

# The Role of Endoscopy for General Surgeons in Bariatric Surgical Patients

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Obesity is a chronic disease affecting patients from different age groups. It is currently recognized as a global epidemic [1], and is a major cause of morbidity and mortality. The prevalence of obesity in the United States continues to increase and currently exceeds 30% in most sex and age groups [2], Bariatric surgery is an effective and durable method for weight loss. With the growing incidence of obesity, the number of bariatric surgical procedures performed will continue to rise. Inevitably, this will translate to an increase in the incidence of complications and associated symptoms related to these procedures.

The most common indication for endoscopy in bariatric surgical patients is for evaluation of symptoms (abdominal pain, nausea, vomiting, reflux, dysphagia, or weight regain) or treatment of complications (stomal stenosis, marginal ulcer, or band erosion) [3]. With the continued increase in the number of specialists skilled in endoscopy, it would be ideal to diagnose and possibly manage these in non-tertiary care centers. This would potentially decrease the morbidity and mortality associated with these complications.

The most common endoscopic findings in symptomatic patients after a roux en y gastric bypass are marginal ulcers, stenosis or staple dehiscence [4]. Marginal ulcers can occur in up to 20% of patients with gastric bypass usually at the intestinal side of the gastro - jejunal anastomosis [3]. It is associated with presence of *H.Pylori* infection or a gastrogastic fistula [5]. Use of non-steroidal anti-inflammatory drugs or smoking also increases the risk of ulceration. Stomal stenosis may also occur in patients after gastric bypass surgery in about 20% of symptomatic patients. Although contrast studies can be used to diagnose stomal stenosis, endoscopy is preferable due to having a higher sensitivity [6], and a therapeutic capability. Associated findings are gastric pouch dilatation or presence of undigested food. Endoscopic dilatation is a safe and often effective method to deal with stomal stenosis. Staple line dehiscence is another potential complication occurring in 1-20% of these patients depending on the surgical technique used [7]. If small, it could potentially be missed on an endoscopy. An upper gastrointestinal contrast study is usually diagnostic in this particular setting.

Band erosion can also occur in patients undergoing bariatric surgery. In a retrospective study by Moreno [8], 2.8% of patients developed band erosion following a vertical banded gastroplasty (VBG) in 4-14 months after their surgery. Most common presenting symptoms are weight regain, nausea, pain, dyspepsia, bleeding or vomiting [9]. The use of flexible endoscopy has been shown to be a safe and effective method in the management of gastric band erosion. In a study by Neto [10], a 95% success rate was reported in retrieval of eroded bands in a 5 year period. These investigators reported a successful retrieval of eroded gastric bands in 78 of 82 patients in the above time period and proposed it to be the first treatment of choice in their clinical practice [10].

Gastrointestinal bleeding is another presenting symptom in bariatric surgical patients. It most commonly occurs in an acute setting after gastric by pass surgery, in either early (within 48 hours of surgery) or late (> 48 hours) fashion and is related to bleeding from the staple lines [11]. The incidence of upper gastrointestinal bleeding in patients undergoing gastric bypass is <4% and it could be arising from either the gastric pouch or gastro-jejunal anastomosis. The incidence of bleeding is slightly higher after a laparoscopic bypass [12]. These patients are also best evaluated with an upper endoscopy.

At our institution, we have successfully used flexible endoscopy for diagnosis and treatment of different complications such as band erosion, bleeding and anastomotic stricture in the bariatric surgical patients. This could also be utilized by most upper gastrointestinal surgeons in centers not specialized in bariatric surgery to accelerate diagnosis and potentially for treatment of these patients.

In conclusion, flexible endoscopy is an invaluable diagnostic and therapeutic technique in bariatric surgical patients available for general surgeons. This could shed light in to prompt diagnosis and treatment in this group of patients. This could potentially improve outcomes in this group of patients. Therefore, it is essential for any practicing general surgeon to be competent in basic upper endoscopic techniques.

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