Treatment with the OVESCO system of chronic esophago-gastric fistula (esophago-pouch), after gastric bypass. A case report

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Case Report

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Background
The OVESCO system, better known as OTSC (Over The Scope Clip®, Tübingen, Germany) was applied to a 49 years old woman who, weeks before, had undergone gastric bypass with poor evolution secondary to stenosis of the pouch anastomosis and an esophageal-gastric fistula (esophageal-pouch), who, after being detected with radiological and endoscopic imaging methods, was sequentially dilated, nourished and treated, with placement of an OVESCO clip, progressing satisfactorily even though she underwent treatment with this procedure weeks after the primary surgery. A brief description is given of the system that is scarcely used in the province of our country (México), as well as the sequence of clinical approach, diagnosis, treatment and discussion of this method, which is no longer so novel, but is effective, limited by costs and availability.

Keywords: OVESCO system, OTSC system, clip, fistula, endoscopy, intestinal perforation, luminal defects, endoscopic closure.

The OVESCO system is used in endoscopy for mechanical compression of tissues in the gastrointestinal tract1 in order to close luminal defects or treat complex hemorrhages with the use of a single clip; This clip has the utility of "real-time intervention", allowing, depending on the operator's skill, the closure of defects with sizes between 1-3 cm with a single "click", allowing the immediate application of the clip to the defect.

The OVESCO system, better known as OTSC (Over the Scope Clip®, Tübingen, Germany). It consists of releasing one or more clips pre-mounted on a plastic cap at the distal end of the endoscope (similar to bands), introducing the tissue into the endoscope cap by means of instruments and forceps that are controlled in the channel of the endoscope. itself, releasing, approaching and causing compression of the edges of the defect or perforation. The clips used are a nickel and titanium alloy (Nitinol) that has thermo-mechanical memory, that is; the ability to recover its initial shape after being released and subjected to a deformity due to temperature-volume difference. The clip is pre-assembled open at 90° and returns to its initial shape (closed)3, in this way it holds large amounts of tissue and approximates the edges of the lesion so that it progresses in its various stages of healing.

The OVESCO or OTSC® clip is a non-surgical and effective option with prolonged technical and clinical success, with greater effectiveness in acute perforations and fistulas respectively.

The treatment of fistulas is a difficult and complex issue, whether they are treated by endoscopy or surgery, depending on the chronicity or acuity of the lesion, as well as the nutritional and metabolic status of the patient; Endoscopy has been considered a first-line treatment and has great potential for the management of this type of lesions, since the suction applied, in addition to the clip, can create a more robust closure endoscopically2. The device, which can currently be mounted on both dual-channel therapeutic endoscopes and conventional 11 and 12mm diameter endoscopes, allows tissue closure, with clips available in three different sizes (Image 1): type A, atraumatic, allows tissue compression and is used primarily for hemostasis; the T type, traumatic, has small peaks and blunt edges that allow compression and anchoring to the tissues and can be used in thin walls of the colon or small intestine; and finally, type GC, gastric closure, acronym corresponding to its acronyms in English, which has elongated teeth and small spikes, being indicated for defects of the gastric wall.

The OTSC (Over the Scope Clip®, Tübingen, Germany) has clinical success rates of up to 70%.
Among its advantages are the following:

1. It can be used in high-risk patients for surgery who still tolerate endoscopy.
2. Facilitates effective endoscopic management of iatrogenic and/or complex defects,

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Figure 1. 1 types of ovesco clips

which previously only had the opportunity for surgical treatment for repair.

3. Allows outpatient management in many cases and endoscopic follow-up.

4. It is well tolerated and reduces morbidity, being able to avoid major surgical procedures.

5. Reduces the need for surgery by up to less than 10%.

6. It is practically uncomplicated.

Among the factors dependent on poor prognosis for closure, the following are reported:

1. partial or total restraint of the affected tissue at the time of device release.

2. Tissue quality, dependent on inflammation or fibrosis.

3. Injury or defect lasting more than 72 hours.

4. Defect or diameter greater than 2 cm.

5. Anatomical site, contamination and vascularity of the defect, as well as the nutritional status of the patient.

According to the results of 64 studies (n= 1942 patients), the following incidences and adverse events are reported: placement in the wrong site (27.5%), perforation (22%), bleeding and infection (25%). There are no reported deaths directly associated with use of the system.

