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CLINICAL LECTURES ON DISLOCATIONS, DELIVERED AT THE CHARING - CROSS HOSPITAL.

By HENRY HANCOCK, Esq., Surgeon to the Hospital.

LECTURE VII.

Although, in the generality of instances, the signs and symptoms of dislocation downwards and forwards are sufficiently clear and well marked, still, as we occasionally meet with cases in which the symptoms are more obscure, and as we have not all of us the same opportunities of making ourselves acquainted with the subject, I will now point out to you their diagnoses, or the signs by which dislocations into the axilla may be distinguished from those accidents which, to a certain degree, simulate them, and which may be mistaken for them by the careless or inexperienced practitioner. I have already told you that the principal signs of dislocation downwards are the hollow beneath the acromion process; the flattening of the shoulder instead of its natural roundness; the arm a little elongated; the difficulty of bringing the elbow to the side; the presence of the head of the bone in the axilla; the tingling of the fingers; inability to raise the hand to the head; the impaired motions of the joint, and the alteration in the direction of the axis of the limb; and, lastly, the direction of the acromial process. From this you will observe that dislocations into the axilla differ from luxations forwards and inwards, or under the pectoral muscle, by the head of the bone in the latter accident being thrown beneath the clavicle under the pectoral muscle, and internal to the coracoid process; the arm shortened instead of elongated; the axis of the limb thrown forwards towards the centre of the clavicle; the elbow more separated from the thorax, and thrown further backwards; in most cases the absence of tingling in the fingers, as the head of the bone does not usually press upon the axillary plexus of nerves; and the inability of moving the arm forwards and backwards, which the patient can do in dislocations into the axilla. I would also add that the acromial process projects more, and that the sub-acromial depression is more marked in dislocations forwards than in luxations into the axilla; but as this is a question of degree, you will only be enabled to judge of the fact from experience.

You will distinguish dislocation into the axilla from luxation backwards, chiefly by the head of the humerus being thrown on to the dorsum of the scapula, forming a tumour, which obeys the motions of the humerus when the latter is rotated. There is also more power of motion remaining in this accident than in the two former to which we have alluded, and the direction of the limb is obviously the reverse of what it obtains in dislocations forwards.

In partial dislocations, or where the head of the bone lies against the coracoid process, the acromion is less prominent, and the depression beneath the latter is less marked than in a dislocation downwards; indeed, these latter signs can only be observed opposite the back of the shoulder joint, in consequence of the os humeri having left the posterior portion of the glenoid cavity. There is an evident fulness corresponding to the head of the bone in its new situation, where it can readily be felt moving when the arm is rotated. The patient enjoys what are called the under motions; but when he attempts to raise his arm, he is prevented doing so by the head of the bone striking against the coracoid process. The axis of the arm is also directed more forwards than in luxation downwards.

The diagnosis between the several forms of dislocation of the shoulder, which I have here described, is sufficiently clear to enable you to decide upon the nature of the injury in recent cases, before any considerable swelling has taken place, or where the patient is not overloaded with fat; but in some instances of fracture about the joint, the diagnosis is much more obscure. In Dupuytren's "Leçons Orales," there is a case related, which ultimately proved to be a dislocation, but in which considerable doubts were entertained for several days whether it was not a fracture, for which it had in the first instance been treated without success.

These cases will cause you great anxiety, and may be of serious consequence to the patient. Should the case be a fracture, and you mistake it for a dislocation, you put your patient to unnecessary pain by your efforts at reduction; but if you are careful, and understand what you are about, you will commonly be able to discover your error before it is too late, by observing that if you reduce the

parts, and then leave the arm to itself, they will immediately re-assume their abnormal position, which they would not were the case a simple dislocation. On the other hand, if the bone be dislocated, and the patient treated for a fracture, it will mostly be too late to rectify the mistake when the splints and bandages are removed, and the patient will remain more or less crippled.

You may frequently be called upon to decide the nature of injuries to the shoulder, at times very obscure and difficult to be made out. A man receives a blow, or falls upon the part, and finds that he has lost the power of raising the arm. Now, this may arise from various causes: from contusion of the deltoid muscle, or laceration of some of its fibres; from fracture of one of the bones, or some of the processes; from ejection of the biceps tendon from its groove; and, in early life, from the separation of the epiphyses.

