A Minimally Invasive Technique to Obtain Optimal Tumor Margins in Anatomically Confined Locations Using a Contoured Stapler

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The use of endostaplers to excise tumors and maintain oncologic margins often requires multiple staple fires, sometimes awkward stapler angles, and crossing staple lines. These resections can be further complicated when tumors are in anatomically confined locations near critical structures where linear resection of additional noninvolved parenchyma would be detrimental or would have functional consequences. Thus, there are unique oncologic situations where a customized curved resection is advantageous.

METHODS AND RESULTS

Though the contoured stapler has traditionally been indicated for rectal resection, in this video we demonstrate its applicability in unique oncologic situations. Gastrointestinal stromal tumors (GISTs) approximating the pylorus can be challenging to approach laparoscopically and often require a distal gastrectomy to excise with an adequate margin without narrowing the gastric outlet. The technique demonstrated enables distraction of the tumor from the pylorus and contoured resection without the need for an anastomosis (Fig. 1). For tumors near the ileocecal valve, contoured resection of the cecum without impinging on the ileum or the need for an anastomosis is demonstrated. For pancreatic neck tumors, pancreatectomy can be performed as oncologically indicated with an increased margin into

FIG. 1 The advantage of our technique is demonstrated in this example of a submucosal tumor abutting the pylorus, where a margin-negative curved resection can be accomplished without multiple crossing linear staple lines, an anastomosis, or constriction of the gastric outlet. Other applications in the GI tract and pancreas are demonstrated in the video

the head of the gland at the level of the portal vein compared to a linear staple fire. In addition, the ability to excise small endophytic and exophytic gastric GISTs with a single contoured staple fire is demonstrated.

CONCLUSIONS

The techniques demonstrated were created to use a contoured endostapler in a nontraditional way to simplify and customize minimally invasive oncologic resections, optimize margins, minimize crossing staple lines, and limit costs by reducing the number of staple loads in unique anatomic locations.

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