Nowadays, there is a removal device that is available for disengagement of the clip in case of release and misplacement or outside the desired site

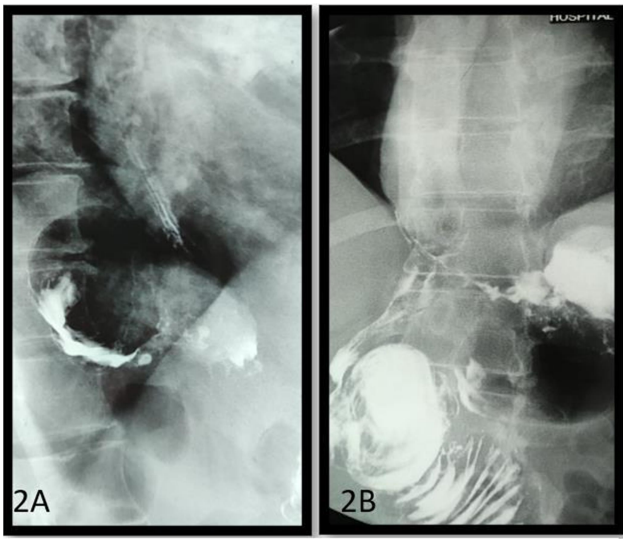

Figure 2. A. study with contrast swallow. B. Study with fistula

(remOVE® system), which was developed to work by fragmentation through current pulses through the endoscope applied to the clip structure, which reach the Nitinol material, generating the separation of the metal frame from it, fragmenting it and promoting its endoscopic removal. In some cases, epithelialization of the clip can be observed, making a superficial dissection of the tissue necessary.

Unfortunately, high clinical success rates for fistula closure with the device have not yet been reported.

Case report

This is a 49-year-old female patient, hypertensive, with grade 3 obesity, who three weeks previously underwent gastric bypass in the city of Puerto Vallarta, Jalisco, Mexico, with some postoperative controls via telephone since her poor evolution, as she later reported. He went to the outpatient clinic in this city of origin due to intolerance to solids (porridges) and later to liquids with abdominal pain and fever, as well as uncontrollable vomiting of gastro-biliary and food content.

Given the history, we requested a swallow with water-soluble material (Image 2A and 2B), finding deviation and leak of the contrast material at the level of the esophagus-gastric junction towards the left pillar, subphrenic abscess and fistula from the pouch to the excluded stomach, so we performed endoscopic study, finding distal stenosis of the site of the pouch-jejunal anastomosis with reduction of its lumen of up to 95%, immediately performing balloon dilation (Image 3A, 3B) with the intention of permeating the distal site and ideally maintaining the oral route for feeding (Four sequential dilations were performed during its management), in addition as a secondary finding, we identified at the esophagus-pouch level, a fistula of approximately 12 mm (Image 4) containing fibrin and food material that we sought from the first endoscopic session. debride, curet and wash to plan the closure strategy.

Due to her nutritional status and clinical-metabolic conditions, as well as prior consent from the patient, elective placement of an OTSC clip (Over The Scope Clip®, Tübingen, Germany) was chosen as the primary treatment option, while we maintained outpatient feeding. via nasojejunal tube, bypassing the site of the defect, as well as administering proton pump inhibitors (PPIs), prokinetics, gastric mucosa protectors, and antibiotic therapy while dilations were continued to permeate the alimentary loop.

The procedure is planned under intravenous sedation with propofol and is released under the support of a therapeutic endoscope, OTSC endoscopic clamp (Over The Scope Clip®, Tübingen, Germany)

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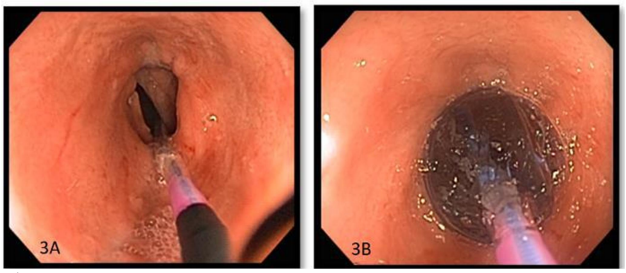

Figure 3. A. Distal stenosis of the anastomosis site and balloon dilator. B. Balloon dilation.

twin grasper® (Image 5A) and OVESCO type A blunt-tip clip (image 5B), approaching the cap to the perforation and introducing its edges for subsequent release under rotation of the reel (similar to those used for varicose vein ligations).

He was followed up for 5 months with excellent evolution and remission of the fistula, practically in the 3rd month. There was no need to remove the clip since it detached and was expelled once it fulfilled its function and the affected tissue was restored. The patient currently leads a normal life, adapted to the recommended nutritional and physical measures, with a current body mass index of 27 kg/m2 without fistulous or stenotic sequelae.

