GIST IN PATIENTS UNDERGOING BARIATRIC SURGERY: ASSOCIATION OR COINCIDENCE?

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Introduction

With the increasing trend in minimally invasive bariatric surgery, the incidence of GIST (Gastrointestinal Stromal Tumor) appears to be concomitantly increasing. While the current overall incidence of GISTs has been reported to be about 0.70 per 100,000 persons, incidences in the bariatric surgery population appear to be about 0.5-0.8%. Our institutional experience has found this to be much higher. While there is no established causal relationship between morbid obesity and GIST, recognition of an at-risk patient cohort can lead to increased awareness and surgical selection for management of the tumor.

Methods

This was an IRB approved retrospective study of bariatric surgeries (sleeve gastrectomy, gastric bypass, resection of gastric remnant) at a single institution between 2010 and 2018. Case logs of bariatric surgeons were reviewed for pathology of GIST. Patient characteristics, operative and pathological variables, and treatment details were recorded.

Patients Diagnosed with GIST

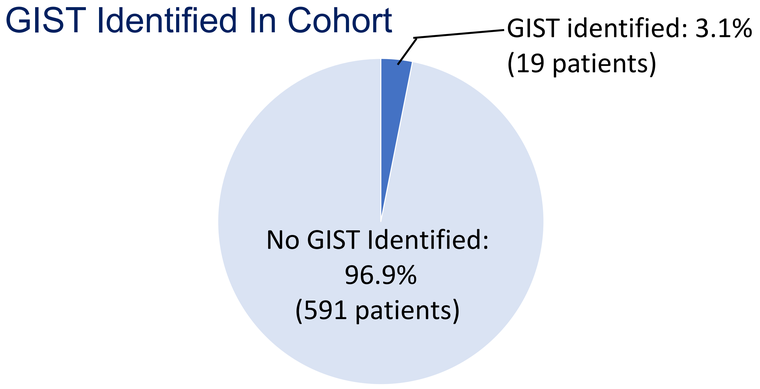


Figure 1: Pie graph representing the proportion of patients undergoing bariatric surgery found to have a pathologically confirmed GIST (n=19, 3.1%)

Results

Table 1: Patient Demographics

Characteristic	Value	Bariatric Patients Diagnosed with GIST (n=19)
Age (years)	Mean	56.1 (Range 44-72)
Gender	Female Male	14/19 (73.7%) 5/19 (26.3%)
BMI (kg/m^2)	Mean	46.5 (Range 23.5-69.3)
Operation Performed	Bypass Sleeve Other**	1/19 (5.3%) 16/19 (84.2%) 2/19 (10.5%)

** Total Gastrectomy with RenY EJ, gastric remnant resection

Table 2: Pathologic Characteristics

Characteristic	
Average Size (cm) [Range]	1.4 [0.3-6.0]
Immunohistochemistry	
cKIT+	19/19 (100%)
CD34+	13/19 (68.4%)
SMA+	5/19 (26.3%)
Histology	
Spindle	11/19 (57.9%)
Epithelioid	7/19 (36.8%)
Mixed	1/19 (5.3%)
Grading	
Mitosis <=5/5mm^2	17/19 (89.5%)
Necrosis	0/19 (0.0%)

Surgical Approach Adjusted Due to GIST

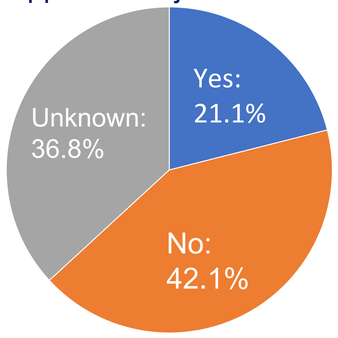


Figure 2: Proportion of patients who had a change in surgical approach (4 patients, 21.1%) due to GIST diagnosis. Reasons include adjustment of gastrectomy to accommodate GIST (n=3) and conversion to open (n=1)

Intraoperative Visualization

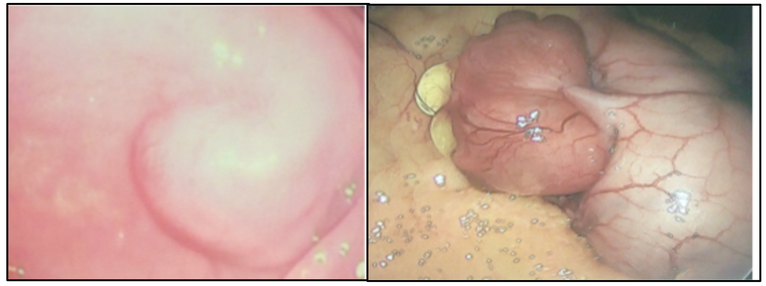


Figure 3: Images of intraoperative endoscopy (Left) and laparoscopy (Right) of GIST discovered incidentally at bariatric surgery. Images taken during maximum insufflation represent the submucosal and exophytic nature of GISTs and ability to be accommodated into resection margin if present along greater curvature.

Conclusion

(1) The incidence of GIST in the setting of bariatric surgery is not uncommon and may be increasing.
(2) Resection of GIST during bariatric surgery can be safely performed with a minimally invasive procedure with oncologic results.
(3) Bariatric surgeons should be aware of the potential incidental finding of GIST on evaluation and need to adjust surgical approach to perform resection
(4) While morbid obesity may be a risk factor for the development of GIST, further studies are needed to establish and characterize the impact of these findings

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