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Simple Enterostomy Versus Enterostomy Plus Intestinal Evacuation in Ileus.*

ALTON OCHSNER AND AMBROSE STORCK.

From the Department of Surgery, Tulane University School of Medicine.

Whereas the importance of the early relief of mechanical ileus has been appreciated by all clinicians, there has been a controversy concerning whether only a simple relief should be performed or whether in addition to relieving the obstruction the bowel should be emptied of its contents mechanically by "stripping" the intestine. Even though, as shown by experimental and clinical investigations,[1, 2, 3] such a procedure produces marked trauma resulting in cardiovascular changes, the theoretical advantages of complete emptying of the intestine by mechanical "stripping" consist of decompressing the intestine and relieving the strangulation of the intramural intestinal vessels.

In the present investigation the results obtained by simple relief of mechanical ileus were compared with those in which, in addition to the relief of the obstruction, a mechanical evacuation of the intraintestinal contents was secured. Mechanical ileus was produced in dogs and after varying periods of time (from 48 hours to 144 hours), the animal was relaparotomized under sterile precautions. In one series of animals the mechanical obstruction was relieved, whereas in a similar series in addition to the relief of the mechanical obstruction, the dilated loops of intestine were emptied of their

[1] Laewen, A., *Zentralbl. f. Chir.*, 1927, **54**, 1037.

[2] Storck, Ambrose, and Ochsner, Alton, unpublished.

[3] Morton, J. J., *Ann. Surg.*, 1932, **95**, 856.

contents by introducing a catheter into the bowel, and "stripping" the intestine toward the enterostomy tube. The catheter was removed and the opening in the gut sutured. The abdominal wall was closed. After 24 hours, observations were made concerning the activity of the intestine. The animals were laparotomized, balloons were introduced into the lumen of the gut and kymographic tracings obtained as described previously.[4] To determine the intestinal activity, "hypertonic" Hartmann's solution, which previously had been shown to exert a marked stimulating effect on intestine,[5] was administered intravenously to each animal and the intestinal activity recorded. In all, 37 animals were used, of which 12 were eliminated because they did not live long enough to complete the experiment. Seventy-nine observations were made on the 25 remaining animals, 36 following simple relief of obstruction and 43 following relief of obstruction plus mechanical evacuation of the intestinal contents. Four observations were made with 48-hour obstruction, 18 with 72-hour obstruction, 34 with 96-hour obstruction, 17 with 120-hour obstruction, and 6 with 144-hour obstruction. The results obtained following the intravenous administration of 10 cc. of "hypertonic" Hartmann's solution were briefly as follows: Of 36 observations made on intestines in which there had been a simple relief of obstruction, there were increaseses in activity in 31 (86.1%), and no change in activity in 5 (13.8%); of the 43 observations in which in addition to relief of the obstruction the intestine was "stripped", there were increases in activity in 35 (83.7%), no change in 6 (13.9%), and an actual decrease in 2 (4.6%). The average increases in intestinal tone were 15.5 mm., and 10.2 mm., respectively. The average increases in the amplitude of intestinal movement were 1.2 mm. and 0.9 mm., respectively. The average duration of increased activity was 22.9 minutes and 16.7 minutes respectively.

[4] Ochsner, Alton; Gage, I. M., and Cutting, R. A., *Arch. Surg.*, 1930, **21**, 924.

[5] Ochsner, Alton, Gage, I. M., and Cutting, R. A., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 911.