

## Advantages and Complications of Laparoscopic Adjustable Gastric Banding

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Laparoscopic adjustable gastric banding (LAGB) technique is considered to be a less invasive procedure associated with very low rates of short-term complications and almost absent mortality.

A thirty-year-old male presented with abdominal pain, dysuria and hematuria for two months without improvement despite treatment with several antibiotics. The tube and port were removed through laparoscopic approach and primary closure of the urinary bladder was performed.

This case highlights the need for the physician to be aware of the serious complications when examining patients with atypical clinical conditions and medical history of gastric banding procedure.

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Bariatric surgery has proven to be effective in weight reduction in morbidly obese individuals. Some common forms of bariatric surgeries performed are the gastric bypass (Roux-en-Y), gastric banding, vertical banded gastroplasty and sleeve gastrectomy<sup>1</sup>.

Laparoscopic adjustable gastric banding (LAGB) is the least preferred by surgeons; it presently contributes to approximately seven percent of all bariatric surgeries performed. One of the primary reasons for its falling out of favor is the lack of efficacy and high variability in weight loss<sup>2,3</sup>. LAGB involves the placement of a compressible device on the upper part of the stomach. This band or device is adjustable as it can be inflated or deflated with a subcutaneous port<sup>4</sup>. Although it has advantages such as reversibility, LAGB has its complications. Approximately 50% of patients require reoperation either for revision of the band placement or for major complications such as gastric band erosion, band slippage, dilatation of the pouch and adhesions. Serious complications occur in 10% of cases and are usually life-threatening<sup>5-8</sup>.

The aim of this presentation is to highlight a rare complication of LAGB causing severe lower abdominal pain, dysuria and hematuria; it has not yet been reported in the literature.

### THE CASE

A thirty-year-old male presented with abdominal pain, dysuria and hematuria for two months without improvement despite several antibiotic treatments. Relevant history revealed that the patient was morbidly obese with a BMI of 45. He underwent LAGB placement seven years ago with history of band removal and cholecystectomy without removal of the port and tube due to severe inflammation. Following the initial surgery, his BMI decreased to 40 and later increased to 48.

All hematological investigations were normal. The urine analysis was positive for blood and gut contents. CT scan abdominal-pelvic with contrast revealed migration of the tube into the urinary bladder and erosion of sigmoid, see figure 1. Upon laparoscopic surgical exploration, the tube was eroding the sigmoid wall without penetration and migrated into the urinary bladder.



Figure 1: CT-scan Showing the Tube (Red Circle)

Through the laparoscopic approach, the tube and the port were removed and the primary closure of the urinary bladder was performed, see figure 2.



Figure 2 (A)



Figure 2 (B)

Figure 2 (A and B): Treatment Procedure

The surgery was performed without complications. Postoperative period was uneventful and the patient was discharged on postoperative day one with a urinary catheter which was then removed 7 days later.

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## DISCUSSION

Morbid obesity is a major health factor, which reduces the quality of life. It is a risk factor because of pulmonary, vascular, endocrine, and skeletal complications<sup>10</sup>. Studies revealed an increase in the prevalence of morbid obesity in young people, mainly due to the change in nutritional behavior.

Although lifestyle intervention in the form of dietary modification, eating patterns and physical exercise is the mainstay of weight management, morbidly obese individuals may require additional pharmacotherapy or bariatric surgery<sup>11</sup>. Because of the inconsistent success, very slow effect and high rate of weight regain with lifestyle intervention and pharmacotherapy, bariatric surgery proved to be effective as it provides not just long-term weight loss, but also improvement in cardiac-related complications and quality of life, hence, reduces mortality<sup>12</sup>. Two surgical procedures were considered. The first was gastric bypass and the second was stomach volume restriction preventing excessive food intake and limiting hunger perception, which is frequently used in morbid obesity. Mason et al were the first to describe the calibrated vertical banded gastroplasty and it was an acceptable modification between long-lasting efficacy and low morbidity. The adjustable gastric band effectively reduces weight with a low risk of complications. The laparoscopic approach introduced safety and comfort for the surgical approach<sup>13</sup>.

LAGB technique is considered less invasive and associated with few short-term complications and almost absent mortality. It is considered to be safe with medium-term efficacy comparable to Roux-en-Y gastric bypass. LAGB improves morbid obesity-associated comorbidities; it was the preferred method by many surgeons until early 2000. LAGB has many advantages such as complete reversibility, no gastric incision, stapling or intestinal rerouting, shorter hospital stay, fewer hospital readmission and low rate of complication. However, it has a low weight loss rate compared to other bariatric surgeries and requires band readjustments for optimal results<sup>14</sup>. The patient in this study underwent LAGB and presented with lower abdominal pain and hematuria seven years later. CT scan revealed erosion of the sigmoid colon by the tube, which was left behind after the band removal and migrated to the urinary bladder. Post-LAGB complications include gastrointestinal perforation, injuries to the liver and spleen, dilatation of the pouch, gastric prolapse, herniation, band erosion and leakage.

Urinary bladder involvement is the first complication of its kind, which was not documented or reported before.

## CONCLUSION

**This case highlights the need for the physician to be aware of the serious complications when examining patients with atypical clinical conditions and medical history of gastric banding procedure.**

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