CLINICAL LECTURES

ON

THE TREATMENT OF OPERATION WOUNDS.

Delivered at St. Bartholomew's Hospital, London.

BY GEORGE W. CALLENDER, F.R.S.,

Surgeon to the Hospital.

LECTURE III.—On Warmth, Dryness, and Cleanliness.

GENTLEMEN,—In over-action, then, I wish you to recognise that group of symptoms which shows, not that nature is recovering from any shock, but that she is busy over the repair of some injury. It never rises to any material disturbance, irrespective of complications; it is no turmoil, but only a quickening of the system to mend its hurt, for it is during this stage of over-action that a wound is actually healed in a majority of cases. You will notice the qualification, for it occasionally happens, in a small minority of cases, that a patient does recover from an operation without a trace of over-action, and even with such lowering of the pulse, if it be only a few beats, and such depression of the temperature, though rarely beyond a few points, yet so marked as to have induced us to use for this progress the second term which I have mentioned to you, and to call it a convalescence with subaction; one without the ordinary constitutional disturbance; one from which the prognosis is invariably favourable; one which is characterised by a kind of laziness of the system, just as the patient who exhibits it is usually of a phlegmatic temperament, not easily roused or excited, and troubling himself little about his ailments.

You must not suppose, because it is put to you in this way, I would have you imagine that no such thing as shock exists. No doubt it is a condition frequently met with. I only want you distinctly to understand that shock is due to something more than a mere operation, to some emotional condition, or, as before mentioned, to some waste of blood, or to some organic weakness; that, just as a patient is thus weighted, so is he apt to suffer unduly after an operation; and that it is the sign he gives of being thus burdened which constitutes what is commonly called shock. Reflect upon what I have already told you, that none of our patients (all of whom, it should be recollected, have taken chloroform or ether) have given signs of suffering from shock; and, whilst we may have been fortunate in this respect where injuries have been concerned, and where we have had to deal with our cases without power of choice, in the other and far larger series of operations it is not in good fortune, but it is in the selection and in the preparation of patients that we have gained such immunity from shock as to have grown into the belief that after an operation, performed under chloroform, it may be practically disregarded. At least you may be sure of this, that you will fail to find anything which can be recognised as indicating shock through the pulse, the temperature, or the respiration. Let us, then, set aside shock as a factor to be considered after an operation—after one, that is to say, duly prepared for and properly performed.

And now let me ask your attention to the necessity of providing for warmth and for dryness. You will notice that the wounds are thickly covered with cotton-wool. This gives protection. I know not if it have any influence in guarding a wound from infection; and as the wounds are freely exposed at intervals, during redressing, to the air of the wards, which travels whither it pleases, and as the protecting wool is thus for a time withdrawn, we are not in a position to decide this question; but its great use is to maintain warmth. I lay stress on this; without warmth, that is continuous warmth—not the rewarming of a wound which has been allowed to chill, you will have one chance the less of securing primary repair; and, whilst on this question of warmth, let me remind you that you should be sure that the body, generally, is kept warm. There should be no exposure to cold, or risk of exposure; and, indeed, after some operations, as about the abdomen, and about the chest particularly, it is my rule to envelope large tracks with cotton-wool, so soon as the wound is closed and dressed, to guard as far as possible against hurt from cold before the patient is removed to bed, or during subsequent examinations of the wound. And with warmth goes dryness. Troublesome as it may be to guard against, moisture from

dressings or from discharge should never be allowed around a wound; if nothing worse come from it, the patient will be irritated by it, and then it is an occasional cause of erythema, and, if neglected, of actual excoriation. But as a wound, say after an amputation at the thigh, must not be disturbed for at least the first few days, we can render moisture, especially if from discharge, innocuous, by painting the parts which it affects with carbolic oil; and if ever there be any probability that discharge will get underneath a patient so as to hurt or irritate him, you will notice that directions are given, on the sound principle of prevention, for his bed, before he is placed on it, to be covered with oxide of zinc powder, which usually suffices to ensure thorough dryness until the linen can be safely changed.

With warmth and dryness let me name ventilation; free exposure, that is to say, not of the wound, but of the surroundings of the wound, to the air of the ward. After many operations this is easily provided for, but perhaps you will notice the means we take to secure a ventilating shaft from the foot of the bedstead, for operations on the lower extremities. We clamp a vertical plate of perforated iron, about three inches wide, to the foot of the bedstead. At right angles to the top of this, two parallel iron bars, furnished with two outriggers, are attached; these reach half or two-thirds the length of the bed, with a clearance of eighteen inches from the mattress, more or less, according to the requirements of particular cases. This apparatus serves three purposes; it supports the bed-clothes, and, being open at the lower end, and thus allowing free access of air, prevents the air about the dressings from becoming what is popularly called "close;" it enables us to swing a limb if necessary (doing away with the ordinary cradle, the upright supports of which are very inconvenient to a patient), and it allows, in addition to the play of the swing, considerable freedom of movement; this is due to the spring in the iron rods, which thus, speaking from experience, assist in preventing disturbance of the wound, the entire swinging apparatus yielding to and thus breaking the effect of the slightest jar. At the foot of this cradle, to refer once more to warmth, your patient will usually like to find a tin of hot water. This shaft insures what may be termed air-cleanliness, providing for the free access of the air of the ward to the surroundings of the wound, and you will have no hesitation in recognising its usefulness, after you have tested it by removing the bed-clothes from an amputated thigh which has, and from one which has not, been thus ventilated.

