Robotic resection of non-pedunculated gastric gastrointestinal stromal tumors

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BACKGROUND

- Pedunculated or exophytic gastric gastrointestinal stromal tumors (GISTs) are often amenable to stapled wedge partial gastrectomy (PG)
- Gastric GISTs with a wide base or arising in difficult locations such as the lesser curvature, cardia, or posteriorly traditionally have been managed with open, anatomic/radical resection

OBJECTIVE

- Compare outcome of minimally invasive gastric GIST resection open surgery
- Present technical aspects of robotic resection of gastric GISTs in difficult locations

METHODS

- Records for patients that underwent resection of gastric GIST at our institution since 8/2017 were reviewed retrospectively under an institutional review board-approved protocol for demographics, type of surgery, clinicopathologic variables, length of stay (LOS), complications, recurrence, and survival.
- Incidental GISTs were excluded

Results

Patient characteristics:

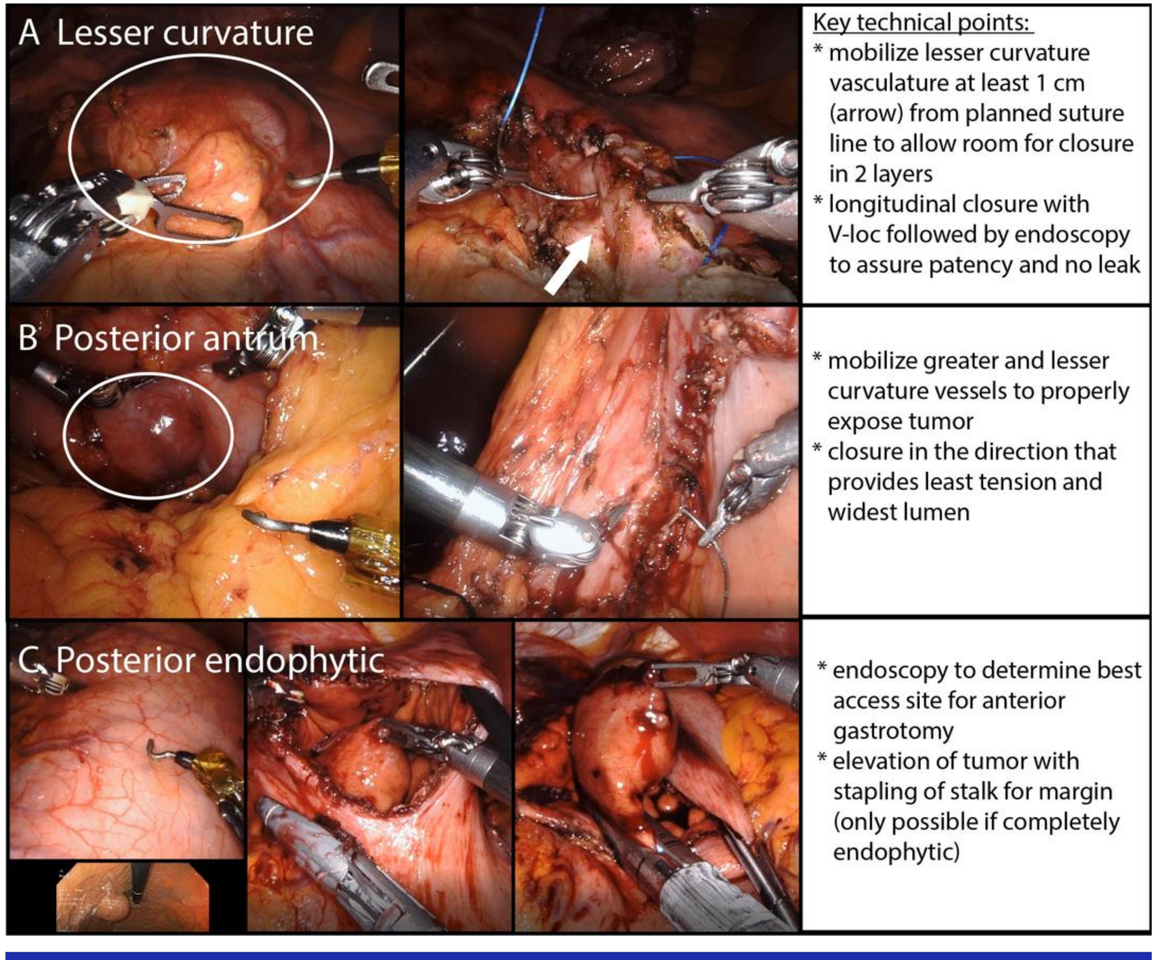
- 33 patients were 33% male with a median age of 66(31-85).
  - n=11 open PG (median tumor size 12cm, range 5-31cm)
  - n=22 minimally invasive surgery (MIS; n=21 robotic, n=1 laparoscopic), median tumor size 4.0cm (1-9; p<0.0001)
- MIS patients had high median BMI of 32(15-53)

Surgical Details:

- n=3 MIS patients had pedunculated tumors amenable to stapled PG (one each in fundus, lesser, and greater curvature)
  - Remaining tumors resected with 1cm margin, primary gastrostomy closure using running two-layer 3-0 V-loc suture
- Readily accessible portions of the stomach:
  - anterior body/antrum, n=5;
  - fundus, n=4
- Difficult to access areas:
  - lesser curvature (**Figure A**; n=7)
  - posterior body/antrum (**Figure B**; n=2)
  - Endophytic posterior (**Figure C**; n=2) tumors removed via anterior gastrotomy and endoluminal stapling .

Outcome:

- One (5%) lesser curvature robotic surgery was converted to open for a 7.2cm friable tumor post-neoadjuvant imatinib involving a replaced left hepatic artery
- LOS: MIS median 2(1-5) vs. open 6(3-17) days, p<0.0001
- Margins: MIS R1 n=3 (13%), and open 1(9%) R1 and 1(9%) R2 (due to comcomitant unresectable metastatic disease)
- Anastomotic leak: MIS 0 (0%), open n=1 (9%).
- All alive and without recurrence at a short median follow-up of 7.7mo (2 weeks–3 years).



CONCLUSIONS

Robotic partial gastrectomy for gastric GISTs not amenable to stapled wedge resection is feasible, safe, and associated with a short LOS, rare complications and a low R1 margin rate.