CLINICAL LECTURE

ON THE

TREATMENT OF WOUNDS WITHOUT DRESSINGS, ON SUTURES AND ACUPRESSURE.

Delivered in Addenbrooke's Hospital, Cambridge.

BY

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THERE is, perhaps, no branch of our art which presents greater opportunities for good than the treatment of wounds, as there is probably none in which greater mischief has been conceived and executed—none in which meddlesomeness has proved so pernicious. Read, and you will be appalled at, the horrible accounts of the barbarisms practised by our forefathers with their setons, tents, and irritating unguents, which they thought fit to cram into every wound; the practice being based, as many bad practices are, upon monstrous and absurd theories. Truly, the present generation of surgeons have a hard task to make amends for the evils done by their predecessors; and let them not be too sure that they are not perpetuating some of those evils. Let us not be content to rest under the stigma of that question which, unfortunately, is more often asked than satisfactorily answered—"Do you ever see the wounds after amputation, removal of tumours, and other large operations, heal up by first intention?" The very possibility of such a question is an opprobrium to which we ought not tamely to submit; especially as there can be little doubt that, if they were properly treated, these wounds, in the majority of cases, would heal at once. I beg you, then, not to rest satisfied with the present modes of treatment, and urge you to use your best efforts to improve them, and, at any rate, to give a careful consideration to the suggestions for better management of wounds which may from time to time be made. Do not despise small hints; for good surgery has much dependence upon attention to little matters.

What is the great requisite—the *sine quâ non*—for the immediate union of wounds? Obviously, *adaptation of the cut surfaces*. Unless these are placed in apposition, they cannot easily unite; and, if they are placed in apposition, I apprehend they will, as a rule, unite. Hence the want of union in a wound is commonly proportionate to the want of apposition of the surfaces; and one great object in the treatment must be to secure as exact an apposition of the cut surfaces as possible, and to reduce to the minimum all substances—blood, dressings, ligatures, etc.—that may intervene between them and keep them apart. In the case of small and superficial wounds, there is little difficulty about this. Some simple method answers; and they usually heal at once.

In the case of larger wounds, we usually rely upon the suture; and I know of no better means of effecting the purpose. The twisted suture is probably the best form, because it exerts an influence over a larger surface than any other suture. If the common suture be used, thread is quite as good, if not a better material, than wire. I have found that, if the parts be at all upon the stretch, the thread holds its ground longer, and causes less irritation and less ulceration of the skin, than the wire. I tested this by inserting thread and wire sutures alternately in the same wound; and the wires, in each instance, cut their way out sooner than the threads. The threads should be so inserted that the edges of the skin are brought into actual contact by them, without any intervening fat or other tissue; and they should not be tied tight—*i. e.*, the portion of skin included in the knot should not be strangulated or even injuriously compressed. With this precaution, they will excite little or no irritation, unless there be tension of the skin, in which case, as I have said, they will cause less irritation than wires.

When a wound has been carefully closed by sutures, no other application is needed. Plasters, lint, unguents, water-dressing, etc., are not needed, and should, therefore, not be used. They will not maintain any closer apposition even of the deeper parts of the wounds than the sutures have already done. If there be blood or other foreign substances between the cut surfaces, this will not be prevented or even diminished by external appliances. It is very difficult to adjust pressure accurately enough on a large wound to prevent the oozing of blood; and, unless it is well applied, it is a sure cause of pain and inflammation. Slight uniform pressure might be serviceable; the well-doing of superficial wounds, which are simply bound up and sealed by their blood, indicates that it would: but, in larger wounds, I have found that pressure applied

in various ways, and as carefully as I could, did, on the whole, more harm than good. I have, therefore, for many years, been in the habit of leaving the wounds after operations, with their edges approximated by sutures, quite uncovered and dry. The part is thus cool, and free from any external source of irritation. To the advantage of enabling us to see the state of the wound and of the skin around, this plan adds the very great comfort to the patient that there are no applications to be removed, no dressing to be done. That grave addition to the distress following an operation is spared. Warm-water dressing or a poultice, after a few days, may be desirable. We rarely resort to any other means in this hospital, and have had good reason to be satisfied with our non-interference. I am glad to learn that the same plan is being tried in some other hospitals, and with good result.