It seems well nigh superfluous for me to tell you that cleanliness must be assiduously cared for; but remember that it must be of an active character, not, that is to say, the cleanliness which consists only in the removal of offensive discharges, but that which prevents the possibility of their occurrence. There never ought to be the slightest ill odour about any wound, and my present object is to assure you that a very simple method of wound-dressing meets all practical requirements in this respect. To keep a wound sweet and clean, in other words, to prevent the decomposition of any discharge from interfering with repair, the cut surfaces are washed, before being brought together, with a solution of carbolic acid in water, and are then dressed as in the case of amputation at the forearm, which we have lately been watching, and to which I referred in my last lecture. Not that carbolic acid is the only agent of service in this way, but it is one which is convenient in practice, and is not unpleasant to the patient. You ought to know that it has been used in our wards for many years. It was first sent to us with a request that we would give it a trial, during the winter session of 1862-63; and Mr. Edlin, who was then house-surgeon for Sir James Paget, used it, as we still apply it, as a simple dressing for wounds, and from that time to the present we have continued to employ it. It certainly keeps discharge from decomposing, and favours the repair of wounds by obviating the irritation which might otherwise arise from this cause, but you will observe that we do not use it for the purpose of preventing the access of ordinary air to the wound-surfaces; wounds, whilst being dressed, are freely exposed, and I do not object to thus subjecting them to the influences, whatever they may be, of the air of the ward. It is important that you should remember this, because it is certain that we get all the help worth having from the use of carbolic acid, or other similar agents, without having to resort to any complicated method of wound-dressing—and, in practice, simplicity of treatment is of the first importance.

Much might be said respecting the handling of wounds. We are indebted to several surgeons for their recent advocacy of wound cleanliness; we owe them, I think, greater thanks for showing us, by their practice, how much is gained by personal care and watchfulness. I advise you to look closely after a wound, remove with gentlest handling the various dressings, and, in cleansing it of discharge, employ, as you see us daily using in the wards, these camel-hair brushes. They are easily kept clean in a solution of carbolic acid in spirits of wine, or their cost is so trifling that a new one may be used for each dressing; and

you will find them soft and pliable for use over tender surfaces, and for cleansing deep wounds otherwise difficult of access.

You will expect me to tell you, more definitely than I have as yet, the extent to which you may look for healing of a wound by primary adhesion of its surfaces. You may, I believe, reckon upon obtaining this result whenever you can keep the surfaces which are to be united in accurate apposition; if this be impracticable, the wound must be filled up by a process of granulation. If you consider the difficulty of getting, for example, the flaps of an amputation exactly applied, you will understand that, although the entire margin of an amputation-wound will unite at once, you cannot reasonably anticipate that the deeper parts of the wound, save in rare cases, will be healed, except by the gradual filling up of the interstices, which must here and there exist, by some process which takes time, as by granulation, and during which process you are not unlikely to have some, although it may be but little, discharge of laudable pus. It is the necessity of leaving the parts at rest for the completion of this process which chiefly compels us to keep a patient in bed, after an amputation, for three weeks or longer, for it is not prudent to allow the parts to be in the least disturbed until the repair has become what we may term consolidated. At the end of this rest-period, any sutures which have been used (and I prefer after most operations the use of silver wire, as it is little irritating and holds better than catgut, which is apt to give way under any strain) should be removed, unless for some reason it has been necessary to take them out at an earlier period, and, in so doing, you should be careful, if wire have been employed, after cutting each one, to turn back the end distant from the twist, so that the metal may be withdrawn smoothly and without pain.

During all the progress of wound-healing, carbolised oil dressings may be continued. I have only once had trouble from their use, and that was in a case of excision of the knee, the boy apparently suffering constitutionally from the action of the acid upon the system; at least, we got on much better when the use of the acid was discontinued. But we are not tied to this particular dressing, and we sometimes substitute for it warm water applications, or we employ a solution of sulphate of zinc or some other remedy, if a wound be open, and if its granulations require a change of treatment.

If I seem to you to dwell too much upon these details, let me remind you that it is impossible to be too careful about little things; upon the right management of these it is that the comfort of your patient and the result of an operation largely depend; and, if you are to make the recovery of a patient from a capital operation well-nigh a certainty, you must, as I said at first, leave nothing to chance. And, of course, what holds good of cutting operations is equally true for those practised by help of the *écraseur*, by galvanic cautery, or in other ways; only I do not now refer so much to these, because, from the nature of such procedures, you cannot expect them to be followed by the rapidity of repair which you may get under more favourable conditions, and the measures for obtaining which we are now considering. And it is equally true for injuries; for, although amongst the thirty-five amputations I set out by referring to six were primary, or for injury, there were admitted into the same wards, during the time my amputation cases were under treatment, twenty-eight compound fractures of bones of the leg, arm, or thigh, all of which recovered, and amongst which were fractures involving the elbow, knee, and ankle-joints which would certainly, in years gone by, have added to the list of primary amputations.

