CLINICAL OBSERVATIONS

ON

THE HEALING OF BURNS AND ULCERS BY THE UNION OF GRANULATIONS.

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GENTLEMEN,—You will remember that this patient, Peter Matheson, a healthy young man aged 22, was brought to the Infirmary several weeks ago suffering from severe burns. He and his brother were attending to a steam-engine at Fauldhouse, when the boiler burst. His brother escaped with a fracture of the left thigh, and has already left us to resume his occupation. This patient, however, was not so speedily removed from the *débris*, and lay for some time with various parts of his body in contact with scalding bricks.

I have already pointed out to you the principles on which the treatment was conducted while the deep sloughs thus produced were separating. What may be called the boracic poultice—that is, moistened boracic lint covered by gutta-percha, which has been rendered aseptic and kept in position by a bandage of carbolised gauze—fulfils the indications of hastening the separation of the slough and rendering the process safe to the patient.

I have also taken the opportunity of comparing practically the progress which the different sores made under different dressings after the sloughs had separated. Those of you who have watched the case must have come to the conclusion that of all the methods used—antiseptics of various kinds, water-dressing, stimulating lotions and ointments—that which conduces most to the production of a healthy aspect and rapid healing is the application of the antiseptic principle by means of boracic lint, while the granulations are protected by dextrinised oiled silk. You would note, however, that many other conditions had to be taken into account. When the sore was situated on a part liable to frequent motion, as in the neighbourhood of a joint, it was absolutely necessary to apply retentive apparatus in the shape of splints and bandage. When tension was produced either from the wound lying over a bone, or from the skin in the neighbourhood not being movable and loose, or from the application of extension apparatus to prevent contractions, then, whatever the dressing, the healing was tedious and slow. All the burns, however, and they were many, have now healed, with the exception of two; and I wish to-day to draw your attention to a little operation which I have practised on these two, and which, I think, is capable of useful employment in a considerable number of cases.

One of these burns was situated over the upper part of the abdomen and the lower part of the thorax, in the left mammary line. It was originally more than four inches in diameter, being nearly circular, but at the time of operation had contracted to three inches.

I had attempted to hasten matters by grafting. Several of the grafts took, and were growing well, when suddenly one day, without rhyme or reason, they all sloughed, and involved in their destruction a considerable portion of the marginal cicatrix also. This is an accident which, in my experience, is not unfrequent. The new grafts and the epidermic growth which they provoke are, so to speak, of an exceedingly sensitive character. A very slight digestive disturbance, a little feverishness, as from a cold in the head, a trivial roughness of manipulation, is enough to destroy them; nay, as in this case, they will occasionally disappear without apparent provocation; and, if they do so, the growing epidermis round the circumference of the ulcer invariably sympathises more or less.

After this failure, I cast about for some means of hastening the march of events, and the procedure of which you now see the result occurred to me.

You have all of you, doubtless, heard of the process of healing by the third intention, by the union of granulations; but practically it is not often brought under your notice. Nevertheless, in the healing of large wounds, as after amputation and excision, it undoubtedly plays a

large part; and it is sometimes, though rarely, utilised when plastic operations fail to unite by the first intention. It was this process that I called to my aid. It was possible, the skin of the trunk being loose, to bring the margins of the sore into contact by forcible pressure. The point that remained doubtful was our ability to maintain them in this position sufficiently long to allow the union to be consolidated. Ordinary sutures would undoubtedly cut their way out in a day or two. Many years ago, I made an unsuccessful attempt with hare-lip pins. I determined now to employ the button-suture.

Having washed the sore carefully with boracic lotion, I operated under the spray, because, after the parts are drawn together, the wound ceases to be a superficial ulcer. I then entered the needle two inches from the sore, and brought it out at the margin, entered it again at the opposite margin, and brought it out two inches off. When the sutures had been drawn tight upon the buttons (of the largest size), the sore, originally three inches in diameter, was reduced to a line three inches long. It was then dressed with carbolised gauze. The dressings were changed on the fourth day, and, on the ninth, I removed the buttons, the sore being healed with the exception of little marks where the silver wire passing from the buttons had slightly cut the skin.

Encouraged by this success, I now attacked the second sore, which is situated on the shoulder. It was two inches and a half in diameter, besides new cicatrix about half an inch wide. One or two lessons were taught us by this operation. I folded up the wound with my finger and thumb, and then passed a suture deeply under it, and drew it tightly over two large buttons. On removing the manual pressure, it was at once evident to you that this method was not nearly so effectual as the one previously described, in which the skin only on each side was involved in the suture. The folded-up sides of the sore, instead of lying in contact, formed a deep hollow—assumed a V-shape. To remedy this, I passed sutures above and below by the former method, and so succeeded in bringing about exact apposition. Thinking that by the first suture the tension must have been greatly relaxed, I used very small buttons for the upper one.

It has not been found necessary to change the dressing till now, the seventh day after the operation, and you see the result. The upper suture has cut itself out, and is lying quite loose. The part of the wound where it was inserted has diminished in breadth by half an inch, but the line which the wire has cut has been added to it. Where the lowest large buttons were applied, the burn is healed, and opposite the central deep suture it is reduced to half an inch in breadth. We have therefore gained much ground, but not nearly so much as in the former remarkably successful operation, and, I think, entirely because the manner of performance was less efficient. I have treated in the same way, and with perfect success, two other ulcers of smaller size than these, one of a syphilitic character on the forearm, the other a strumous sore on the neck.

It is evident that a method which shortens the healing of a wound by weeks, as in the case you have before you, is of the greatest possible value. And I believe that it may also present other advantages. In burns, for example, it may sometimes be used to prevent contraction by approximating the margins in a direction which will not be injurious. The mere diminution in the amount of cicatrix is in itself a benefit.

It is not difficult to appreciate the circumstances under which this proceeding may be practised. It is essential, in the first place, that the granulations be brought into a thoroughly healthy state by medication suitable to the particular case. It seems to me that the somewhat exuberant hyperæmia which results from the use of antiseptics is very favourable to a successful issue, if it be not permitted to go too far. Constitutional treatment is, of course, necessary as a preliminary to any interference with constitutional sores.

In the next place, the sores must be so situated that the margins can be brought into apposition. Plainly the trunk of the body is in this respect most favourably circumstanced. But in any part, if this condition be fulfilled, whatever the pressure employed to do so, I believe the result will be good. You saw that I had here to use decided manual force.

Some surgeons hasten the healing of obstinate ulcers of the leg by making incisions around them. This appears to do good, partly because it increases the area and source of epidermic growth, partly because it brings within the range of contraction a larger quantity of movable skin. I think it possible that, in some cases, a combination of these operations might be made, the possibility of perfect adjustment being always presupposed.

Lastly, it is plainly necessary that the apparatus used be capable of sustaining the tension without producing ulceration. The buttons should be of the largest size, at least an inch long; and I have found the greatest benefit from the little projections on the side which Mr. Lister has recently added.