

# Nonsurgical Management of an Embedded Metal Clip in Sigmoid Colon Causing Perforation and Abscess

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## ABSTRACT

Intentional ingestion of foreign objects is common in incarcerated individuals. Ingested foreign objects can lead to serious complications. Surgical treatment is considered mandatory once complications such as bowel perforation and abscess develop. We report an incarcerated individual with sigmoid perforation and pelvic abscess related to an ingested foreign object that was managed nonsurgically.

## INTRODUCTION

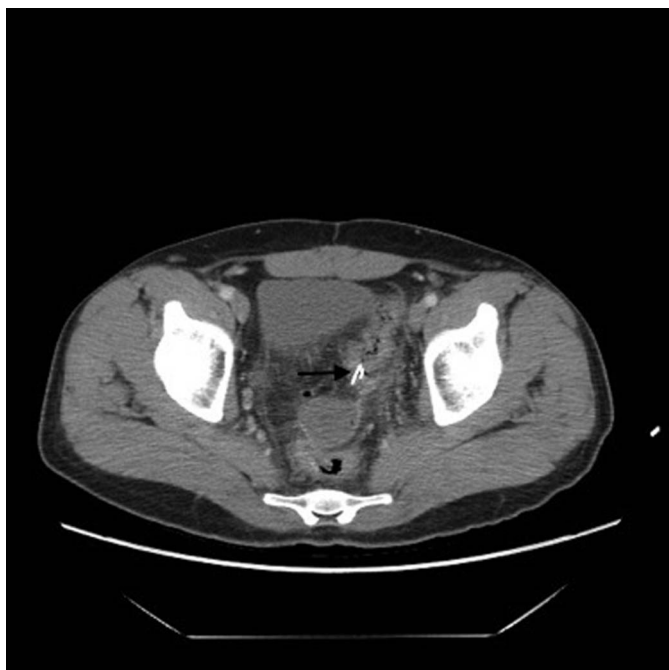
Intentional ingestion of foreign objects in adults is commonly seen in prison inmates and psychiatric patients. Endoscopic and surgical intervention needs are higher due to relatively more complex nature of the ingested objects in these individuals compared with accidental ingestion. Serious complications usually warrant surgical intervention, which by itself poses high risk in this population. As such, an individualized treatment approach is recommended in the management of foreign object ingestion in this complex patient population.

## CASE REPORT

A 42-year-old white male prisoner with a history of antisocial disorder and multiple previous episodes of foreign body ingestions needing endoscopic removal presented to our facility with complaints of abdominal pain. At presentation his vital signs were normal. Abdominal exam revealed tender left lower quadrant without peritoneal signs. Laboratory profile was unremarkable except for white blood cell count of 12.7 k/ $\mu$ L. Computed tomography of the abdomen revealed a contained perforated sigmoid colon secondary to a linear metallic foreign body or 2 adjacent foreign bodies with surrounding inflammatory changes and a 3.5-cm abscess (Figure 1).

The patient admitted to ingesting a paper clip several months before, and was admitted under the surgical service. Because the patient was hemodynamically stable and without peritoneal signs, decision was made by a multidisciplinary team to attempt endoscopic retrieval of the embedded sigmoid colon foreign body before any surgical intervention. Patient had a transrectal 10F pigtail drain placed by interventional radiology to drain the pelvic abscess. Under general anesthesia and fluoroscopy support, flexible sigmoidoscopy was performed. At 25 cm from the anal verge, an embedded metal clip with two exit points in the lumen, adjacent to each other, was noted with surrounding scarring and fibrosis of the sigmoid wall (Figure 2). Fluoroscopy images showed that the paper clip bent to a U shape with the round end inside the abscess cavity and the 2 sharp ends protruding through 2 separate adjacent sites into the colonic cavity (Figure 3). Several initial attempts at pulling the metal clip out using snare and raptor forceps were unsuccessful. Finally, using a rat tooth forceps, one end of the paper clip was grabbed and under fluoroscopic guidance, the 15-cm paper clip was removed using significant tension (Figure 4).

