

discovered at the joint, and upon manipulation some motion was detected between the upper and lower portions of the humerus at about one-third of its length from the shoulder. It was concluded then that the upper third of the bone was dead and separate, and in a few days it was removed without difficulty. Above, the bone had separated at the epiphysis, and the joint itself did not clearly appear to be destroyed. After the operation the child slowly but steadily recovered, and she has now a useful arm, much shortened of course, but with some movement at the shoulder.

The remarkable feature of this case of acute necrosis complicated with pyæmia was the sudden and abrupt way in which the blood-poisoning, which set in so fiercely, and threatened to destroy forthwith, was checked in its course. It ran rapidly up to a certain point, and then seemed to stop at once.

Of all the local signs—perhaps of all signs without exception—indicating the course of the disease, I think the most trustworthy, at least in acute pyæmia, is the condition of the wound, where one exists. As the disease sets in its healthy characters are changed; the surface becomes paler and glassy, and perhaps dry, and the discharge is no longer laudable pus, but a thin, serous, or sanious fluid, usually scanty. But as the mischief abates, the wound and its discharge recover their healthy character. Granulations here and there appear, and pus is again seen bathing their surface. In these terrible cases nothing seems to me so full of hope as the establishment of healthy suppuration. It is pleasant, when day after day you approach the bedside, apprehending each time that to-morrow it will be vacant—it is encouraging, under such circumstances, to detect the formation of healthy pus, with the little red point of granulation cropping out here and there. When we see healthy pus coming from a wound we hardly require to be told that our patient is better.\*

(To be concluded.)

## ON AMPUTATION AT THE SHOULDER-JOINT.

By JAMES SPENCE, F.R.S.E.,

SURGEON TO THE QUEEN IN SCOTLAND, PROFESSOR OF SURGERY IN  
THE UNIVERSITY OF EDINBURGH.

IN an operation such as amputation at the shoulder-joint, so frequently resorted to on account of severe injuries, and in which the surgeon is consequently often forced to modify his procedure by the state of the injured parts, it would be difficult to affirm that any method was absolutely new or had never been performed from the necessity of accidental circumstances.

The method of amputating at the shoulder-joint, however, which I am about to bring under the notice of the profession is not one of those included amongst what are termed the methods of election or choice. These, although varied as to the modes of their performance, may, as regards their results, be reckoned as four in number—namely, 1st, the circular; 2nd, the oval; 3rd, the large deltoid flap; 4th, the double flap method. Of these, the first two are now so rarely practised that I need not further allude to them. The last two are those usually adopted, and they may be briefly described as follows.

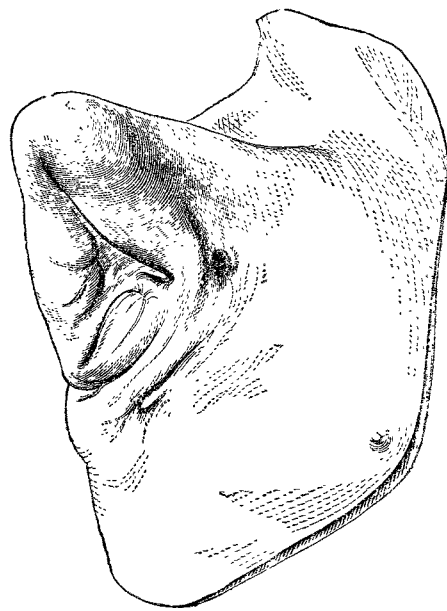
The former of the two, the large deltoid flap method, consists in cutting, either by transfixion or from without inwards, a large flap including nearly the whole of the deltoid muscle, raising it towards its scapular attachments so as to expose the joint and permit of disarticulation, and the formation of a short flap from the floor of the axilla to meet and unite with the large flap.

The double flap method consists in forming, either by transfixion or dissection, two nearly equal and slightly rounded flaps, their line of union after the completion of the operation being represented by a line drawn from the point of the acromion to the base of the axilla. This plan of operating is that generally adopted; for although the deltoid flap makes an excellent covering, and admits of great facility in dis-

articulation, yet the amount of exposed cut surface and the double line of cicatrix contrast unfavourably with the single central linear scar left by the double flap method. Moreover, the great length of tissue required in the deltoid flap cannot often be obtained in cases requiring amputation at the shoulder.