As it is of great importance that you should be well acquainted with these several accidents, I will endeavour to explain them to you; for although I shall occupy a considerable portion of your time in so doing, and although some of the accidents in question are so different in character that it is impossible to mistake them for dislocation, still others resemble them more closely, and may be mistaken; and, moreover, as the late Sir Everard Home used to observe,—“You ought to be prepared not only for what you may, but for what you may not expect.”

FRACTURE OF THE ACROMION PROCESS OF THE SCAPULA.

This accident is the result of direct violence referred to the part. You must here recollect the scapular attachments of the deltoid and trapezius muscles; for when the acromion is fractured, by the weight of the arm, and the general attachment of the deltoid being drawn down thereby, the detached portion of the acromion is depressed and separated from the remainder of the process, which, with the scapula, is raised upwards and backwards by the trapezius muscle. In consequence of the arm falling, the natural roundness of the shoulder is lost; whilst the head of the bone, dropping to the extent of the capsular ligament, becomes partially dislocated towards the axilla. Carry your fingers from within outwards, along the spine of the scapula, and you will feel the rough sharp edge of the broken process just at its union with the clavicle, causing great pain upon pressure.

The distance from the sternal end of the clavicle to the extremity of the shoulder, is said to be lessened, but this arises from the falling and consequent flattening of the shoulder, and not, as has been set forth in a recent work on fractures of the extremities, from the clavicle having lost its connexion with the acromion process; for you must recollect the clavicle is in a very different position in this accident to what it obtains in dislocation of its scapular extremity. In the latter accident, the

diminution of distance doubtless depends upon the altered relations of the clavicle, inasmuch as one or both of the coraco-clavicular ligaments are ruptured; whilst in the accident we are now considering, this is not the case: and, moreover, by simply pushing the head of the humerus upwards, against the acromion process, the natural distance and appearance of parts are at once restored, which would not be the case were the clavicle displaced. The latter, in point of fact, has nothing to do with this apparent diminution; that, as I have before observed, depending simply upon the falling and consequent flattening of the shoulder itself. The arm hangs down by the side, and the patient complains greatly of the weight and dragging of the limb, which he usually endeavours to relieve by supporting his hand in that of the opposite side. He is unable to raise his arm, but can move it backwards and forwards. When called upon to treat a case of this description, you will be able to ascertain its true character, and to distinguish it from dislocation, by directing your patient to sit down on a low chair or stool; stand before him if it is his left shoulder, and behind him if his right; then take hold of his arm with your right hand, and cover the cap of the shoulder with the palm of your left; push up the humerus against the acromion process and the natural appearance of the shoulder is at once restored. Now, if you rotate the arm, you will distinctly feel the crepitus, produced by the rubbing together of the two pieces of bone, which can only be ascertained when the arm is pushed up, by which means the broken pieces are brought in apposition. Having ascertained the existence of crepitus, suffer the arm to fall, when the immediate return of deformity at once points out the nature of the accident.

To complete the subject, it will perhaps be better to give you the general laws of treatment to be pursued in these cases, although, strictly speaking, they appertain more to lectures on fracture than on dislocations. However, the best line of treatment which you can adopt, is, to push up the head of the humerus against the acromion process, by which means you approximate the broken pieces, keeping them steady by converting the head of the humerus into a natural splint. Do not put any pad in the axilla—if you do, you separate the fragments of bone, and prevent union; but on the contrary, place a pretty thick pad between the elbow and the body, thus relaxing the deltoid muscle, and keeping the head of the bone against the glenoid cavity. Having pushed the arm well up towards the shoulder, and drawn the elbow a little backwards, you fix the limb in this situation, by supporting the elbow, and binding the arm securely to the side with a roller carried round the body. You must prevent all motion for about three weeks or a month, by which time the parts will have united, occasionally by bone, but more generally by ligamentous substance. In the latter

case the arm remains more or less weakened. You had much better, therefore, explain this to your patient when first you are called to him, otherwise he may imagine that you have not treated the case properly.

FRACTURE OF THE CORACOID PROCESS.

This accident is much more uncommon than the last. The situation of the process, the manner in which it is covered and protected, and the mobility of the scapula, all tend to prevent its being broken. Cases are, however, occasionally met with, in which the apex of the coracoid process is broken off, and is drawn downwards and forwards by the united action of the short head of the biceps, the coracobrachialis, and the pectoralis minor muscles.

