are not already closed by the disease. Sodium bromide was at first tried instead of lipiodol, but it was found that it was very apt to soak the wool and escape. It is also as well to apply a piece of wet wool to the puncture hole in the inferior meatus as soon as the needle has been removed, to prevent escape of lipiodol in this situation.

The lipiodol may be removed with the Watson-Williams syringe, the needle of which can be placed in the puncture hole formerly made. In other cases, as the antrum will be opened surgically later, the lipiodol may be left *in situ* till the operation, as it is sterile when injected.

The accompanying figures are reproductions of antero-posterior x-ray photographs; they show a normal maxillary antrum injected with lipiodol, and an antrum containing an epithelioma. In the latter the lipiodol has filled those parts of the antrum not occupied by the growth. The pieces of wool in the nose are well seen.

PINNING THE FRACTURED ULNAR STYLOID PROCESS IN COLLES'S FRACTURE.

BY

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MANY patients who have suffered Colles's fracture complain, months afterwards, far more of weakness of the wrist-joint and pain over the ulnar styloid process than of the radial fracture. An x-ray examination of these cases shows that this is caused by a fracture and separation of the ulnar styloid process.

There is no doubt that the successful treatment of Colles's fracture depends upon accurate reduction of the radial fracture; but there are many cases, especially those of impacted fracture of the radius, in which reduction is difficult and is not always accomplished successfully without open operation, and it is in these cases that separation of the ulnar styloid process is the cause of pain and weakness in the wrist-joint, often many months after fracture. This after-result of Colles's fracture impressed me so much that I began to pin the fractured styloid process of the ulna.

Although the fractured radius may be accurately replaced, yet if x-ray examination shows the styloid process of the ulna to be still separated, open operation should be performed in order to get good bony union of the fractured surfaces, and not the fibrous union which would otherwise result. It is by this means that pain and weakness of the wrist-joint can be prevented.

Anatomy textbooks state that arising from the styloid process of the ulna is the strong internal lateral ligament of the wrist-joint, which is attached to the rough non-articular border of the cuneiform bone, some of its fibres being prolonged to the pisiform bone. It seems to me that if this strong internal lateral ligament of the wrist-joint is rendered useless by want of accurate approximation of the fractured ulnar styloid, where this separation is shown by x rays to be present the only thing to do to prevent resultant pain and weakness is accurately to approximate the fractured surfaces and pin them into position and ensure sound bony union.

In those cases of impacted Colles's fracture where reduction is impossible because the fractured lower end is caught up in the pronator quadratus muscle and open operation is necessary, then, should there also be a complicating fracture of the ulnar styloid, this too should be operated upon. Hence it seemed to me common sense that the fracture of the ulnar styloid process should not be overlooked. I have devised an open operation which is, I understand, original—it is very simple and takes only a few minutes to perform.

A vertical incision is made directly over the fractured ulnar styloid, and the fractured surfaces are exposed. They are found separated by several millimetres (as shown by the skiagram), and frequently the distal end of the fractured styloid process is so pulled upon by the strong internal lateral ligament that it is rotated as well as separated, and its base tilted upwards and towards the extensor surface of the forearm, proving that without

open operation bony union is even more impossible than it is with simple separation. (The x-ray picture will not show this tilting of the fractured tip of the styloid process.) With the thumb and index finger of the operator's left hand the fractured styloid process is accurately replaced, and, being thus held in position, an ordinary straight bayonet-shaped needle is, with a hammer, driven through the fragment into the lower end of the ulna in a direction downwards and slightly towards the flexor and radial side of the forearm. When the needle has been driven sufficiently far to fix the styloid fragment the needle is cut off with wire-clippers, the fascia replaced, and the wound sewn up. The forearm is placed on an ordinary Carr's splint for seven to ten days, after which the splint is discarded, the stitches removed, a firm bandage applied, and massage and passive movements started forthwith.

This operation is very simple and takes only a few minutes to perform, and I maintain that where, with separation of the fractured surfaces, this fracture complicates a Colles's fracture, the pinning of the styloid ulnar process should always be performed, and will prevent resultant pain and weakness of the wrist-joint. But at the same time it must be understood that accurate radial reduction is the first and foremost object in the treatment of Colles's fracture.

The x-ray photograph is from a recent case which I consider typical, because after accurate radial reduction there remained separation of the ulnar styloid process. The patient was a lad aged 16, and I feel confident that without open operation and pinning of the ulnar styloid he might have had a permanently weak wrist which would have interfered seriously with his efficiency in after-life; whereas he now has firm bony union of the fractured styloid process and as strong a wrist-joint as he had before his accident, without any pain, weakness, or deformity.

CONGENITAL ABSENCE OF THE PECTORAL MUSCLES.

BY

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PARTIAL or complete absence of the pectoral muscles is a condition comparatively frequently met with, and in a series of cases of congenital absence of muscles collected by Bing¹ loss of the pectoralis major (usually the pars sterno-costalis) and of the pectoralis minor together was the commonest abnormality to be present (28 per cent. of the total); absence of the pars sterno-costalis of the pectoralis major alone is the next most frequent type of abnormality, and was present in 9 per cent. of the cases. These figures are probably too high, owing to the fact that in the ordinary routine examination of patients this abnormality is very readily noticed, while the detection of most of the other muscular defects requires a more detailed examination.

