CLINICAL LECTURES

ON

THE TREATMENT OF OPERATION WOUNDS.

Delivered at St. Bartholomew's Hospital, London.

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LECTURE II.—On Rest and Ease—and Shock.

How, gentlemen, can you expect so delicate a process as that of the healing of a wound by the first intention, or by primary adhesion, to be perfected, unless you take every care to place it under the conditions most favourable to its completion?

Amongst such conditions, maintenance of rest holds the first place; not merely such rest as is obtained by position and by external support, but that entire rest of the parts apposed for union which is only ensured by complete stanching of blood and by drainage from the wound of all fluid which may be exuded from its surfaces.

You saw, last week, how careful we were not to close the wound left after an amputation at the fore-arm until all bleeding had ceased; and to some of you the delay may have seemed needless; but, if you have the slightest oozing of blood after the wound has been closed and dressed, you will be sure to have at least three disturbances of the surfaces which you desire should unite, and which disturbances are well-nigh certain to prevent immediate repair. You will have, first, the out-flow of blood, separating as it escapes the parts which should be at rest and in apposition; you will have, secondly, the clotting and subsequent contraction of the fibrine, causing further, though it be but slight, unrest; and you will have, thirdly, the disturbance which results from the disintegration of these blood collections. I am not speaking of bleedings which are considerable; I am referring to slight oozings which, unless guarded against, are apt to infect every wound, and are usually sufficient, by thus disquieting it, to prevent its immediate healing. Therefore, to secure rest, you must stop bleeding absolutely, and you must never close a wound (if it is to be closed) in the hope of its uniting by primary adhesion, until its surface is dry, or is glazing with the first exudation of plastic material.

With this care-taking, you will also be secure against that larger bleeding which has been termed "recurrent," to distinguish it from "secondary" hæmorrhage. In most cases, this bleeding, which occurs within the first twelve hours after an operation, is due to the surgeon leaving some vessel unsecured, one which, at the time of closing the wound, may have escaped detection, owing to the very slight oozing from its orifice. This misfortune should seldom occur, for, if it does, the operator has only himself to blame for the accident, and for the disturbance of the wound which will result from the treatment required to stop the bleeding. Practically, you may disregard it, that is, if you take the pains I recommend you to take in thoroughly drying a wound before closing it.

Now there are many ways in which, at an operation, vessels may be secured, and you may elect which you like of these. For my part, with few exceptions, I use torsion; but occasionally, as when a wound is to be left to heal by granulations, or in dealing with the dense tissues divided in excising a knee-joint, it is convenient, chiefly to save time, to secure the vessels with ligatures, with carbolised cat-gut, for example. Torsion is perfectly safe for all vessels, and, in my experience of its use, there has been no instance of its failing, and the two occasions on which only it has been inapplicable for main vessels have been those on which an artery has happened to be divided just at the point of its giving off several large branches. But torsion, like other operations, must be accurately practised, if it is to succeed. The twisting of vessels of some size, such as the radial and anterior tibial, or the brachial and femoral, is an easy process, for the artery is readily seized without inclusion of adjacent structures, and anyone can feel, by the cessation of resistance in the vessel, the rent with which the middle and inner coats give way when torsion is completed. But one often sees an operator fail to secure, at the first or second attempt, a small-sized artery, and almost invariably because sufficient care has not been taken to seize the vessel alone, avoiding the tissues around it, for, if these are held by the torsion forceps in addition to the artery, the twisting, as a rule, will not succeed. There are two good reasons, at least, for pre-

fering torsion to other methods for securing vessels, and, first and chiefly, because it leaves a wound perfectly safe against secondary hæmorrhage, for there is no risk of cutting through the outer coat, no ulcerative process, no detaching of a ligature; and, secondly, because it leaves a wound free from foreign bodies, such as acupuncture needles or ligatures; and perhaps you will for a moment reflect, apart from the strictly surgical view of the question, how greatly it must ease the mind of a patient to know that no such foreign bodies have eventually to be taken away from the wound—an ease he would the more appreciate, did he know how painful a process the removal of a ligature sometimes is. And how can you hope that a wound will heal if crowded, as wounds sometimes are, with ligatures? Here is a case just related by Esmarch, in which thirty-five were left after an operation;* primary repair is out of the question under such circumstances, unless, indeed, the ligatures are of cat-gut, the use of which is the next best thing to doing away with them altogether.

The torsion of vessels and the drying of the surfaces will take time, but the time is not to be grudged, and whilst thus engaged observe the greatest care in handling the wound, avoid holding its edges with forceps, guard against bruising of its tissues, and, when all bleeding has been stopped, carefully arrange the wound in the position it is to be left in for healing.