This is an accident which may be easily overlooked if you make your examination carelessly, or, unless you are pretty well acquainted with your subject. The patient tells you that he has received a violent blow upon the part, and that he finds difficulty in raising his arm, but when you examine him, you find little, if any, deviation from the natural appearance of the shoulder, further than tumefaction of the part, which does not always come on immediately; and indeed you will chiefly be guided as to the seat of injury by the point to which the patient refers the pain. Place your finger upon the clavicle at about an inch and a quarter from its acromial extremity, carry it downwards and slightly inwards towards the lower border of the axilla, and you will then be able to feel the detached portion of bone, more or less drawn down by the muscles which I have already enumerated, whilst its descent is limited by the coraco-acromial or deltoid ligament. If you now flex the forearm, relaxing the biceps muscle, and carry the arm forwards and upwards across the thorax, relaxing the pectoralis major and coracobrachialis, by inserting your thumb or finger in the axilla, and grasping the anterior wall of that cavity, you will be able to fix the detached portion of bone, and push it up to its natural situation, when, feeling the crepitus, you will be convinced of the nature of the accident, which is so distinct in its character from a dislocation of the head of the humerus, that it is quite impossible to mistake the one for the other.

Keep the limb in the position I have last described—viz., flex the forearm and carry the arm upwards and forwards across the thorax, make your patient grasp the opposite shoulder with the hand of the injured side; next, fix a soft pad well up in the axilla, taking care that it is placed in the axilla, as close as possible to the pectoralis minor, and coracoid process, which you cannot do if it is allowed to rest against the lower edge either of the anterior or posterior border of the axilla. You should next apply a bandage over the whole in such a manner, that whilst the patient is prevented altering the position of the arm, the head of the humerus is carried up against the

deltoid ligament, acting as a natural splint, and preventing the separation of the broken pieces.

FRACTURE OF THE CERVIX SCAPULÆ.

In this accident, which is comparatively of rare occurrence, the scapula is fractured at its narrowest portion behind the glenoid cavity in such a manner, that whilst that cavity is broken off, the acromion and coracoid processes remain attached to the body of the bone. This injury arises from violence referred directly to the cap of the shoulder. The patient falls from a window, or is thrown violently down upon the ground, and alighting immediately upon the shoulder, the neck of the scapula is broken. A poor washerwoman in the month of July, last year, was leaning out of a window, hanging some linen upon a line to dry, when she unfortunately lost her balance, and fell heavily upon the pavement beneath. She was picked up in a state of complete insensibility and brought into the hospital, where she became my patient. When I saw her in the afternoon she was perfectly unconscious, and was evidently suffering from concussion of the brain. I waited until reaction took place, when I directed that she should be bled, and five grains of calomel placed upon her tongue, to be followed in four hours by an aperient draught, if she became sufficiently sensible to take it. Under this treatment the symptoms of concussion subsided in two days, when, as she complained very much of her right shoulder, I examined it, and discovered the following appearances:—The acromion process projected much more than on the sound side, and beneath was an evident depression and flattening, whilst the arm had dropped down so far below its natural situation, that the case at first sight appeared to be a dislocation downwards. The arm, however, could be moved freely about, in all directions, although with considerable pain to the patient. Upon placing my left hand over the shoulder, with my thumb upon the coracoid process, as recommended by Sir Astley Cooper, and pushing the arm with my right hand, upwards and slightly outwards, the natural shape and appearance was restored, and upon rotating the arm at the elbow, distinct crepitus could be felt. Having let go my hold upon the arm, it immediately dropped, and the deformity of parts was reproduced. The patient suffered from fracture of the neck of the scapula. The arm was restored to its proper shape, but I am informed that she has not as yet recovered the entire use of her limb.

I am indebted for the particulars of the next case to my friend Mr. Bennett, of Shaftesbury, in whose practice it occurred. The patient, a young lady, was thrown from her horse, and fell upon her shoulder. Finding that she had been deprived of the use of her arm, she sent for Mr. Bennett, who at once found that the neck of the scapula was broken, the symptoms and appearances being similar to those in my patient.

These cases present the usual signs of fracture

of the neck of the scapula. Let us now consider the causes of displacement in this accident. This obviously results from the detached glenoid cavity being no longer capable of sustaining the weight of the arm, which accordingly drops and hangs uselessly by the side; but the degree of depression and consequent separation, depends, as Sir Astley Cooper pointed out, upon the integrity of the ligament, which, in a previous lecture, I described to you, as passing from the spine of the scapula to the glenoid cavity of that bone. When this is torn, the glenoid cavity, and the head of the humerus, fall deeply into the axilla, and are drawn inwards against the inferior costa of the scapula, by the pectoralis major, latissimus dorsi, teres major, and the capsular muscles of the shoulder joint, with the exception of the deltoid, which being placed upon the stretch, separates the elbow from the side, increasing the similitude between this accident and dislocation downwards; but when the ligament remains entire, the displacement is much less.

