

The advantage of the protective is that the intestine slides on its smooth surface, and does not adhere to it, as it does to gauze packing, while the pus is drained away by capillary action. Plugs of omentum are apt to get fixed in the holes in the side of the Keith's tube, but this can be avoided by occasionally turning the tube round. As the cavity gets smaller the glass tube can be dispensed with, and a rubber or a "cigarette" drain substituted. A strip of rubber tissue—such as a piece of Martin's bandage—packed into the bottom of the wound forms an excellent drain, and it also allows the cavity to contract. The bowels should be opened the next day by a turpentine or other enema; and a dose of castor oil or calomel may be given on the second day.

*After-treatment.*—The head of the bed should be raised on eighteen inch blocks, because we want any pus or fluid that may collect in the abdomen to gravitate into the pelvis, where it will be received by the tubes or other drains placed there. In private practice the nurse should always test the strength of the bed before using such high blocks, as it is often found that the lower end of the beds in private houses will not stand the strain put upon them by this position. If the temperature rises to 101 degrees or 102 degrees F., the nurse should at once inform the surgeon, as the drainage may be imperfect. The tube may have become blocked, or pockets of pus may not be draining into them, and the pus may be working its way elsewhere. There are, of course, other reasons for a rise of temperature, which must be inquired into.

(3) *Appendicitis with general peritonitis* is a very grave condition. The organisms have proved too much even for the absorptive and phagocytic actions of the peritoneum. They have swept along over the whole surface of the peritoneum, and nothing will stop them. There is thus set up a diffuse peritonitis, attended with great toxin absorption, and causing profound septicæmia; paralysis of bowel ensues, and the abdomen becomes distended. Operation is the only possible means of saving life. The abdomen is opened to let out, not only pus, but virulent organisms and toxins. There is some difference of opinion with regard to the propriety of washing out the abdomen in such cases. It is said that if we wash out we may wash away protective agents—lymph, phagocytes, etc.—as well as pus and toxins. This is probably true, but it is, perhaps, more important to get rid of the poisons than to save these protective agents, which admittedly under the circumstances are not

very efficient. As a result of considerable experience, I believe that the clinical results justify the practice of a washing out the abdomen, provided it is done in such a way as to avoid much handling or disturbance of the viscera. Care should be taken that the outflow is as free as the inflow, by introducing several large glass tubes in various directions. For purposes of drainage, a large Keith's tube should be left in the pelvis, and the head of the bed should be raised on high blocks—the Fowler position. The sooner the bowel is moved the better—to lessen the danger of paralysis and distension. This is so important that the surgeon sometimes makes a temporary opening in the bowel to ensure that the contents may be evacuated. After such an operation the signs of improvement are—that the pulse improves; there is a gradual fall of temperature; the abdomen becomes flat; flatus is passed; and the bowels move.

#### Operations on the Stomach.

(1) *Perforated Gastric Ulcer.*—If the perforation be on the anterior wall of the stomach, general peritonitis is very liable to result; but if on the posterior wall, the peritonitis there is less diffuse, and may be confined to "the lesser sac of the peritoneum" behind the stomach. The perforation is not a large tear in the wall; it is rather a leakage—a tiny opening into which one can scarcely get the tip of a pair of artery forceps. Nothing gets out of this opening but a little mucus containing organisms and gas; very rarely does food escape. The *staphylococcus albus* sets up a protective inflammation round about the area, and there is always a rapid effusion of fluid from the peritoneum, which collects in the pelvis. A profound state of collapse follows a perforation, then an hour or two later the patient seems to improve markedly; and in a few hours more, as the peritoneum reacts, there are symptoms of advancing peritonitis. The operation consists in opening the abdomen, closing the perforation in the stomach wall, and purifying the peritoneal cavity by washing it out.

In the after-treatment, the nurse must remember that she is dealing with an unhealthy stomach, in which there is a row of stitches closing up the perforation, and that there is a fear of those stitches giving way and further leakage taking place. It is quite common for the patient to vomit up partially-digested food hours after the operation, or, if the stomach has been empty at the time the perforation took place, large quantities of fluid and bile may be vomited. The patient may have small quantities of albumen water within two

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