What I am telling you is not the story of any new plan of treatment; I am telling you what you may reasonably expect to accomplish by strictly adhering to the well-known principles and practice of surgery. If you are, as you should be, attentive observers of nature, you will see how this practice accords with her processes, and how it has come to us as the result of such observations. Look at any cut of little size—does nature attempt its repair before the bleeding has ceased? Is the wound at rest, is it free from pain, is it sweet and clean? It is all this if it is healing; and this is what you have to help nature to secure for her larger hurts, and you can do so if you will only take the pains. This is a trouble and a great tax upon your time, but it will ensure your obtaining good results after great surgical operations.

FRACTURE OF BOTH PATELLÆ FROM MUSCULAR ACTION.

IN 1870, a publican and builder, well known in this town, from mistaking the lower step in coming down stairs, transversely fractured both patellæ. He was many months in getting the free use of his knees, but he recovered without any limp.

THOMAS GODFREY, F.R.C.S., Herne Bay.

CLINICAL LECTURE

ON

A CASE OF ANEURISM OF THE ARCH OF THE AORTA TREATED BY GALVANO-PUNCTURE.

Delivered at University College Hospital.

By H. CHARLTON BASTIAN, M.D., F.R.S., F.R.C.P.,

Professor of Pathological Anatomy in University College, London; Physician to University College Hospital; and Senior Assistant-Physician to the National Hospital for the Paralysed and Epileptic.

PART I.

GENTLEMEN,—We have recently had in Ward 4 a patient suffering from aneurism of the arch of the aorta, who was treated by galvano-puncture. Seeing that the method of treatment is as yet comparatively novel, and considering the gravity of the affection for the relief of which we have recourse to it, it is especially desirable that such cases, as they occur, should be carefully considered.

R. W. Faraday, aged 53, single, was admitted on September 28th.

Previous History.—He was born in Westmorland, and lived in this country till his twenty-ninth year, when he went to the United States, and continued to live in Virginia till the present year. He had turned his hand to all sorts of employment. He had been accustomed to make great efforts of strength, and had been much exposed to the weather at times. His general health had been very good; he said he had not taken a dose of medicine for forty years. During the last six years, he had occasionally suffered from shooting pains, "like tooth-ache," in different parts of his body, but chiefly in the lower limbs. These pains might last for twenty-four hours, and then vanish for two weeks or more. He never had rheumatic fever. There was no history of syphilis. His habits had been temperate.

Present Illness.—Ten years ago, his pulse was noticed to beat irregularly, "going twice and stopping once," though he never suffered from palpitation. Two years ago, he first noticed a small swelling, of about the circumference of a shilling at the base and very slightly elevated, at the bottom of his neck. It did not throb, and caused no pain; he felt it accidentally. He never experienced any sensation of "something giving" in the chest. The swelling scarcely increased at all during the first twelve months, though about six months ago its circumference at the base had reached the size of a crown-piece. During the last month, it had been enlarging rapidly on the right side of the sternum and below the inner end of the clavicle; and during the same time he had suffered from occasional slight pains in the occipital region. For a shorter time, he had had a sort of aching pain in both shoulders.

State on Admission.—The patient is thin, sparely built, though of fair muscular development, and 5 feet 8½ inches in height. He is rather pale, but has no expression of pain or anxiety. There is no turgescence of the neck, or lividity. He sits up and walks about without any inconvenience. The chest is cylindrical in shape, and fairly well developed. The costal angle is open and well formed. The direction of the ribs is normal. The intercostal spaces are tolerably wide. At the upper part of the sternum, and extending a little to the right under the clavicle, is a somewhat pyriform swelling, rounded at the upper and smaller extremity, where it projects over the supra-sternal notch, and fading away gradually as it passes downwards. Its length is three inches and a quarter, and its greater breadth about two inches. It occupies the part of the sternum above the level of the lower border of the second rib on the right side. The upper part has no osseous structure over it, and the covering appears to be very thin. In this part of the swelling there is a strong expansile pulsation; but the pulsation becomes less marked as we pass downwards, and is scarcely perceptible at the lower part. The skin over the round end is a little injected; it is not tender, and is quite cool.

The upper part of the left front of the *thorax* seems to expand more than the right; and this is confirmed by the measure. The circumference of each side at the level of the axilla is 17½ inches; below the nipple, right 16½, left 15½. The movement of the left at the base is quite as great as that of the right side. On light percussion, the whole part occupied by the swelling is high pitched and resistant; and the percussion-note is deficient also at the inner part of the first left interspace—which does not appear to be occupied by any morbid swelling, although it is rather full, whilst other spaces on this side are a little depressed. The percussion-note over the rest of the front is normal. Liver-dulness begins just below the sixth rib, and extends to the margin of the thorax. Inspiration is less loud and somewhat higher pitched at the right lung apex than at the left. The breathing at the bases is similar in character on the two sides. In the back, the per-