

CASE REPORT

Gastritis might be considered as a technical factor affecting laparoscopic sleeve gastrectomy

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Abstract

There is a paucity of data regarding gastritis as a technical factor affecting the surgical technique. Antritis and gastritis usually cause stomach wall thickness which can interrupt stapler function or even can cause serosal tear during the dissection. We report a video presentation of laparoscopic sleeve gastrectomy in a morbidly obese patient with antritis. Choosing black cartridge for patients with *Helicobacter pylori* gastritis might be the optimal technique for division of the antrum in laparoscopic sleeve gastrectomy. Further studies are required to clarify this parameter.

INTRODUCTION

Preoperative chronic gastritis with inflammatory activity associated with *Helicobacter pylori* (HP) was reported in 33.3% of the morbid obese patients [1]. Almazeedi *et al.* [2] found an element of chronic gastritis (74.4%) at the majority of the patients. Recent studies show that patients with gastritis and HP positivity have significantly greater antrum wall thickness according to conventional ultrasonographic measurements. The stomach antrum full layer wall thickness was significantly higher in patients with gastritis compared to patients with no gastritis [3].

It is known that gastric wall thickness varies between antrum and fundus. More specifically, the gastric antrum was found to be more than 1 mm thicker than the fundus [4]. Moreover, BMI over 50 and male gender are also found to be predisposing factors associated with increased antrum thickness. Based on the above findings, the use of thick cartridges

(black) for antrum division is recommended [5]. However, there is limited data regarding gastritis as a technical factor affecting the surgical technique.

CASE REPORT

A 26-year-old male patient was treated with laparoscopic sleeve gastrectomy. The patient's BMI was 43.53 and had no comorbidities. His past medical history included appendectomy 15 years ago. Preoperative endoscopy revealed gastritis of the antrum. Sleeve gastrectomy was performed using EndoGia™ with tri-staple™ technology with purple cartridges (iDrive™ Ultra Powered Stapling System, Covidien). The first firing began 2–3 cm from pylorus after the insertion of a 36 F bougie. During the first firing, while waiting 30 s for the decompression of the tissue, the stapler stopped cutting only the first 1.5 cm. A

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second cartridge of the same diameter was used for the next firing. After waiting for 30 s, a misfire happened again when completed the first centimeter of the antrum division. An attempt was made to use a manual stapler with the same cartridge, which also failed. At this point, a decision was made to change the purple cartridge with a thicker one (EndoGia™ with tri-staple™ technology with black cartridges) (iDrive™ Ultra Powered Stapling System, Covidien) inserted through a 15 mm trocar. The division of the stomach proceeded successfully. Sleeve gastrectomy completed with the use of purple cartridges for the rest of the stomach. A blue de methylene test was negative. An oversewing of the first firing of the staple line was performed using PDS 1-0. It seems that, the iDrive™ Ultra Powered Stapling System, Covidien ‘identifies’ the tissue thickness. In case of thick tissue, its function stops. Antritis and gastritis usually cause stomach wall thickness which can interrupt stapler function or even can cause serosal tear during the dissection (video).

DISCUSSION

It seems that gastritis and antritis are associated with increased stomach wall thickness. The iDrive™ Ultra Powered Stapling System, Covidien in order to function properly requires thick cartridges for antrum division in patients with known stomach inflammation. Black cartridges provide variable staple heights (4.0, 4.5 and 5.0 mm). Furthermore, their stepped cartridge face also increases the compressibility of tissue. These parameters make black cartridges an optimal choice for thicker tissues. Gastritis has not been recognized as a predisposing factor of staple line leak, but this notice may be attributable to the lack of sufficient evidence in the literature until now. In our case due to the presence of gastritis we considered the use of black cartridges in the first two firings of

sleeve gastrectomy, while in the rest sleeve we used the purple cartridges in order to proceed to the dissection.

CONCLUSION

Choosing black cartridge for patients with HP gastritis might be the optimal technique for division of the antrum in laparoscopic sleeve gastrectomy. Further studies are required to clarify this parameter.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

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