This question of position has to be considered in every case. Some wounds, indeed, arrange themselves, falling into apposition; those about the face often do so. In providing for the subsequent quiet of other wounds, the movements of respiration have to be thought of; after the removal of a breast, for example. Most often the position has to be chosen, so as to prevent muscular movements in the limbs from interfering with the perfect quiet which the process of repair requires; and it has been a matter of some trouble to get over the practical difficulties arising in this way during recovery from amputation wounds, but we have now succeeded, by variously contrived splints and swinging apparatus, in ensuring for these wounds a position which gives quiet and ease, and allows of their being subsequently dressed without disturbance. The appliances we employ vary for the different cases; but one of them you may see in use in Harley Ward for a primary amputation at the fore-arm.

Let us follow the steps in the dressing of this amputation wound. An angular splint, provided with two outriggers (to enable us to swing the arm), had been prepared, having been measured and fitted for the case; it was padded, and over the pad a thick layer of cotton-wool was laid, and over this again some lint, which had been soaked in carbolised oil (1 in 12). On this splint the arm was laid as soon as bleeding had been arrested, and, by its weight, it pressed down the layer of cotton-wool, and thus moulded for itself an even support, and this, let me add, is the only way in which you can get a limb comfortably and uniformly supported on any splint. The arm proper was then protected with cotton-wool, and was bandaged to the upper division of the support. The wound was then washed with carboloid acid lotion (one in thirty), and the edges were brought together with silver wire sutures.

And now two further steps were taken to ensure rest for the wound of the fore-arm during the progress of its repair.

First, one of these silver drainage-tubes was passed into the wound at its outer angle, and was left to hold itself in position by means of this spring, which can be protruded from its end. We had already guarded against the oozing of blood, and our present object was to provide a free outlet for the fluid which is sure to exude from the surfaces of such a wound as this during the twenty-four hours following the operation. If this fluid does not flow off as it is secreted, it soon distends the wound, moving and, of course, displacing its surfaces and destroying all chance of immediate union, and, indeed, is sometimes sufficiently irritating, even when modified by the action upon it of the carboloid lotion, to be the cause, if allowed to remain in the wound, of local and sometimes of constitutional disturbance. It is of the first importance to ensure its escape if, as I have just said, immediate union is to be obtained, and it is for this purpose that a drainage-tube is inserted. But, in the second place, we have to arrange the dressing so that there shall be no disturbance of the operation wound when its coverings are changed. So you may have noticed that a piece of lint, soaked in carbolised oil, was laid over the stump, not under it, and that it was folded and so arranged as to be easily lifted off, when necessary. Over this some cotton-wool was placed, and then a few turns of a bandage secured the fore-arm to the splint. The patient was carefully removed to his ward; and, as soon as he was put to bed, the arm was swung in the usual way, with a four-pound case of shot as a counter-weight.

* So dass nur 35 in der Wunde zurückblieben. *Sammlung Klinischer Vorträge*, page 374.

The swinging of an extremity which has been operated on, and its support by a well-fitted splint, should be so contrived that no change will be needed for at least three or four days, and, if your appliances have been well adjusted, it will not be necessary to interfere with them until the patient is well. It is not possible for me now to explain in detail the contrivances we employ;* you must observe them for yourselves. You will see how they vary for different cases; but you will always notice that they have for their one aim rest and ease, and the avoidance of all disturbance of the wound.

This patient got well in due course, the wound uniting, in great part of its extent, by primary adhesion. Following our usual practice, the dressings were renewed twenty-four hours after the operation, when the drainage-tube, having served its purpose, was removed. In effecting this change, the fore-arm was steadily by hand-pressure after the bandage had been cut through and turned aside, and the cotton-wool lifted off; the oiled lint was then removed from the wound, which was for some time exposed to the air whilst the tube was being withdrawn, and while its edges and the lint beneath it were being oiled, a camel-hair brush being used for this purpose. The wound was then re-covered with some lint soaked in carbolised oil, and the cotton-wool and the bandage were then replaced. Whilst making these changes, the wound was not in the least disturbed, nor did the patient suffer any pain or discomfort.

Whilst thus providing for the maintenance of rest, ease is, in some measure, secured. Such ease as comes to a patient from his being able to move as much as he pleases, without hurt from shaking or displacing of his wound; for it is our rule, within reasonable limits, to allow a patient freedom in this respect—it is not necessary to tell him to lie still. It is very rarely a patient is troubled with pain; but, if he does complain, you must always attend to, and, if possible, relieve him, and you should never put him off by merely suggesting that the pain is of no consequence, or that it will presently pass away. You will often find that some trifling change will give relief; the level at which a limb is swung may be altered, a supporting pillow may be placed here or there, or an over-tight bandage may be cut; indeed, with some such contriving, and by letting the patient shift into almost any position, we have never experienced difficulty in ensuring ease. There is beyond this the repose, which, if nature refuses it, should be secured by treatment; and, as a rule, which may rarely admit of an exception, we always, unless natural sleep is obtained, make free use of sedatives. Occasionally patients are sick, not that there is actual vomiting, after taking chloroform; and, even if they are not, I think it best to avoid running any risk of disturbing the stomach, and it is for this reason only that the sedative preferred is usually an injection of morphia; but, in some way, a good night's rest should be made sure of.