As regards the method by double flap, if we look at such an amputation when recently performed, especially if executed by cutting the textures from without inwards, nothing can look better than the result; the two flaps joining neatly in their central line, and sufficiently full to give roundness and to fill up the space under the acromion. But if we look at such a stump some time after the healing process has been effected, the form of the stump will be found much altered, not merely from atrophy of texture common to all stumps, but from retraction of the muscular constituents of the flaps. The fibres of the pectoralis major retracting towards the sternum, and those of the latissimus dorsi and teres major towards the scapula and spine, cause a tendency to separation, especially at the lower part of the line of union, and give rise to the formation of a deep ugly hollow under the acromion, as seen in the adjoining woodcut (Fig. 1).

FIG. 1.



In 1856, from a perusal of Professor Langenbeck's and M. Baudens' memoirs on excision of the shoulder for gunshot wounds, I was induced to adopt the method of excision by a single linear incision made down upon the head and neck of the humerus, beginning immediately external to the coracoid process, instead of the V-shaped incision then practised here. In performing the operation on the living subject, I was struck, not only by the ease with which disarticulation could thus be accomplished, but also by observing that, from the deltoid being divided so far forward, there was no trouble with bleeding from the trunk of the posterior circumflex artery, which in other methods is always divided and often proves troublesome. Ever since then I have performed excision by that method. In demonstrating the operation to my surgical class, I pointed out that it possessed another advantage—namely, that if, in proceeding to excise the head of the humerus, the injury or disease were found to be more extensive than anticipated, we could form—by simply carrying the incision back towards the posterior fold of the axilla, as I then expressed myself—a very tolerable stump. But when, after performing the excision, I completed the demonstration by converting the excision into an amputation, it struck me that the result would be even better than that of the ordinary method. Accordingly I determined to use it on the first suitable case which I met with.

Some short time afterwards two cases of injury were sent to my care requiring amputation at the shoulder: one the result of a railway accident, shattering and tearing the upper arm; the other, a gunshot wound shattering the tuberosities and shaft. In these two cases I carried out the plan, and the result was so perfect in both that I have always since resorted to it in every instance where the nature of the case admitted of its performance. Indeed, the only instances in which I could not perform it have been two: the one a case of secondary amputation for a burn, in which, from the state of the textures, I was compelled to form the flap entirely from

\* This observation is an old and valuable one. Thus, in speaking of the favourable symptoms in plague, Dr. Robert Williams mentions "the suppuration of the buboes." (Op. cit., 1841, p. 317.) See also Vincent's Observations on Surgical Practice, 1847, p. 105, and elsewhere.

the front; and the other a case requiring amputation from the presence of a malignant tumour, to which the skin was adherent, and where only two very small flaps could be obtained from the sound texture.

What I have already said might almost indicate the method proposed. But to describe it more distinctly and fully. Supposing the right arm to be the subject of amputation. The arm being slightly abducted, and the head of the humerus rotated outwards, if possible. With a broad strong bistoury I begin by cutting down upon the inner aspect of the head of the humerus, immediately external to the coracoid process, and carry the incision down through the clavicular fibres of the deltoid and pectoralis major muscles till I reach the humeral attachment of the latter muscle, which I divide. I then with a gentle curve carry my incision across and fairly through the lower fibres of the deltoid towards the posterior border of the axilla, unless the textures be much torn. I next mark out the line of the lower part of the inner section by carrying an incision, through the *skin and fat only*, from the point where my straight incision terminated, across the inside of the arm to meet the incision at the outer part. This ensures accuracy in the line of union, but is not essential. If the fibres of the deltoid have been thoroughly divided in the line of incision, the flap so marked out can be easily separated (by the point of the finger without further use of the knife) from the bone and joint, along with the posterior circumflex trunk, which enters its deep surface, and drawn upwards and backwards so as to expose the head and tuberosities. The tendinous insertions of the capsular muscles, the long head of the biceps, and the capsule are next divided by cutting directly on the tuberosities and head of the bone; and the broad subscapular tendon especially, being very fully exposed by the incision, can be much more easily and completely divided than in the double flap method. By keeping the large posterior flap out of the way by a broad copper spatula or the fingers of an assistant, and taking care to keep the edge of the knife close to the bone, as in excision, the trunk of the posterior circumflex is protected. The only vessel which bleeds is the anterior circumflex divided in the first incision, and here, if necessary, a pair of catch forceps can be placed on it at once. In regard to the axillary vessels, they can either be compressed by an assistant before completing the division of the soft part on the axillary aspect, or, as I often do in cases where it is wished to avoid all risk, by a few touches of the bistoury the vessel can be exposed and can then be tied and divided between two ligatures, so as to allow it to retract before dividing the other textures.