Fracture of the neck of the scapula very much resembles dislocation into the axilla in appearance, and may be mistaken for that accident. Patients have more than once been tortured by injudicious attempts to return what has been erroneously considered the dislocated bone. This is a mistake which I trust none of you will make, as it does much harm; the violence immediately inflicted upon the soft parts causes inflammation and swelling, with great pain, constitutional irritation will ensue, and the patient be rendered exceedingly ill. The swelling rapidly coming on, will prevent your ascertaining the true character of the accident until much valuable time has been lost, and much suffering inflicted, which might have been spared, had you known what you were about in the first instance.

Fractures of the neck of the scapula also resemble dislocations into the axilla in general appearance; in the projection of the acromion process; the depression and flattening beneath this process; the loss of power, and elongation of the limb. They differ from dislocation, in the freedom with which the surgeon may move the arm in all directions; the facility of bringing it to the side; the crepitus felt when the parts are restored to their natural situation, and which can best be felt, by placing the finger or thumb upon the coracoid process, whilst you rotate the arm; the facility with which the deformity is overcome by merely pushing the arm upwards and a little outwards; and lastly, the return of the deformity immediately the arm is allowed to hang unsupported. When these signs are present, you ought at once to be aware that the case is one of fracture, and not dislocation.

Having flexed the forearm and placed it in the prone position, by which means you relax the long head of the biceps, introduce one hand into the axilla, and gently press the head of the bone out-

wards, whilst with the other you grasp the elbow and push it upwards, thus restoring the parts to their proper situation. Let an assistant hold it in this position whilst you place a cushion in the axilla, and fix it there by the figure of 8 or clavicle bandage. You must be careful to have this cushion of proper size, sufficiently thick to counteract the muscles, but not so thick as to throw the head unnaturally outwards, and thus prevent the parts coming in close apposition. You will be able to judge of the proper size of the pad by first fitting it to the sound axilla. I should also advise you to place a thick pad between the elbow and the side; otherwise, when you apply your bandages to that part, the elbow will be drawn inwards, and the humerus acting as a lever over the cushion in the axilla, will separate the portions of bone and prevent union. Next support the elbow and arm in a sling; you will find a very convenient sling in one made of mill or thick paste-board, or thick splint-leather, which should extend from the elbow to the fingers. You can model it to any sized or shaped limb by soaking it for a short time in hot water, and applying it wet; when it becomes cold it will retain its shape as long as required without further trouble. It should be supported by broad tape or pieces of rollers carried round the patient's neck, and lined with flannel to prevent its scratching. The great recommendation of this sling is its cheapness, and the steady uniform support which it affords to the limb. Should you however be unable to procure this kind of apparatus, you will find a handkerchief a very fair substitute; or, support the arm and hand in a sling, carry a roller vertically under the elbow and over the shoulder of the injured side twice or three times, or even oftener; you will thus effectually bring up the head of the bone to its proper place. Next carry another roller round the body at right angles to the latter; let this pass on the outside of the injured shoulder over the projecting portion of the deltoid muscle, round the body, and under the axilla of the opposite side. Carry it round in this way as far as it will go, and pin it firmly both in front and behind to the vertical roller; then bind the elbow and lower part of the arm to the side by a third roller, which should also be pinned both in front and behind to the vertical roller. You will thus keep the parts steady, prevent their moving, and also the bandage or roller slipping off the shoulder. Under any circumstances, whether you use your pasteboard splint, or a handkerchief, you had much better apply the rollers in the way I have here described.

Mr. Earle, at page 187 of his "Observations on Surgery," has given the following description of an apparatus invented by him for fractures of the clavicle, and those occurring about the shoulder joint:—

