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## Endoscopic retrieval of multiple large sharp foreign bodies from the stomach. Testing the limits of endoscopy<sup>☆</sup>



### Extracción endoscópica de cuerpos extraños múltiples, grandes y cortantes. Transitando los límites de la endoscopia

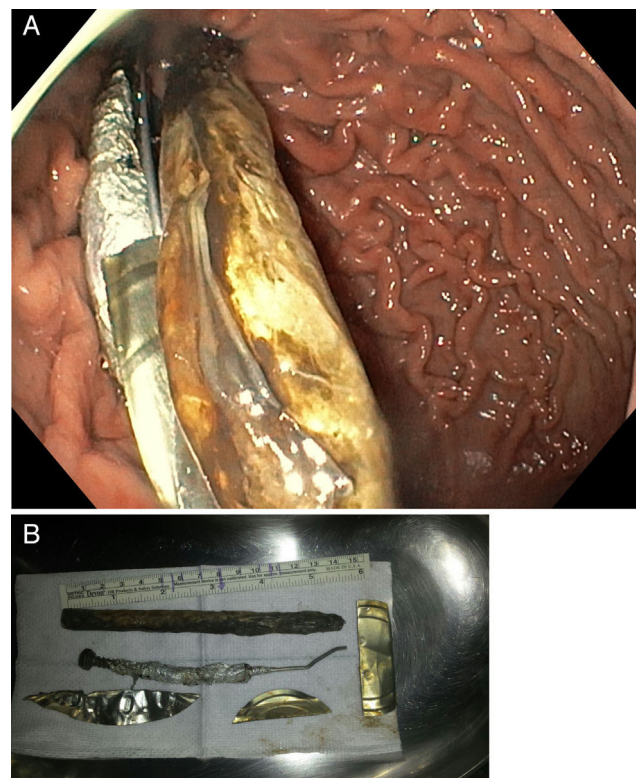
Accidental or intentional ingestion of a foreign body is one of the most common emergency situations for endoscopists. In most cases, a conservative approach should be taken, since objects will generally pass through the intestinal tract without incident.<sup>1</sup> The need for retrieval is mainly determined by the characteristics of the object ingested, such as its size and shape, the presence of sharp-edged or pointed objects, or the time elapsed since ingestion. Other factors to be taken into consideration are the clinical situation of the patient, or the locations of the object within the digestive tract. Certain ingested objects also require special consideration. For example, batteries and magnets nearly always require endoscopic extraction, while drug packets should always be left to transit naturally due to the risk of breakage and poisoning. A common situation is ingestion of metallic and/or sharp objects for the purpose of self-harm, above all in inmates in prison hospitals or psychiatric patients. In the case of large, pointed or sharp objects, retrieval is mandatory. This is usually performed endoscopically, with surgery being the last resort if endoscopy fails due to complications or the size and characteristics of the ingested object.<sup>2,3</sup> We present here a rare case of endoscopic extraction of several, large, sharp objects.

A 37-year-old man, a prison inmate, was taken to the emergency room following ingestion of several metallic objects. The patient had a history of endoscopic extraction<sup>4</sup> and gastric surgery in similar circumstances. The patient reported no symptoms. Simple abdominal X-ray showed a sharp-edged, 14 cm long metallic object and at least 2 other sharp, flat objects measuring at least 20 mm in width. Despite its limitations, endoscopy was considered the safest extraction method, with a surgical team on stand-by if the procedure failed.

The patient was taken to the operating room, anaesthetised and intubated. Endoscopy was performed (Fig. 1A)

with a standard Olympus GIF-H190<sup>®</sup> gastroscope, 9.2 mm diameter, 2.8 mm working channel, and an Olympus GIF-2T160<sup>®</sup> two channel therapeutic gastroscope, 13.2 mm diameter with 2.8 and 3.7 mm working channels, a US endoscopy<sup>®</sup> overtube, 2 cm calibre, and a rubber hood attached to the tip to protect objects that exceed the diameter of the overtube.<sup>5</sup> Using this equipment, we successfully retrieved several sharp objects (Fig. 1B). We decided to first extract the larger, longer, pointed objects, as this was technically more complex and more likely to cause injury to the gastric wall. Following this, the flat objects were extracted in descending order of size.