"But," I am sometimes asked, "is it not better to exclude the air; is not the air a source of irritation; is not the well doing of subcutaneous wounds due, in great measure, to the exclusion of air?" To this I reply, that it is certainly well to exclude air from the interior of the wound, where it keeps the surfaces apart and promotes decomposition of the fluids, and, perhaps, of the solids. On the surface of the wound, however—that is, on the skin—it does not act as an irritant; and we should scarcely expect that it would. We have long been in the habit of leaving wounds of the face uncovered, and they usually heal remarkably well. Why should we not follow the same practice in other parts of the body?

One of the great difficulties in the treatment of wounds is hæmorrhage. To arrest the flow from the larger vessels is, of course, imperative; but, unless great care be taken to secure the small vessels, blood will ooze into the wound after the patient is in bed, separating the surfaces, preventing their union, and proving a source of irritation, even if it does not necessitate the reopening of the wound to prevent further loss. I recommend you, therefore, to give much attention to this; to rub the cut surface over rather firmly with the sponge, especially in the holes and corners and between the muscles, so as to cause the vessels which may have temporarily contracted and shut up their mouths to open up and be secured. For this purpose, the LIGATURE—the greatest addition ever made to surgery—is perfectly efficient. Made of good material, and tied tight, it never fails, or very rarely. Secondary hæmorrhage is, therefore, I believe, almost invariably the surgeon's fault. He has either not tied vessels enough, or not tied them tightly enough. You will not be surprised, then, that I have been unwilling to abandon so trusty an aid where the peril is so great, and have been timid in resorting to any other means.

Still the ligature has its evils. It is a foreign body in the wound; and its tight application causes the strangulation of a given portion of tissue included in and extending beyond its knot. Somewhat magnified these evils may have been; but we cannot altogether shut our eyes to them; and our success in the treatment of wounds is certainly not such as to justify our ignoring what may be improvements in our methods. I have ventured, therefore, as you have seen, to give Professor Simpson's ACUPRESSURE a trial, employing it after several operations, including removal of the breast and amputation of the forearm and thigh. In most instances, I have given the needle a twist after its insertion, as recommended by Dr. Keith and Professor Pirie of Aberdeen, so as to secure more effectual pressure. You have probably been surprised how easily and quickly the vessels are secured even by one who is not much practised in it; and, attaching much importance, as I do, to *tightness* in the tying of ligatures, I have certainly been surprised at the facility with which hæmorrhage is arrested by the moderate pressure of the needle. As a means of preventing bleeding, it has been quite successful in the cases in which I have used it. There has been no hæmorrhage in either case. As to the effect of this method upon the healing of the wound, I can scarcely judge at present. The case of amputation of the thigh was an instance in which I was peculiarly anxious that union should take place quickly. The patient, a young man, was very weak and low, with hectic, diarrhoea, loss of appetite, and unmistakable evidence of tubercular disease in the lung; in such a state, in short, that I was unwillingly induced to perform the operation only by the severe and highly painful disease of the knee, and the strong wish of the sufferer. I felt that a chance of recovery from the operation would be afforded only by quick healing of the wound; for, if that failed, he would assuredly sink under the suppurative process that must follow. To make matters worse, the vessels bled briskly in the operation, causing a loss of rather more blood than usual in so thin a person. They were, however, quickly stopped by fifteen needles; and the edges of the wound were united by sutures, and no dressings used. The needles were withdrawn at various periods after the operation; some in forty-eight hours; and one, which secured the femoral artery, not till the fifth day. There was a small amount of suppuration; but the wound healed up at once firmly in nearly the whole of its extent. The youth

was much depressed by the operation, but rallied and recovered. This, I feel sure, would not have been so, had there been failure of immediate union in the stump. To what extent this satisfactory result was attributable to the employment of accupressure instead of ligatures, I cannot tell. I have seen, and not unfrequently, union take place as well when ligatures have been used; and a larger experience is required to enable me to form an estimate of the relative advantages of the new and the old methods. I sincerely hope the more extended trial of accupressure may prove that Professor Simpson's skill and energy have not only facilitated the performance of operations, but also brought about a real improvement in the treatment of wounds.