After extraction, the site where the clip was embedded was carefully examined with cap-assisted endoscopy. Erythematous mucosa without obvious perforation was noted. Repeat fluoroscopy here did not show any free air and the Jackson-Pratt drain did not show any increased fluid or gaseous output. A small tear in the rectum, likely from the endoscopic procedure, was noted with self-limited bleeding. This site was clipped with single hemostatic clip. Previously placed transrectal drain was intact at the end of

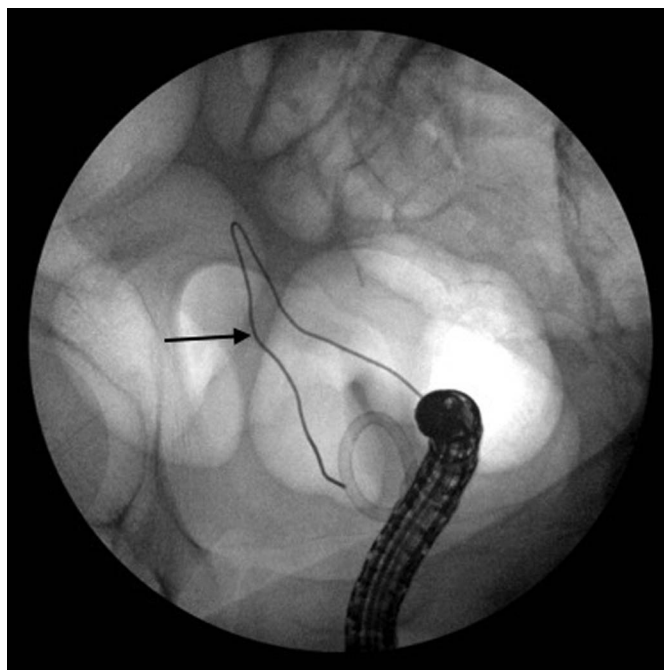


**Figure 1.** Computed tomography showing embedded foreign body (arrow) in the sigmoid colon and associated pelvic abscess.

the procedure, confirmed with fluoroscopy. The patient had an uneventful hospital course and was discharged 2 days later on oral antibiotics. He has continued to do well and the Jackson-Pratt drain was removed 4 weeks later after repeat imaging showed resolution of fluid collection.

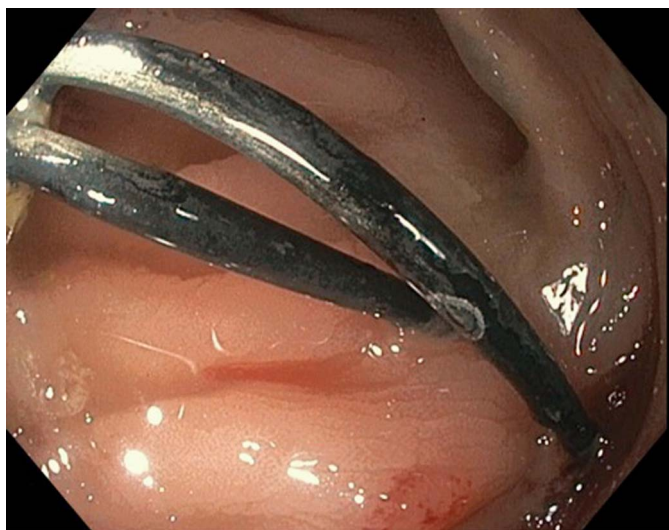
## DISCUSSION

Intentional ingestion of foreign objects in adults is uncommon and is mostly seen in prison inmates and psychiatric patients.<sup>1,2</sup> Most (80% or more) of the accidentally ingested foreign objects