The 2 largest objects were retrieved through the overtube, using a polypectomy snare and a conventional endoscope. The third object retrieved, which was one of the sharp, flat objects, was shorter and wider than the previous 2, and during extraction became lodged in the overtube after grasping it with a conventional polypectomy snare and large forceps passed through the two channel gastroscope, thus making it difficult to manoeuvre the object.



**Figure 1** (A) Endoscopic view of gastric cavity containing the foreign bodies. (B) Foreign bodies.

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Unsure whether the lower end of the object protruded from the overtube while still in the gastric cavity, which would have made it highly risky to extract it en bloc, we used a Siemens Arcadis Varic® digital fluoroscopy system to confirm that it was wholly enclosed in the overtube, and were subsequently able to extract it without complications. The smaller objects were retrieved with the help of the rubber hood attached to the tip of the endoscopy, using a snare and forceps.

The decision of whether to use endoscopy or surgery to extract sharp or pointed metallic objects should be based in each case on the likelihood of success, possible complications and the expertise of the endoscopist who will perform the procedure. The airway should be maintained with orotracheal intubation, and a flexible, front-view, single or dual channel endoscope should be used.<sup>2,4</sup>

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## Adenoma with pseudoinvasion – A crucial differential diagnosis for invasive adenocarcinoma



### Adenoma con pseudoinvasión- un diagnóstico diferencial crucial para el adenocarcinoma invasivo

A 69-year-old man underwent colonoscopy following a positive fecal occult blood test, in which a 20 mm pedunculated polyp with thick stalk (Fig. 1A) was found in the distal sigmoid colon. The polyp was resected by conventional snare polypectomy without complications. The microscopic evaluation revealed a mixed polyp (Fig. 1B) with hyperplastic glands, low-grade dysplastic areas and focal superficial high-grade dysplasia, containing many lobules of crypts and glands in the polyp stalk, enclosed by bundles and fascicles of muscularis mucosae. These lobules had an area of continuity with the superficial mucosa as well as identical cytological (with only slight focal atypia) and immunohistochemical (strong positivity for E-Cadherin) features compared with the superficial glands of the polyp. Complex and defective muscularis mucosae without desmoplasia surrounded the lobules, sometimes rimmed by sparse lamina propria with inflammation. Some glands had abundant extracellular mucus. Signs of remote hemorrhage with hemosiderin deposition and vascular congestion were observed throughout the stalk (Fig. 2). A diagnosis of adenoma with misplaced epithelium (pseudo-invasion) was made.

Pseudo-invasive adenomatous polyps result from trauma and prolapse of adenomatous epithelium in areas of defective or weak muscularis mucosae into their stalk.<sup>1</sup>

They are rare lesions and may be unfamiliar to some endoscopists.<sup>2</sup>

The distinction between pseudoinvasion and invasive carcinoma by endoscopic and morphologic examination may be very difficult.<sup>3</sup>

The pathological criteria of misplaced epithelium in hyperplastic as well as adenomatous polyps include: typical localization in the sigmoid colon; presence of crypts in the submucosa and/or stalk more often lobular and well defined than irregular; invariable circumscription of the glands by lamina propria and a defective muscularis mucosae with fibromuscular splaying; frequent vascular congestion, signs of recent hemorrhage and focal or obvious continuity with the superficial mucosal epithelium; occasional chronic inflammation and/or granulation tissue and hemosiderin deposition indicating remote hemorrhage. No morphological aspects of muscularis mucosae or submucosa by the neoplastic epithelium (as desmoplasia or frank atypia or pleomorphism of the epithelium) should be seen.<sup>1,4</sup>

The presence of dissecting mucin can be worrisome but it may be present in pseudoinvasive lesions and should not by itself mean malignancy.<sup>2</sup> In difficult cases the use of immunohistochemical stains can help as Collagen type IV strongly stains the basement membrane that continuously surrounds the misplaced epithelial nests and E-Cadherin shows the same staining intensity as the overlying polyp.<sup>5,6</sup>

The main differential diagnosis of adenoma with misplaced epithelium is an adenoma with invasive adenocarcinoma. The diagnosis between them depends on pathological findings. In invasive adenocarcinoma there is usually: more significant cytological atypia in the invasive glands; glands with irregular and infiltrative nature, not surrounded by lamina propria and importantly with desmoplastic stromal reaction; presence of small angulated glands and isolated