A case of complete absence of both pectoral muscles on the one side is recorded by Severn,² but the absence of both major and minor is a very rare occurrence—usually the clavicular part of the pectoralis major remains, and often undergoes considerable hypertrophy. Absence of the

pectoralis minor unaccompanied by defect of the pectoralis major is said never to occur,³ while only one case has been recorded where the condition has been bilateral.⁴

Heredity does not apparently play a very strong part in its production, since only once has the condition been noted in more than one member of a family—a case of father and two sons with this abnormality⁵—though other defects of development in the same family, such as accessory fingers or “webbed” toes, are occasionally met with. The pectoralis major is in some cases replaced by a fibrous band over which the skin becomes rolled, giving rise to a sickle-shaped fold which forms the anterior wall of the axilla.

Defects in the nipple and breast on the affected side are often present; both may be completely absent,⁶ or the breast alone may be absent, with a rudimentary nipple, which is usually displaced upwards and inwards, as in the case described in this paper. There may also be a falling in of the chest on the affected side, due to defects in the cartilaginous portion of the second and third ribs; this portion may be markedly attenuated, or may be completely absent, its position being taken by a strong fibrous band.⁷⁻¹¹

The amount of disability produced by the condition is, as a rule, extremely slight, as is seen by the case described by Burke¹² of a good left-handed baseball pitcher who had this abnormality on the left side, by the man recorded by Bruns¹³ who was an expert turner, and by the student described by Stinzig¹⁴ who was an excellent left-handed fencer, using his arm with the defect in preference to the other. In the case of the girl described in this article, with the abnormality on the right side, this arm was much stronger than the other, and she was able to throw a tennis ball twice as far with her right hand as with her left.

The most widely accepted view with regard to the origin of the condition is that advocated by Lewis,¹⁵ who has shown that the pre-muscle mass from which the pectoral muscles are developed is situated in the lower cervical region in the early embryo and anterior to the first rib. As the embryo gets older the mass spreads out in the shape of a fan and moves downwards, becoming attached to the clavicle early and later to the ribs, sternum, and

abdominal fascia; while at the same time it becomes differentiated into major and minor muscles. He believes that the condition is due either to (1) failure of attachment and subsequent atrophy of the pectoralis minor and pars sterno-costalis of the pectoralis major; or to (2) lack of complete differentiation between the muscles. Probably both factors play a part in its production, but in favour of the latter view is the fact that there is always marked hypertrophy of the pars claviculæ when present in addition to hypertrophy of the deltoid.

The case here described was that of a girl, aged 13 years, with absence of the pars sterno-costalis of the pectoralis major and the pectoralis minor on the right side. The condition is best demonstrated by getting her to put her arms straight forward and pressing her hands together. There is considerable hypertrophy of the clavicular portion of the pectoralis major and of the deltoid on that side. The muscle is not replaced by a definite fibrous band, the anterior axillary fold being formed by the clavicular part of the muscle. The breast on the right side is absent, and the ribs in that position are merely covered over with skin and subcutaneous tissue. The nipple is rudimentary, and is situated higher and nearer the middle line than on the other side. The ribs are normal, and x rays show no abnormality of the bony thorax; no scoliosis is present. There is no loss of power on the affected side owing to hypertrophy of the deltoid and clavicular part of the muscle.

It is of interest that she has also wasting of the left thigh and calf with some shortening—the result of an attack of acute anterior poliomyelitis when 2 years of age.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE VALUE OF ANATOMICAL DETAIL.

THE following case may be of interest as it serves to illustrate one of those finer details of anatomy which are apt to be forgotten and which sometimes assume considerable importance.

A married woman came to see me suffering from a wound on the dorsum of the right hand, a bowl having fallen from a height of about three feet on to her hand, splitting it open. The wound was comparatively clean cut, about one inch in length, and extended transversely across the extensor tendon of the middle finger, one inch from the metacarpo-phalangeal joint. On probing the wound it was found that the extensor tendon had been severed. In spite of this the patient could still extend the finger, although the movement was very slow and caused considerable pain. There was no apparent contraction of the extensor digitorum communis during the movement of extension. The patient was sent to hospital for treatment, but the diagnosis arrived at there was, “extensor tendon half-cut.” The treatment adopted was a skin stitch and finger splint. As I had informed the patient that the tendon was completely severed she naturally wished to have this little difference of opinion settled, and at her request I made an exploratory incision under local anaesthesia. I found the tendon completely severed, the proximal end having been drawn up the sheath for a distance of two inches. The sheath was opened and the tendon withdrawn in the usual way. The severed ends were then trimmed up and stitched together and the hand put up in a hand and forearm splint in full extension.

sion. Passive movement was commenced on the second day and active movement on the seventh. The splint was removed on the fourteenth day and the patient now has full use of her finger.

The point of interest lies in the fact that in spite of complete severance of the tendon the finger could still be fully extended.

The anatomical detail apt to be overlooked is that from the extensor tendon of the ring finger fibrous slips pass to the adjacent tendons. The slip going to the middle finger is inserted just proximal to the metacarpo-phalangeal joint. Before stitching the severed ends together the patient was asked to extend her fingers, and it could then be seen that it was this slip which was responsible for the function remaining. In addition, the insertions of the tendons of the lumbricals and interossei would also contribute in some degree to the movement of extension.

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HUNTINGTON'S CHOREA.

WITH respect to the commentary by Dr. Grimby and Dr. Wilson on two cases of Huntington's chorea (*BRITISH MEDICAL JOURNAL*, May 8th and 15th, p. 820), and having regard to the pathology and rarity of the disease, I desire to record the cases of two patients who died within a day or two of each other in April last at the South Yorkshire Mental Hospital. One was a female and one a male, and