wall, and his able medical attendant at once diagnosed dislocation backwards of both forearm bones. Strenuous and prolonged efforts, with and without chloroform, were made to effect reduction, but unsuccessfully. On examination at the Infirmary, after the lapse of this time, the forearm was found to be shortened on its anterior aspect, owing to the projection forwards, at its upper part, of the lower end of the humerus. Beneath the skin in front of the elbow, this portion of the humerus could be felt, and all its anatomical peculiarities were so distinctly to be made out that it was evidently covered by little more than the integuments of the forearm. The bones of the forearm were dislocated backwards in company, but were directed diagonally inwards across the articular surface of the humerus, giving the latter bone the appearance of being rotated outwards on its long axis, so that the internal condyle pointed forwards and inwards. The trochlea lay in front of the shaft of the ulna below its coronoid process, and the radial eminence immediately in front of the head of the radius. Above the head of the radius, instead of the articular pit being perceptible, there was felt a bony knot immovably connected with the humerus, and not moving with the radius, which seemed to be the epicondyle of the humerus detached and re-united. The forearm was midway between extension and right-angled flexion: the articulation permitted pronation and supination to be well performed, but flexion and extension were very limited in extent. The broken off epicondyle and the uncovered lower end of the humerus, are almost positive

proof of the correctness of the supposition that the humerus had perforated the brachialis anticus. Of course, even if the brachialis anticus had not been perforated, it might, in the interval of time between the accident and our seeing the arm, have wasted so as to leave the humerus seemingly bare, but the total irreducibility of the injury when recent, speaks strongly in favour of the view I have stated.

OBSTETRIC MEMORANDA.

ON THE HYPODERMIC INJECTION OF ERGOTIN IN CASES OF UTERINE FIBROIDS.

IN the interesting article which appeared on this subject in the JOURNAL of June 17th, the remark is made that I, in common with all those who practised the hypodermic injection of ergotin, as recommended by Hildebrandt, have found that this treatment, sooner or later, resulted in the formation of troublesome sores. I think it of some importance to say that, though this is perfectly correct with reference to the cases published by me, and quoted by Dr. Byford in his essay, it is not so with respect to my more recent ones. I have availed myself, since my appointment to the Mastership of this Hospital, of the larger opportunity offered me here to carry out this treatment more extensively; and I give the following cases as examples of the results obtained. Case 1, of large intramural fibroid, in a widow, nulliparous, aged 38; prominent symptoms, distress from weight and size of tumour, menstruation increased but not excessive, returning at intervals of twenty-one days; with an intramenstrual discharge of blood, moderate in quantity, lasting for three days, thirty injections, practised at intervals of two and three days. Result: total disappearance of the intramenstrual discharge, slight prolongation of the intramenstrual period, hardening and apparently slight diminution of the bulk of tumour, no pain caused by injection or irritation following it. Case 2. Single woman, aged 45, rendered exsanguine by profuse menorrhagia, accompanied by excessive pain, and lasting fifteen days and upwards, intramenstrual period of not more than from seven to ten days; of late, in fact, seldom free from a red discharge; large intramural fibroid, filling up pelvis, and reaching to within an inch of umbilicus. Upwards of sixty injections of ergotin; admitted January 6th. Result: March 10th, flow diminished in quantity and lasting for six days, intramenstrual period prolonged to twenty-one days; April 1st, menstruation reappeared this day, lasted but two days; May 21st, menstruated to-day, flow lasted four days. Marked as the improvement was as regards the check put on the loss of blood, her condition in other respects was not satisfactory; her sufferings, always great, were aggravated, the injection being always followed by severe pain, referred to the tumour, necessitating the constant use of morphia; she seldom could leave her bed; and I finally abandoned the treatment, and am now endeavouring to enucleate the tumour. I hope, at a future time, to publish the case *in extenso*. At present, I wish merely to point out the fact that the injection of ergotin, in neither of the two cases I have detailed, was followed by the formation of sores; nor has it been in several others in which it has been recently practised for a shorter time by me. The only explanation I can give of the greater success, in my later cases, is this, that whereas I formerly added a small quantity of glycerine to the solution of ergotin, as recommended by Hildebrandt, I now employ a solution of one part of the extractum ergotæ liquidum (*British Pharmacopæia*) in two of water, injecting 15 or 20 minims of this each time. I always insert the needle into the gluteus muscle, making it penetrate to the depth of more than an inch.

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MISCARRIAGE OF TRIPLETS.

ON July 10th, I was consulted by Mrs. C., a healthy woman, thirty years of age, with reference to a very large abdominal tumour, which, she said, she had only noticed for about six weeks, and she complained of great pain in the right lumbar region. On November 5th, 1875, she was delivered by forceps of a dead child, this being her tenth confinement, and her last menstruation was on February 14th, 1876. The tumour felt like a solid, hard mass; but without the irregularities of surface generally noticeable in the pregnant state, and was freely movable. No fluctuation could be detected; and there was nothing to suggest fluid as the cause of the tumour, except its rapid growth. The uterus was high up, and, on vaginal examination, the os could with difficulty be reached with the tip of the index. The mammae presented marked signs of pregnancy. As Mrs. C. desired admission to an hospital, I sent her to St. Thomas's, where she was seen by my friend Dr. Robert