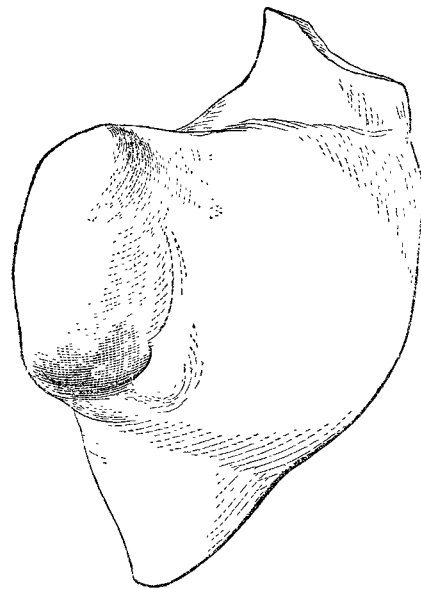
In this, as in all amputations, I make a point of gently drawing out the large nerves and cutting them so short that they cannot become implicated in the cicatrix, but may be so deeply covered as to save them from liability to irritation from external influences. In cases where the limb is very muscular I dissect the skin and fat from the deltoid at the lower part, and then divide the muscular fibres higher up by a second incision, so as to avoid redundancy of muscular tissue. After arresting bleeding I bring the edges together with a few points of suture, leaving an opening at the lower and back part, through which the ligatures are brought out and the free escape of blood and other discharge permitted.

The dressing I use is very simple, being merely a flat pad of lint secured by a six-tailed split cloth, the tails being tied on the opposite side of the body.

The advantages I claim for this plan are—1st. The fulness and better form of the stump left after the healing, as shown in the results. (Fig. 2.) 2nd. In this the posterior circumflex artery is not divided except in its small terminal branches in front, whereas, both in the large deltoid flap and the double flap methods, the trunk of the vessel is divided in the early steps of the operation, and, retracting, often gives rise to embarrassing hæmorrhage. Besides, in the case of the single flap method, the vitality of the flap must be seriously compromised, as it depends chiefly on that vessel for its arterial supply. 3rd. The great ease with which disarticulation can be accomplished.

In advocating the merits of any particular plan of operation we should be careful not to risk its reputation by claiming superiority for it, under *all* conditions, over every other plan, or ignoring its disadvantages in certain circumstances. There are cases in which I would prefer the operation by double flap, such as those for malignant tumour, where we wish to remove all the muscular tissue of the deltoid, and leave nothing but skin flaps. In such cases a single long flap dissected from the subjacent tissues, and depending entirely for nourishment on the vascular supply of its base, is more apt to slough than two

FIG. 2.



smaller ones. In a case of a large malignant tumour, for which I amputated at the shoulder about five weeks ago, and in which, along with the tumour, I removed the whole of the deltoid and a considerable portion of the great pectoral, I operated by dissecting a single large skin flap. But a very large portion of it sloughed, and though the case has gone on favourably, and the wound has nearly cicatrised, yet I feel satisfied that two smaller flaps would have given a better result; and I mention this case as an example of a class for which I think this plan of operating unsuitable. I may, however, say, after considerable experience in amputation at the shoulder-joint, that there are, I believe, very few cases in which the method I have been describing will not be found suitable, and where it is I have no hesitation in recommending it as being preferable to any other method I have ever practised.

Edinburgh, January 11th, 1867.

## REPORT OF A CASE OF PARALYTIC INSANITY, SUCCESSFULLY TREATED.

By WM. DOMETT STONE, M.D., F.R.C.S. ENG. (Exam.)

THE case here recorded is one of general paralysis with insanity, which came under my observation some time since, when medical superintendent of a lunatic asylum. I use the term "general paralysis" in preference to that of "general paresis," concurring with Dr. Blandford that as the meaning of the verb *παρημι* does not accord with the symptoms of the disease more than that of the verb *παρالىω*, it is better to retain the latter until we succeed in coining a word which will describe the disease accurately.

It has been asserted that this form of insanity is the most deadly disorder that attacks man. Only nine cases of recovery are, I believe, recorded; and it appears extremely doubtful whether these could be legitimately classed as general paralytics; for Dr. Blandford, in a lecture recently delivered at St. George's Hospital, remarked—"so fatal is this disease, that no one as yet has recorded a case of recovery." Esquirol—perhaps the highest authority on mental diseases—pronounced it to be incurable, which opinion has been endorsed by most psychologists of the present day. Such being the case, I submit that it is the duty of every man to publish the history and treatment of any case he may have the good fortune to see happily followed by a successful issue. This must be my explanation and apology, if there need be any, for placing the following case *in extenso* before the profession. Subjoined are the notes which were taken immediately after the patient's admission and during his stay in the asylum.

F. G—, single, aged twenty-six, of medium height and build, sallow complexion, and nervous temperament. Sup-