

to bad surroundings is lowered, thereby in its turn rendering the patient less able to repair these damages.

If the primary scaffold be destroyed, you will see that the gap must be filled up, if at all, by slow outgrowths from each raw surface (see Fig. 3), hampered by the presence of these organisms; that as the force which existed, drawing these surfaces together, is gone, the edges of the wound almost by their own weight tend to fall apart, and therefore the process of healing is longer, and is not cathetically so satisfactory. A great wide scar is left, instead of a mere line, which might often be so contrived that it would be hidden in one of the natural folds of the part.

In all cases the ideal we aim at is the best and quickest method of healing—primary union. Best because it produces the required result with the minimum of pain, in the shortest time possible, leaves the least unsightly effect, and makes the patient run the least possible risk. Anything short of this is failure, more or less. It may not always be possible to obtain it, as in those cases where a large amount of skin has to be removed; but even there a great deal may be secured by keeping the wound rigidly aseptic, until followed up by granulation, and it should always be aimed at. You will see, therefore, that it is no valid objection to say that this method involves a great deal of time and trouble, and that others get their wounds healed without troubling themselves to take all these precautions. As a matter of fact, if you take the whole time and trouble expended on a case which pursues a rigidly aseptic course, they amount to much less than the time and trouble *reacted* by a case which is not aseptic, and has to wade through the whole course of septic inflammation, suppuration, granulation, before arriving at the desired result. Besides this, and the fact that the result in the former case is much more like a return to the original condition, it is undisputed that many operations can now be performed—for no other reason than that now we understand how to do them—which were not aseptically believed to be possible not many years ago, such as cranial, abdominal, and joint incisions; and I may point you to a very good instance of the latter in the case in Brackenbury of fractured patella, wired together, in which the temperature has never risen above 99 deg. since the operation.

There can be no doubt but that various constitutions have various amounts of vital resisting power, by means of which organisms may be defied to a greater or less extent, and that some persons have so little that a very slight amount of bacterial energy is sufficient to overpower their weak garrison. Such are the people we mainly have to deal with here, and if you succeed in obtaining

primary union among the patients in this Hospital, I may assure you, for your comfort, that you will not find so much difficulty elsewhere; but that is a reason for our taking extra-special precautions, not for arriving at the hasty conclusion that things are so bad with these badly-nourished men and women, that it is hopeless to expect really good results. That is but a lazy way of talking, useful only to cover our defects.

If now the vitality is very low, and is overpowered by the germs present, the bacteria develop, increase in numbers very rapidly, and at the same time the poisonous material which is produced by them increases, and is absorbed by the lymphatics of each side of the wound. If the formation of this poison is delayed until granulations are formed, these, so long as they are uninjured, form a very perfect barrier to the passage into the system of either bacteria or poison, as they contain no lymphatics; but, unfortunately, the chemical changes taking place in the wound often result in the production of acrid or caustic matters, which act upon the granulations, destroying them in patches, and opening up again a way into the body.

Should this poison be absorbed, its presence is soon felt. Each amount taken up into the system signals its presence by a rigor and a rise of temperature. As its effect passes away, the temperature falls only to rise again with the next amount received.

And this appears a fitting time to warn you against a practice which I notice as very frequent. If you have to dress a granulating surface, *do not wipe it*. Wash it, if you like, with a gentle stream of fluid, and wipe the skin all round it; but to wipe the surface of a granulating surface is to do exactly what we dread these bacteria doing—that is, to break open several of the minute blood-vessels which are immediately beneath the surface, and so open up a way for the entrance of bacterial poison, and even of germs themselves. You must often have seen, as I have, a beautifully perfect granular surface, covered by a protecting film of fluid, ruthlessly wiped with a piece of lint, the track of which is marked by a multitude of little red bleeding points. If you look at the drawing (Fig. 3), you will see at once how near these fragile newly formed vessels are to the surface, and how easily they may be broken by the rude contact of a piece of lint used in this manner. Each time such a thing is done, the risk is great, and besides, the work which has been done last is all undone, and the lately formed layer of tissue has to be reformed, so that you are lengthening unnecessarily a process already too long.

Should matters go further still, bacteria themselves appear to invade the blood stream in large



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