Gastric obstruction on the plication of Gastric Sleeve. Video

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Abstract: The suture of the stapler-line of the Laparoscopic Gastric Sleeve (LGS) can cause anatomic or functional complications. The fact that the whole greater curvature is being freed and 85% of the stomach is removed leaves the narrow gastric sleeve without attachments and this condition can be affected by special abdominal conditions. This video shows a case of functional obstruction at the incisura angularis when suturing of the staplers line was done. We analyze the causes, evolution and management.

Key words: Gastric obstruction. Gastric Sleeve. Sleeve stapler-line suture

Clinical Case:
A 45 years-old male, BMI-46 had central Obesity, Diabetes Mellitus (DM2) controlled with oral anti diabetes treatment, high blood pressure, sleep apnea and elevated uric acid and cholesterol. He also suffered from restrictive pulmonary function and a significant elevation of the left diaphragm in the pre-op Chest X-rays (Fig. 1-2).

First operation: The patient had a Laparoscopic Gastric Sleeve (LGS) and the stomach was displaced toward the left diaphragm and great abdominal obesity. Once the gastric sleeve was stapled, the remaining sleeve looks “suck” by the diaphragm with partial flexure on the incisura angularis. A continuos running suture that inverted the stapler-lines was done with Prolene 3/0. The gastric lumen was adequate and the bougie and a nasogastric tube passed distally without any difficulty.

Early Post-op: He had some difficulty tolerating liquids in the early post-op days. By 3-4 weeks PO, he was unable to tolerate clear soft or normal foods and a GI series showed a narrowing at the incisura angularis and supra stenosis dilation (Fig. 3).

Using endoscopy, a functional narrowing was seen but it allowed the passing of the 10 mm endoscope. An esophago-gastric stent was used, but the supra-stenosis did not allow...
correct manipulation and fixation of the stent. A redo surgery was planned 8 weeks after surgery.

**Revision surgery:** The lesser curvature of the stomach was displaced to the left starting at the hiatus, causing obstruction at the incisura angularis and a complete closure of the lumen. The kinking could be corrected by instrumental means but the stomach returned to the obstructive position.

The GS was converted to a Roux-en-Y Gastric Bypass without any incidence and the patient was discharged on the 3rd POD with good intake tolerance (Fig. 4).

The gastric dilation was so great before surgery that it looked like a fundus without any resection (Fig. 3).

Final results: The patient is BMI-31.7 at 36 months and asymptomatic. All co-morbidities have been corrected except hypertension that now requires less medication than pre-op.

**Discussion**

The most common complication after LGS is bleeding, leaks, and anatomical stenosis in the suture-line [1, 2]. However, the GS changes the anatomic and functional action of the operated stomach in addition to the intrabdominal relation to adjacent organs. This may be the cause for severe esophageal reflux that may require revision surgery [1], and some special situations, such as in this case.

In this case, the deformity of the pre-op left diaphragm could cause the aspirating effect of the Gastric Sleeve towards the left abdomen causing an almost complete functional obstruction. The patient did not tolerate any solid foods and Revisional surgery to a RNY-GBP was mandatory.

Surgeons should look for any pre-op and intra-operative functional or anatomical deformities to prevent this complication. The use of stents like those used in leaks, pneumatic dilation [1], or extensive seromyotomy [4] have been proposed but we have not seen the complication previously reported. The fixation of GS to the greater omentum [5] during the primary operation may reestablish the “normal anatomy” and prevent this complication.

See the video at [http://www.youtube.com/watch?v=I_mZrzbTFO4&context=Cz0197ADOEgsToPDskKS8BBTZjOCboxRqGO-hnx9](http://www.youtube.com/watch?v=I_mZrzbTFO4&context=Cz0197ADOEgsToPDskKS8BBTZjOCboxRqGO-hnx9)

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