

DOLPHIN SHAPE LONG CIRCULAR STAPLER (PANTHER HEALTHCARE®) FOR USE IN STAPLED GASTROENTEROSTOMY DURING LAPAROSCOPIC GASTRIC BYPASS: FEASIBILITY & SAFETY STUDY

Objective

Feasibility assessment of the practical use and complication rate of the dolphin shape long circular stapler (Panther Healthcare) used during primary laparoscopic Roux-en-Y gastric bypass.

Methods

The dolphin shape long circular stapler will be used in our daily practice during 150 primary laparoscopic gastric bypass procedures for construction of the gastroenterostomy. Following our standardized protocol, a 25mm 4,8mm circular stapler will be used for all procedures. Primary endpoints include leak, assessed during perioperative methylene-blue leak test, and peri- & postoperative intraluminal bleeding. Technical device-related features and complications will be measured as secondary endpoint. Sealing of the instrument as well as any unexpected findings will be recorded.

Data collections consists of anonymized patient characteristics, following the GDPR compliance statement, perioperative experience and postoperative complications. Google Forms and Microsoft Excel software will be used for statistical analysis.

Funding

This study is funded by Panther Healthcare.

Results

During the study period, from May 5 2022, until December 27 2022, 150 dolphin shape long circular staplers were used for creation of the gastroenterostomy during a Roux-en-Y gastric bypass procedure.

PATIENT CHARACTERISTICS

All patients underwent elective bariatric surgery. Mean age at surgery was 38.7 years (95%CI: 12.8 – 64.6) and 78.7% were female patients. Mean weight was 115.5 kg (95%CI: 79.5 – 151.4), mean body mass index at surgery was 41.0 (95%CI: 30.9 – 51.1). Diabetes mellitus was present in 8 cases (5.3%) as preoperative comorbidity, 15 patients (9.7%) had arterial hypertension and 23 (14.2%) had documented sleep apnoea syndrome (OSAS) (Figure 1).

PROCEDURE CHARACTERISTICS

All staplers in this analysis were 25mm diameter with 4,8mm staple height, as preferred by the surgeon. One-hundred forty cases were primary bariatric procedures, 10 (6.7%) were revisional cases. Two perioperative complications occurred (1.3%) in this series. In one case we experienced difficulties during the removal of the stapler out of the abdomen after firing. The anvil was disconnected and fixed in the abdominal wall. In the other case, the anvil could not be easily connected before firing. No difficulties were noted during the closing of the stapler. No visible perioperative bleedings were seen.

POSTOPERATIVE BLEEDING

In one case (0.7%) a postoperative bleeding was seen. This patient presented at the emergency service with melaena 36 hours after the procedure. He was treated conservatively, without blood transfusion need.

Discussion

After our initial experience of 150 cases using the dolphin shape long circular stapler, we state that the device is effective in use for creation of a circular gastrojejunal anastomosis. Application of the device is easy. For starters, the anvil contains no grooves, which prevents that sutures can get stuck in this grooves while suturing, as seen in devices of competitive firms. Instructions for opening the device after firing are clearly mentioned on the device. Furthermore, the “180° flip-top”-technology allows for fluent removal after firing the anastomosis. All the gastroenterostomies could be constructed according to our local technique. We did not see any device-related dehiscences of the anastomosis, which is comparable to the devices of competitive brands. No perioperative bleedings were visualized. Moreover, in only 1 case (0.7%) a postoperative bleeding was reported and could be treated conservatively. A recent large series of 652 Roux-en-Y gastric bypasses performed with a 25mm circular stapler technique showed a bleeding rate of 1.1% (1). In our series we noted approximately half as many (0.7% vs. 1.1%), which makes it a favourable and encouraging result.

In conclusion, our first 150-case experience with the dolphin shape long circular stapler showed a fluent, feasible and safe use during the formation of the gastroenterostomy in a Roux-en-Y gastric bypass procedure. A low complication rate is seen, with in particular a low postoperative bleeding rate in comparison to recent literature.