Even if that be so, I do not think that we should rest quite satisfied. The needles may be better than the ligatures; but it would be better still if we could do without either—if we could devise some effectual means of arresting hemorrhage without the necessity for leaving any foreign body in the wound. There seems no impossibility in this; and we will, therefore, hope that it may be accomplished.

CLINICAL REMARKS

ON

THE TREATMENT OF EMPYEMA IN CHILDREN.

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PLEURISY is a much commoner disease of children than would be supposed from reading the ordinary treatises on children's diseases. Its presence is often overlooked; the symptoms are referred to "infantile remittent", to "congestion of the brain", or to "disordered liver", and, if it become chronic, to phthisis or atrophy. Pain is either not complained of at all, or else it is referred to the abdomen, or shows itself in a general tenderness of the body; hence the chest is not examined. When a physical examination of the thorax is made, from the frequent absence of friction and the presence of bronchial breathing, with the difficulty of getting much information from the voice in young children, the case is often mistaken for inflammation of the lung or tubercular consolidation.

Idiopathic pleurisy is not at all rare in children; pleurisy, secondary to tubercle, to pneumonia, or to renal disease, is equally common, or even more so. Pleuritic effusion in children, even when idiopathic, has a great tendency to become purulent at a very early period. When pus exists in the pleura, as a general rule, the sooner recourse is had to paracentesis the better. Even when the effusion is not purulent, if the pleura is much distended, and dyspnoea is increasing, in spite of diuretics and counterirritation, it is unadvisable to postpone the operation. If the emphysema be of very long standing, and the dyspnoea be not great and rather on the decrease, it is better to leave the case to Nature; and the purulent collection will probably excite no irritation, and its fluid portion may be absorbed. In one case of this kind, in a boy five years old, where the disease was of three years' standing, I operated with the patient's chest under water. The lung, which had been long collapsed, was atrophied; a communication was established between the bronchi and the pleural cavity; this caused decomposition of the contents of the pleura, and the patient died in a fortnight of irritative fever.

Of seventeen cases of empyema of which I have notes, in six there were spontaneous openings or pointing of matter requiring operation; of these, five recovered with permanent fistula; the other died, after fourteen months, with necrosis of the sternum and amyloid degeneration of the viscera. In eleven cases, paracentesis was performed; of these, six recovered completely, one had a permanent fistula, and four died. Of the four fatal cases, one was a child only five months old, who died of collapse of the lung; one was twelve months old, and died of pneumonia; one was the child whose case I referred to just now; and another died of septicæmia, whose case will be reported presently.

I believe it is of great importance to prevent the entrance of air into the pleura. I once put the patient into a warm bath, and opened the chest under water. The result in this case has been above mentioned, but was not due to the mode of operation. In some cases, I have evacuated the contents of the chest by means of a long narrow elastic tube whose free end opened under water. Unless air is admitted, and if the lung does not expand very readily, the contents of the cavity are but very partially evacuated. To promote more complete evacuation, the employment of an exhausting syringe, as recommended by Dr. Bowditch (*American Journal of Medical Sciences*, vol. xx, Oct. 1850, p. 325; and *Gairdner's Clinical Medicine*, pp. 380 and 718), is of great service.

Of the last six cases in my wards at the Children's Hospital, in which this syringe has been used, five recovered and only one died. This was a child, twelve months old, who died of pneumonia. He had been previously leeches on his head at a London hospital, and, when admitted, was extremely anæmic and exhausted. These results are probably more favourable than one can usually expect to meet with. Of Bowditch's cases, in twenty-six, the fluid was serous, and twenty-one recovered; in twenty-four, it was purulent—of these, eight recovered, nine were relieved, and seven died.