As the patients are inclined, so food is given, or is not; usually for a day or two a light diet is sufficient; but, as soon as possible, they are allowed to fall into their usual food habits, with, however, only a very moderate allowance of stimulants. None of my operation cases are placed on wine or spirits, and they do not even get their ale before they themselves ask for it.

With the exception of one case of pyæmia, for the occurrence of which I hold myself blameable, and of a few outbreaks of erysipelas, only one of which assumed serious proportions before convalescence was established, there has really been no complication requiring treatment after my operations. The patients, lying at ease, simply get well; and this leads me to tell you what we learnt from these patients respecting that which is commonly called shock and reaction. A record is kept for each case of the pulse, temperature, and respiration, and the notes for this record are taken twice daily, morning and evening, on some one day at least before, on the day of the operation, and for as many days after as in each case may seem desirable, and the facts thus collected have led me to modify very considerably the views I had been taught to hold respecting the condition of a patient after a great operation. I will go so far as to say that I have not seen any instance of shock following such a proceeding, at least of such shock as gave us any sign of its presence either through the pulse, the temperature, or the respiration; and I doubt if, in what may be termed a natural progress after an operation, shock has any part. If there should be any great depression, it will, I believe, be found to depend upon something beyond and irrespective of a carefully conducted operation—upon some diseased or merely feeble organ, some undue loss of blood, some poisoning of the system, as from certain extravasations; something which a thorough examination of a patient before venturing to operate should enable us to avoid, or something which exists independently of, although its effects run a parallel course with and thus influence, the after progress of a case. Thus, in the instance in which I removed a calculus from the

kidney, the patient was weak and feeble in the extreme, and it is easy to say that she never rallied from the operation; but, to my mind, it was rather that she went on slowly dying, just as though no operation had intervened. You will see that I do not speak lightly in thus ignoring shock, by referring to the current volume of our Reports, which contains the evidence upon which this conclusion is based, which evidence is positive as to the effect on the system of operations when practised in cases properly selected. It is curious to notice, however, that some trifling worry will sometimes send up the pulse and temperature in a remarkable manner; some passing excitement has thus made a difference of twenty-seven beats in the pulse and of four degrees in the temperature, and yet you will see men admitted after severe injuries—just the cases which one expects to find suffering from shock, and, unless any fatal lesion has been sustained, there will be a normal condition of the three great signs which I have referred to. And, if we find no symptoms which admit of being recorded as indicating shock after an operation, it is scarcely desirable to speak of a subsequent reaction, and you will consequently observe that, in our notes, we prefer to use the term over-action as indicating the constitutional condition during the first few days following an operation—whilst, however, we sometimes record a state of what we term subaction during the patient's convalescence. Now, the import of these terms requires brief consideration.

REMARKS

ON

ENLARGEMENT OF THE BRONCHIAL GLANDS.*

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ENLARGEMENT of the bronchial glands is frequently found in *post obitum* examinations, and has been noticed by several anatomists, amongst them, many years ago, by Dr. Harrison, of Dublin, in his valuable book on the *Anatomy of the Arteries*.

But, respecting the clinical symptoms of the bronchial adenopathy, this affection, both in children and in adults, has been only described in its most advanced stages, in its most severe forms, when the windpipe, by the pressure which it undergoes, is narrowed, and a great obstacle to the passage of air is produced. In many cases, however, this enlargement of the bronchial glands is not attended with the symptoms which belong to the worst degree of the disease, which only had been hitherto described. Nevertheless, this milder and usually unknown form gives rise to peculiar troubles of respiration; it is attended by peculiar symptoms, and it may be detected during life by positive signs.

Almost all the diseases of the respiratory organs may be complicated with enlargement of the bronchial glands; and very often this enlargement unites its phenomenal expression with that of other affections, and can claim a part in the modifications of the respiratory murmur, and of the resonance of the chest observed in these diseases.

Of course, the signs of the bronchial adenopathy are generally to be found in the region corresponding to the bronchial glands, behind the upper part of the manubrium of the sternum, the sterno-clavicular, and the first sterno-costal joints, and the inner part of the two first intercostal spaces. Behind, the laminae of the first four dorsal vertebrae correspond to the same organs.

When these glands are enlarged, you can find in those points a sound duller, higher than natural, generally duller on one side than on the other, with impaired elasticity. With these modifications of the resonance, often very perceptible, you may find weakness, roughness of the respiratory murmur in the whole of a lung, if the main bronchial tube be compressed, or in a part of it, if one only of the secondary bronchial divisions. This weakness of respiration, often very evident in parts where the sound is normal and no alteration of tissue is to be suspected, which is not at all uncommon, cannot be explained satisfactorily without the interference of bronchial pressure. This weakness is usually connected with acuteness of the respiratory sound and protracted expiration. Near the origin of the bronchial tubes a rough, sibilant, or rubbing sound is pretty often to be heard. In the same point there often may be heard an expiratory souffle resounding over a

* For some notes on these, see the BRITISH MEDICAL JOURNAL for October.

* Read before the Medical Section at the Annual Meeting of the British Medical Association in London, August 1873.