Principal Investigator

Dr. Bruno Dillemans
Head of Department General Surgery

AZ Sint-Jan Brugge Belgium

Study Investigator

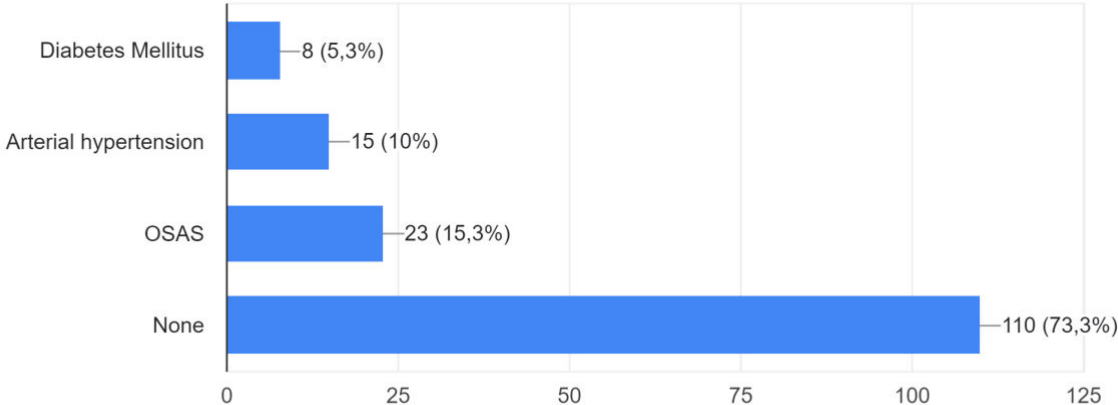
Dr. Mathieu Vandeputte

Clinical fellow

Figures

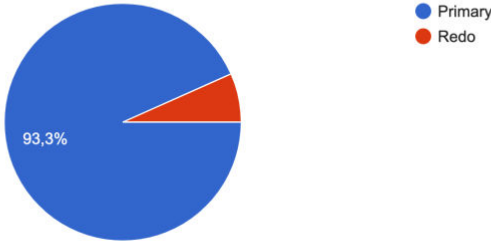
Preoperative comorbidities

150 antwoorden



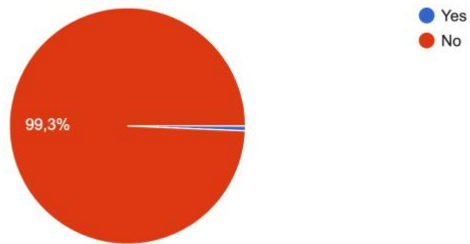
Primary vs. Redo case

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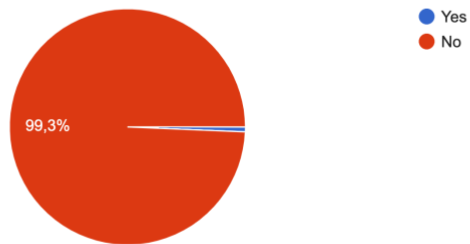
Perioperative complication?

150 antwoorden



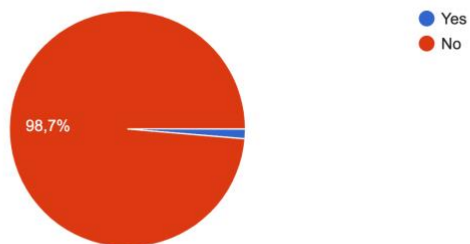
Difficult introduction of the stapler?

150 antwoorden



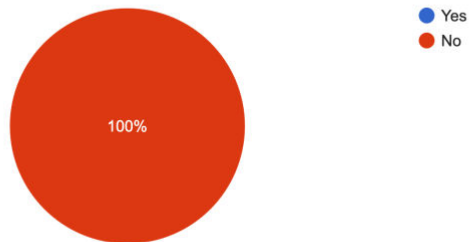
Difficulties at opening and removal?

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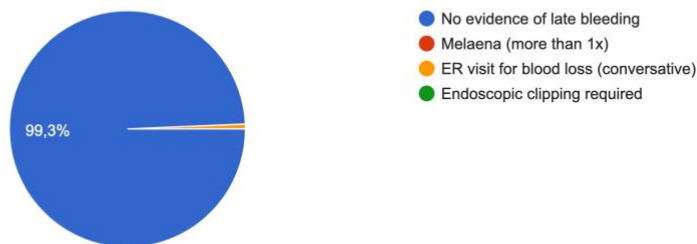
Visible bleeding?

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Evidence of late bleeding?

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References

1. Sundaresan N, Sullivan M, Hiticas BA, et al. Impacts of Gastrojejunal Anastomotic Technique on Rates of Marginal Ulcer Formation and Anastomotic Bleeding Following Roux-en-Y Gastric Bypass. *Obes Surg.* 2021;31(7):2921-2926. doi:10.1007/s11695-021-05292-2