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The cure of ventral hernia

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[Reprinted from the NEW YORK JOURNAL OF GYNÆCOLOGY AND OBSTETRICS
for January, 1894.]

THE CURE OF VENTRAL HERNIA BY CONNECTIVE- TISSUE GRANULATION.

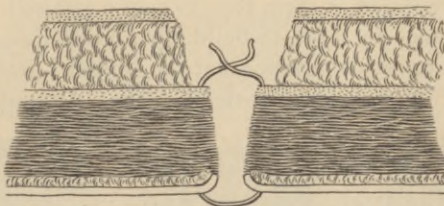
BY W. R. PRYOR, M. D.

The wound being closed by my method, in a few hours leucocytes begin to invade the meshes of the gauze, and under the protection of the antiseptic dressing they meet with no cocci. They are then followed rapidly by the plasma cells. These devour the leucocytes, and not having to battle with pathogenic germs, devote themselves solely to reproduction of tissue. After not many hours the knots of the ligature are reached. These being impenetrable to either germs or cells, the latter arrange themselves about the suture material. Very soon here also plasma cells come and completely surround the sutures. If undisturbed mechanically, chemically, or by pathogenic germs, the plasma cells change their shape into fibroblasts, long cells, granular, and surrounded by regular

layers of fibrin. The nuclei steadily shrink while the bundles of fiber become more marked, until the tissue assumes the appearance of fully formed connective tissue. So I

have come to believe that the less my sutures and granulations are disturbed, the better will be the result. Therefore I irrigate my wounds with boric acid only and apply iodoform gauze, because these of all our antiseptics are least irritating to the living cell. It is my belief that with a perfectly aseptic operation even large clots may be absorbed by just such a process as these cells exhibit here.

So intimately does silkworm gut become attached to the tissues that where the sutures have been left in an *aseptic* wound for a month, they have been with some little difficulty removed, having "grown



Silkworm-gut suture, to be tied and cut short.

fast" by the close surrounding of the sutures by leucocytes, fibrin, and plasma cells.

I have then left my sutures in permanently, not because I hoped thereby longer to hold the tissues together, but because I did not wish to disturb the beautiful regular work of the plasma cells. For upon the disposition of collections of these, known as "giant cells," depends partially the arrangement of the fibrillated tissue which is ultimately produced. I have brought this subject so often before you that I am almost ashamed to do so again, but I make once more an attempt to



induce more of you to adopt my method of closing these wounds, by elaborating for you the reasons for the procedure. I have always pushed the fat a little

way from the fascial edges so as to expose the fascia somewhat, and thus secure my granulations from the connective tissue, because "it is in accordance to laws of natural descent for the cells of connective tissue, when thrown into renewed and extraordinary genetic activity in what is termed plastic inflammation, to produce a progeny of cells possessed of the same tendencies as themselves. And of all these tendencies, which one is more unfailingly repeated in them than to spin a semisolid fibrillated collagenous capsule—in short, to build up fibrous tissue?" Therefore it is of the utmost importance that the desired "granulations" are at least started from a connective-tissue plane. Granulations from fat, from perito-



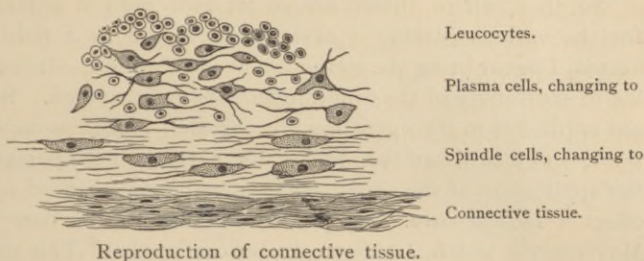
Space between fat surfaces becoming filled with plasma cells, highly vitalized above, but already shrinking below.



New-formed tissue completely changed to contracting white connective tissue, binding together skin, fascia, and muscle; suture indistinguishable from new tissue.

næum, from bone, all take on the parent tendency, and the resultant new tissue is weaker or stronger in direct proportion to the amount of

connective tissue contained in the parent structure. The plasma cells deposit, under the influence of the irritating effects of the wound and dressings, themselves in extravagant quantities. If their entire ener-



gies are devoted to their histological function of fibrillation, an excess of that will be produced. If they have to battle with pathogenic germs, they will produce but a small amount of fibrillated tissue, for many of them will be destroyed in the contest and contribute to the formation of pus. Consolidation of the protoplasm and of the new-formed fibrillar tissue takes place at the expense of space, and in this way is produced the familiar contraction in scars. This has already begun in the deeper portions of the wound before the deposit of cells has ceased on the surface. Hence we see wounds, made and treated as I have suggested, contract as has this patient's.

Primary union in fat is of but little service, and whenever it is obtained at the possible expense of union between the more important layers, the method is faulty. My method was first suggested to me by an operation upon an exceedingly fat woman in a suburban town. It was brought before the Obstetrical Society by report of another case, December 16, 1890. Since then I have extended it to include every operation for ventral hernia, and shall apply it to the treatment of any other case of hernia which may be presented to me where I can get approximation of the fascial planes. It would appear also that it will be of service to those gentlemen who flush the abdomen and drain through tubes. For here it is exceedingly difficult to get union perfect between the deeper layers, owing to the inability to keep the wound strictly aseptic. The great complication of hernia following such imperfect work would then be reduced to a minimum.

It will not suffice in operating for hernia if any of the old scar tissue be allowed to remain. Such is too poor in nutrient vessels and connective-tissue corpuscles to be of use to us, being almost wholly fibrillar tissue. And when, in discussing Dr. Edebohls's exhibition of

cases treated by the buried suture, I stated that from the patient a better bond of union could be obtained, I referred to this new-formed, histologically formed, connective tissue.

So, then, where women are so fat as to require separate suturing for the various planes, in cases drained, and as a radical cure for hernia, I again bring the method to your attention. It is also applicable to shortening of the round ligaments in fat women. So far I have not applied it to the operation for inguinal hernia in men, but where the loss of a testis on the side of the hernia is unimportant, I believe the application of the principles involved in my method will suffice to effect a radical cure. My procedure must not be confounded with McBurney's, which, I believe, gives poor results. This particular patient had suffered from an abdominal fistula and hernia with much suppuration in the parietal wound following a coeliotomy some years ago. There was also great loss of skin surface, and hence a very wide scar resulted. This is not usually the case in ordinary hernias, and the scar is more linear in character. Although this one is but a few months old, yet already is it assuming a circular form. You may judge from its length originally when I tell you that ten sutures were required to close together the muscular and fascial planes.

I performed on this patient also the operation of hysterocysterorraphy, or fastening the uterus to the bladder. The uterus is very well held up so far. The points about the hernia I wish to call to your attention are the absence of any "line of union"; the circular appearance of the cicatrix; the beginning transverse folds in the fat, showing contraction in the scar; the union of the superficial scar to the deep, as evidenced by the movement of the entire scar on contracting the recti.