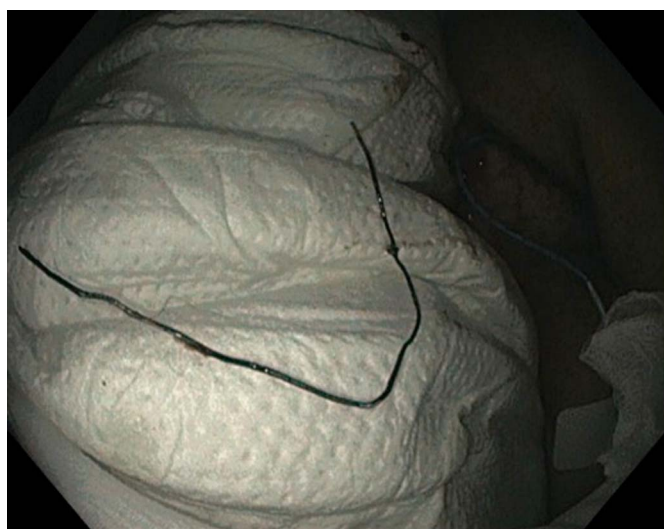


**Figure 3.** Fluoroscopy image of the foreign body (arrow) before its retrieval.

spontaneously pass through the gastrointestinal tract.<sup>3</sup> Ingested sharp pointed objects, including paper clips, can be associated with complications such as perforation, obstruction, abscess, bleeding, and extra luminal migration.<sup>4</sup> Complications from foreign object ingestion are usually noted at areas of bowel angulations, physiologic narrowing, and at sites of surgical anastomosis and adhesions, and the risk of perforation is higher with objects that are long, sharp, or pointed.<sup>4,5</sup> Sigmoid colon is one of the most common sites of impaction. Colonic perforation may be acute or chronic. Acute perforations are usually by pointed objects whereas chronic perforations are mostly from nonpointed objects.<sup>6</sup>



**Figure 2.** Endoscopic view of the foreign body lodged in the sigmoid colon.



**Figure 4.** The extracted paper clip.

Chronic perforations are presumed to be due to long-standing impaction of the foreign body causing pressure necrosis and perforation, and limited inflammation by formation of adhesions, abscess, or inflammatory masses leading to nonspecific clinical manifestations.<sup>6</sup>

In intentionally ingested foreign objects, need for endoscopic and surgical interventions are higher, 63%–73% versus 12%–16% for unintentionally ingested objects.<sup>3</sup> Surgical treatment is considered mandatory once complications such as perforation and abscess have developed.<sup>7,8</sup> Successful endoscopic removal of ingested pointed foreign objects, especially toothpicks, impacted in the colon causing perforation and chronic inflammation, as well as acute perforation have been reported.<sup>7,8</sup> However, surgical intervention in incarcerated individuals should be avoided as it increases the risk for future surgeries and potential practice of self-mutilation of surgical wounds. As such, an individualized and multidisciplinary treatment approach is recommended when incarcerated patients present with foreign body ingestion.<sup>1,3</sup>

In our case, the patient had ingested a folded metal clip that had subsequently lodged in the sigmoid colon causing likely chronic perforation and contained abscess. The nature of the lodgment of the metal clip was unusual with the rounded end embedded in the abscess cavity with the sharp ends protruding in to the lumen. Despite the nature of lodgment of the foreign object, presence of perforation and associated abscess which would have warranted surgical intervention, we proceeded with minimally invasive interventions with successful placement of a drain for the abscess and endoscopic removal of the clip. Surgical service was on standby if the endoscopic intervention was unsuccessful or had led to any significant complication. Our patient did not suffer any major complication and has continued to do well during follow-up. To our knowledge, a paper clip causing bowel perforation and abscess managed nonsurgically has not been reported previously.

## DISCLOSURES

Author contributions: NS Gollol-Raju and N. Jampala wrote the manuscript. H. Khalid and P. Mudireddy revised the manuscript. NS Gollol-Raju is the article guarantor.

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Informed consent was obtained for this case report.

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