The following is a short sketch of my successful cases, in the order of their occurrence. They have all happened since last June; two of them were partially or wholly under the care of my colleague, Dr. Dickinson.

The first was a boy (Armstrong), aged 6 years, who had been suffering from pleurisy of the left side for three weeks. The puncture was made posteriorly between the ninth and tenth ribs, as recommended by Bowditch. Only three ounces of clear yellow fluid were drawn off; it coagulated on cooling. The patient experienced much relief; the wound healed at once, and he made a rapid recovery. In this case, it is very possible that the patient might have got well without operation; but so little risk attends the operation, and so greatly is the chance of recovery diminished by waiting till pus is formed, that, in a similar case, I should again recommend having recourse to the operation, when, at the end of three weeks, dyspnoea and distension of the pleura are increasing in spite of treatment.

The next case was that of a girl (Toynbee), aged 5 years. The disease was of four weeks' standing. There was great dyspnoea and considerable bulging of the side affected (the right). On the first occasion the operation was performed posteriorly in the tenth interspace, and about four ounces of pus drawn off. Considerable relief was experienced. At the end of two days, dyspnoea having returned, and the signs of effusion being better marked in front than behind, I operated in the sixth interspace, a little behind the nipple line, and drew off ten ounces of pus. This gave very great relief. I gave the patient next day a grain and a half of quinine every two hours. Both wounds healed at once. She was again tapped at the end of seven weeks in the fifth interspace, one inch inside the right nipple, and four ounces of non-fetid pus drawn off. The wound healed at once. Four weeks later, she was tapped in the sixth right interspace, an inch and a half outside right nipple. Three ounces of pus were taken, and a permanent cannula introduced. There were discharged from day to day quantities of pus, varying from one drachm to ten drachms, for about a month. The quantity of discharge gradually decreased. The tube was removed, and the fistula healed. There remained much flattening under the right clavicle, slight depression of the right shoulder, and slight curvature of spine to the left. Percussion-note over right lung was everywhere deficient in resonance, least so at the apex. Near the nipple, respiratory sounds were almost cavernous; vocal resonance increased. Her general condition was very good. Two months later, the deformity of chest was much less—in fact, almost gone.

Another child (Mingay), a year and a half old, under the care of Dr. Dickinson, was tapped in the ninth and tenth interspaces, below the angle of the scapula, having had pleurisy about seven weeks. One puncture yielded no fluid; the second gave three ounces of bloody pus. She made a good recovery after this, and left the hospital well a week later.

Another case (Ripon), a boy, aged 5 years, had been ill three months. He was tapped four times. The last time the cannula was left in and pus let off every day. A long gum-elastic tube was put in two inches and a half, and pus drawn off. At length nothing could be passed but a piece of wire, and soon the sinus closed. He was four months under treatment; but ultimately left the hospital quite well.

One other case is worth recording. A boy, named Bartlett, aged 4 years, was admitted to the hospital with albuminuria and dropsy after scarlatina. He appeared to be progressing favourably; the albumen decreasing in amount, and the oedema subsiding; when, sixteen days after admission, he had the symptoms of a cold. Three days later (Nov. 10th), his skin was very hot (in axilla, 101.4°). He had some dyspnoea; and, on examining his chest, the lower half of the left side was found to be dull on percussion; the respiration was somewhat tubular, and the vocal resonance was exaggerated; the heart's apex beat in the line of the left nipple. His pulse was 152, weak; and respirations 58 in the minute. There was general puffiness of the surface. His urine was of a very smoky tint, with a little albumen. He continued much in the same state until the 15th November, when his pulse fell to 128 in the minute, but still very weak; his respirations were 60. His chest presented much the same physical signs. His urine contained a much larger proportion of albumen. The next day, at the base of the left lung posteriorly, a sound resembling redux crepitation was audible. There was now audible for the first time tubular respiration near the angle of the right scapula,