The Use of Jejunal and Ileal Loops in Stomach and Colon Surgery

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The removal of all or part of the stomach and colon is a routine surgical procedure. All too frequently this surgery will remove the disease and the patient will be presented with new symptoms which are often more annoying or disabling than the original illness. So far, no plastic or substitute material from outside the body has been discovered to replace the stomach or colon.

In stomach surgery, all studies have strongly emphasized the protection of the gastric reservoir against the development of cramps, diarrhea, weight loss, anorexia, etc. Small sections of jejunum have been used to make up for part of this loss. We have modified these segments of jejunum by the use of loops in the shape of a figure 9. Previously only short straight segments have been used. Figures 1 and 2.

A certain percentage of patients following partial gastrectomy get relief from the ulcer but go on and develop the distressing and disabling postgastrectomy syndrome ("dumping"). This is characterized by diarrhea, cramps, sweating, anorexia, weight loss, weakness, etc. In these we have had excellent results by the transposition of a segment of jejunum as shown in Figure 2. In all cases of this type, we have used this procedure only where there was no free acid. Figure 3.

In total colectomy in the past, one has been forced to have a bowel opening on the abdomen. Colectomy, in which the major part of the colon is removed, has always been accepted with great reluctance because of the dread of going through life with an artificial bowel opening on the abdomen. At present there is great interest in trying to save the anus and lower rectum in certain cases of ulcerative colitis and multiple polyposis. The lower end of the ileum is then anastomosed to the rectal stump. The usual procedure in the past has been to anastomose the end of the ileum to the short rectal stump which is not covered with peritoneum or to close the end of the ileum and then attach the side of the ileum to the rectal stump. This gives a safer anastomosis but leaves a blind pocket which is most undesirable in bowel surgery. We have devised a method of anastomosis as shown in Figure 4. In this method we have a large peritoneal surface on the ileum to suture to the rectum. This gives a much safer anastomosis. Next we increase the storage capacity of the lower ileum. No blind loop is left in the bowel. We have been performing this with increasing frequency over the past several years. Figure 5.

CONCLUSION

The jejunal and ileal loops have proven to be of great benefit in selected stomach and colon cases. Our modifications have been presented.

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This diagram indicates that the entire stomach has been removed. A loop of jejunum with its own blood and nerve supply has been inserted. The arrows indicate the direction of the peristaltic waves. By this figure 9 loop of bowel, a large segment 14" to 16" can be inserted with no kinking. This gives ample storage space and is easily attached to the duodenum without tension. A large surface of bowel covered with peritoneum is available to anastomose to the esophagus which lacks peritoneum.

Figure 2
X-ray of figure 9 loop of jejunum inserted after total gastrectomy. Note the marked dilatation and ample storage space. This makes it possible for the patient to eat without discomfort.
Figure 3

The proximal and distal jejunum are divided as shown. The original gastrojejunostomy does not have to be taken down and this makes the technical part of the operation much easier. The arrows indicate the peristaltic wave direction. The jejunal continuity is restored and the figure 9 loop is anastomosed as shown with the bottom of the 9 being attached to the duodenum. No blind loops are present.

Figure 4

A figure 6 loop of ileum is anastomosed to the rectal stump as shown. A large, strong anastomosis is made by attaching the bottom of the loop 6 to the rectal stump.
Figure 5

X-ray of figure 6 loop ileal anastomosis to rectum at the level of the second valve. Note the great dilatation of the terminal ileum and the rectal stump.