Discussion

This case is of particular interest because the fistula that originated was chronic esophago-gastric (pouch), it met the ideal morphological characteristics, a diameter of 12 mm, with good quality of surrounding tissues. A minimally invasive approach was chosen as a result of her nutritional status and clinical-metabolic conditions, allowing outpatient management of the patient. The OTSC system is not an immediately available method in the states of the Mexican Republic outside the capital of the country, nor is it accessible due to its high costs (on average 1,300 USD per year 2022 per clip, not counting hospital expenses, fees and the possibility of requiring more than one), however, it demonstrates high effectiveness when applied in selected cases, reducing hospital stay and complications, translating into lower expenses compared to more invasive methods.

Duh and Clary (2019) reported a patient with a 6mm nephro-ureteroduodenal fistula, treated with the same OTSC system to close the defect, thus ensuring a greater volume of tissue with extended durability.7 We also prefer this method, due to the ease of deployment, considering the anatomical site of the defect, the position, the space and the quality of the tissues, offering a quick, decisive treatment, with less recovery time and low risk.

Mosquera et al. (2019) performed 14 procedures using the OTSC system; 10 cases for closure of fistulas (2 fistulas in gastroenteric

Figure 4. Endoscopic image of fistula in left pillar.

anastomosis, 2 gastro-peritoneal fistulas associated with bariatric surgery of 7 and 14 mm, 2 tracheoesophageal fistulas of 5 and 20 mm, 4 colonic fistulas of 8, 18, 20 and 30 mm); In the management of chronic fistulas, 100% technical success was obtained, however, clinical success was 78.57%5. In the same way, it turned out to be an effective and safe method for the management of both perforations and fistulas, considering the resolution of the digestive problem and/or endoscopic or radiological data with complete closure of the defect. In cases where effective closure was not achieved, they were associated with defects >10mm and fibrosis of the tissue surrounding the fistula.

Nowadays, it is a new system due to its limited availability in our environment and country, contributing to a high success rate in well-selected cases, a decrease in morbidity, with short hospital times, lower expenses and lower patient recovery. Greater dissemination and use in clinical practice as a therapeutic alternative in patients are required with fistulas and perforation, which meet the conditions to be carried out. We declare that we have no conflict of interest with the brand for the reporting of this case.

Conclusion

The OTSC system (Over The Scope Clip®, Tübingen, Germany) demonstrates with this case that it is a good therapeutic alternative for the management of acute and chronic complex fistulas. It is a system that is not very widespread, known and used in our environment with high costs. , which is used by a handful of specialists mainly from the medical-surgical branches, and which requires training and experience in complex cases. In this case, it turned out to be a safe and effective method for fistula management, however, its success and use in this type of fistula is limited.

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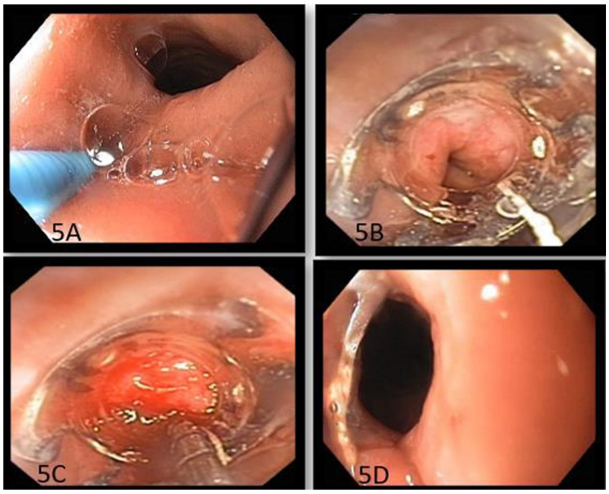

Figure 5. A. Endoscopic placement of blunt-ended OVESCO clip over the stenosis site. B. Twin grasper holding tissue before OVESCO system placement. C. OVESCO clip on fistula. D. Final image of OVESCO (released).

They require multicenter randomized studies to determine their usefulness and success rates in complex lesions grouped according to their etiology and chronicity. Its usefulness as a minimally invasive procedure in patients who do not have the ideal conditions or who are at high risk to be taken to surgery under consent is very fortunate (if it is available) and helps us reduce morbidity and mortality due to the low rate of complications that it presents, contributing to outpatient management and the emotional state of the patient, already affected by the bad experience and fears derived from surgical complications. It is an effective and accessible method from an economic point of view, compared to the high hospital costs generated by managing a complication derived from bariatric surgery. Long-term reviews demonstrated no evidence of the OVESCO clip at the placement site or scarring of the fistulous lesion.

Conflicts of interest

The authors have no conflicts of interests to declare.

Acknowledgements

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