"Clip and let go" for resection of duodenal carcinoid: a new technique using the over-the-scope-clip

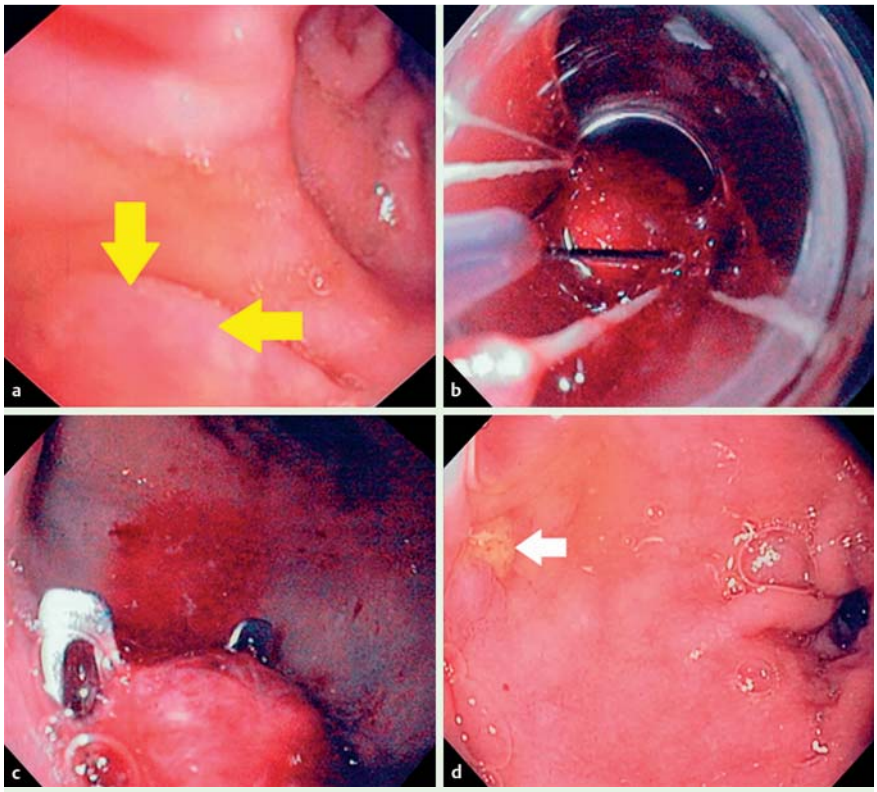

Fig. 1 Endoscopic images in a 66-year-old man with histologically-proven carcinoid showing: **a** the tumor located in the duodenal bulb, behind the pylorus; **b** failure to remove the tumor using snaring and ligation techniques; **c** an over-the-scope clip (OTSC) deployed to entrap the entire lesion; **d** a well-formed ulcer at follow-up endoscopy 2 weeks later, which on histology showed no evidence of residual tumor cells.

A 66-year-old man who had been found to have histologically-proven carcinoid located in the duodenal bulb distal to the pylorus (**Fig. 1 a**) was referred to our center for endoscopic resection. Endoscopic ultrasound (EUS) showed a 9-mm lesion extending into the submucosa but without invasion into the muscular layer. Endoscopic resection using both snare and ligation techniques failed (**Fig. 1 b**), so it was decided to remove the lesion using the over-the-scope clip (OTSC) system (Ovesco, Tübingen, Germany) [1]. The lesion was entrapped and suctioned into the channel and the OTSC was released (**Fig. 1 c**); however, resection of the lesion located above the clip failed. Therefore, we decided to leave the clip in situ and to repeat the endoscopy 2 weeks later.

During the follow-up endoscopy, it was noted that the clip had fallen off and that there was an ulcer present at the resection site (**Fig. 1 d**). Biopsies of the ulcer subsequently revealed duodenal mucosa with focal areas of chronic inflammation and granulation tissue, with no residual tumor.

This case highlights two new technical aspects. First, the concept of "clip and let go" using an OTSC was feasible and efficient, and it proved effective in removing a submucosal duodenal lesion. Previous studies using the "loop and let go" technique have shown that entrapment and strangulation of colonic lipomas is an effective and safe technique for removal of such lesions [2, 3]. Nevertheless, we are not aware of any report describing a "clip, strangulate, and let go" technique for carcinoid tumors. This technique appears to be useful for cases such as ours where the lesion is located in a position that makes resection difficult. In addition, poor surgical candidates may also benefit from this approach. Second, our case provides insight into the duration of OTSC attachment. No data currently exist on the duration of attachment of OTSCs to the gastrointestinal tract. In our patient, the OTSC must have become detached within 2 weeks, which resulted in a well-formed scar being present on repeat endoscopy.

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Juan Pablo Gutierrez[1,2], Shabnam Sarker[2], Mel Wilcox[2], Klaus Mönkemüller[2]

[1] Clinica del Aparato Digestivo, Hospital Italiano de Montevideo, Uruguay
[2] Hirschowitz Endoscopic Center of Excellence, Division of Gastroenterology and Hepatology, University of Alabama at Birmingham, Birmingham, USA

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Corresponding author

Klaus Mönkemüller, MD, PhD, FASGE
Division of Gastroenterology and Hepatology
Basil Hirschowitz Endoscopic Center of Excellence
Endoscopy Unit, JT 664
619 19th Street S
Birmingham
AL 35249
USA
Fax: +1-205-934-1537
klaus1@uab.edu