"It consists of a strong sleeve, made of double jean or linen cloth, which reaches from half way up the upper arm, is fitted to the elbow, when bent, to

an angle of about 75 degrees, and terminates like the sleeve of a straight-waistcoat in a *cul de sac*. This is applied to the arm, and secured by straps or a lace and eyelet holes; at the extremity of this sleeve a band of strong webbing is attached, which is passed round the body and fixed to a broad buckle, which is fastened to a belt of calf's skin, lined with wash leather, about three inches broad, which is passed round the injured arm, just below the insertion of the deltoid. The action of the sleeve and strap is to prevent any action in the arm or forearm, and to bind it firmly to the trunk. To support the elbow in any position which may be required, I employ a leather cap adapted to the extremity of the elbow, and hollowed out at its centre for the olecranon. This is put on over the sleeve, and from it two broad bands of webbing pass obliquely up to the opposite shoulder, one in front of the thorax, and the other behind. These bands are affixed to two broad buckles, which are attached to a leather shoulder-cap, made of calf-skin, well padded and lined with wash leather, which is adapted nicely to the shoulder by means of a buckle and strap, which passes under the axilla. By tightening or slackening these bands the elbow may either be confined close to the side, or brought forward, as in the position required for fractures of the clavicle or coracoid process, and it may be permanently and steadily fixed in that position. Another strap may be brought down from the anterior oblique strap, and passed round the wrist, to assist in supporting the weight of the extremity."

Mr. Chapman, in his Atlas, in describing this apparatus, observes,—“One objection, however, attaches to it; the cap upon which the sling depends, and by which the injured limb is supported, in one form of the bandage, rests upon the opposite shoulder joint, and throwing all the weight of the other limb upon it, presses on the joint painfully, and impedes its motion.” To obviate this inconvenience, he recommends the following contrivance, which you will find delineated at plate 8 of his Atlas, figure 2, and which consists of a pad for the axilla, suspended by a cap to cross the shoulder, and a long band of webbing to support the arm, and confine it to the body, the two ends of which are buckled in front and behind to a circlet slipped over the opposite arm, and resting chiefly on the scapula. The circlet and the shoulder cap are connected behind by a strap which crosses between them, and is buckled to the posterior part of the cap, to draw the shoulders back if necessary. It may be adapted to either side by reversing the band of webbing and transferring the cross-strap. The band is divided down the middle, and reunited by a lace at the back, to accommodate persons of different sizes.

Both these inventions are ingenious and well adapted to the purpose, but at the same time they are subject to the objection of being more complicated than necessary, and consequently more expensive. Should you employ either for fracture

of the neck of the scapula, you must add a pad between the elbow and the side, and likewise fix the arm by a roller carried round the body; but in most cases the paste-board splint, &c., which is a modification of Mr. John Bell's sling for the arm, as you will find by referring to the 99th plate in the seventh volume of Mr. Benjamin Bell's *System of Surgery*, will answer every purpose, and has this advantage, that you can make it yourselves, and adapt it to any sized patient.

M. Delpech, in the first volume of his “*Maladies Chirurgicales*,” remarks, that these accidents are usually accompanied with such severe contusion, that the latter is of more consequence than the fracture itself. The contusion is undoubtedly very considerable in some cases, but not in all; certainly not to the extent imagined by M. Delpech. In the case of my patient at the hospital, the contusion and swelling were comparatively slight, probably from the violence of her fall being in some measure broken by her head having first come in contact with the pavement. However, when the pain is very violent, and the symptoms of inflammation very high, you should subdue them by leeches, purgatives, and the application of cold lotions to the part, always bearing in mind that a certain degree of inflammation is necessary to repair the mischief, and that the quieter the patient is kept, and the less he is disturbed by purgative medicine for the first two or three days, the better.

PRACTICAL REMARKS ON CEPHALOTOMY AND GASTRO-HYSTEROTOMY.

By G. B. KNOWLES, F.L.S., Fellow of the Royal College of Surgeons of England; Professor of Botany and Materia Medica in Queen's College, and Surgeon to the Queen's Hospital, Birmingham.

An interesting case of Cæsarean operation having been reported in No. 25 of the present volume, by Frederick Cox, Esq., of Welford, I am induced to offer a few remarks upon the treatment adopted. The case, although terminating fatally, is detailed with a degree of candour which is highly creditable to Mr. Cox, and which it would be desirable to see more frequently imitated; reports of unsuccessful cases being usually as instructive as those which are followed by a more fortunate result. I trust, therefore, that in the comments which I shall deem it necessary to make, I shall give no offence to Mr. Cox, my object being rather to draw the attention of the profession to certain practical points which I consider to be of vital importance in the operation, than to reflect with any unkindly feeling upon that gentleman's management of the case.

If must be freely admitted that it is scarcely possible for the obstetric practitioner to be placed in a more anxious or responsible position than when he finds himself compelled, by deformity of the pelvis, to effect delivery either by sacrificing the life of the child, or by performing an operation which, in this country, with one solitary exception, has been invariably fatal to the mother. In such a case, the first thing to be