

# An incidental finding of a subcutaneous retained firearm pellet mistaken for a retained capsule endoscopy identified by colonoscopy with fluoroscopy and radiological imaging

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## Abstract

Capsule endoscopy retention is a rare event that occurs in 1.5-2.4% of cases utilizing the imaging method. Patients with known Crohn's disease and obstructive tumours carry an increased risk of occurrence with up to a 13% risk of retention. Findings of foreign bodies during examinations or medical procedures are often unexpected and an unlikely occurrence. In this case, we report a 79-year-old male who underwent an interventional colonoscopy after initial capsule endoscopy retention. During the colonoscopy, a subcutaneous abdominal foreign body, which was later identified to be an impacted ball bearing gun pellet, was observed under fluoroscopy.

## Introduction

The use of capsule endoscopy (CE) has improved and facilitated our ability to observe and diagnose potential complications within the small bowel mucosa. Since its inception, the use of CE has been routinely used in cases of obscure gastrointestinal bleeding and in the evaluation of patients with known and suspected Crohn's disease [1,2]. Previous studies have demonstrated the superiority of detecting small bowel lesions with capsule endoscopy compared to other diagnostic methods [2-5]. One of the greater risks and considered complications of capsule endoscopy is capsule retention, which is defined as the presence of the capsule endoscope within the digestive tract for a minimum of 2-weeks. Risk of indefinite CE retention in the small bowel can also occur unless a targeted medical or surgical intervention is initiated [6-9]. We present an interesting case of a subcutaneous abdominal foreign body found during an interventional colonoscopy in response to capsule endoscopy retention.

## Case presentation

A 79-year-old male presented to the emergency department after two days experiencing melena. The patient had three episodes of black stools and a further two episodes of dark bloody stools with clots present, but no change in bowel habits. He had no history of aspirin, NSAID, or blood thinner use, and had no history of alcohol use or cirrhosis. The patient also denied vomiting or abdominal pain and had negative familial history for colon cancer. The patient stated that he had gastric ulcers approximately 7-10 years prior but had not had incidents since. Initial lab reports revealed a hemoglobin of 4.8 g/dL, BUN of 20 mEq/L, and creatinine of 1.2 mEq/L, all consistent with upper gastrointestinal bleeding. The patient was treated with two units of packed red blood cells and the following labs showed a rebound of hemoglobin levels to 7.3 g/dL. A computerized tomography (CT) scan of the abdomen and pelvis displayed diverticulosis and an adrenal

mass. A follow-up blood smear showed normocytic anemia and the patient tested positive for a hemocult test but presented with a lack of active bleeding. A diagnostic colonoscopy showed severe diverticulosis throughout the entire examined colon, internal hemorrhoids, a normal mucosal surface, and no active bleeding.

## Imaging features

Multiple contiguous axial images were obtained through the abdomen and pelvis following bolus infusion of 96 mL Omnipaque 350 non-ionic water-soluble contrast. The imaging showed cholelithiasis, diverticulosis without diverticulitis, atherosclerosis, right adrenal mass (4.0 x 2.9 cm in anteroposterior and transverse respectively), prominent prostate, a left renal cyst (1.6 cm), and no evidence of bowel obstruction.

Following this imaging, the patient was given a pill-camera CE, however, the patient never retrieved the capsule. Imaging was once again attempted using another CE; however, the pill-capsule could not be located for a second time, and a kidney-ureter-bladder x-ray was obtained to locate it. A colonoscopy and rectal exam were performed under video guidance to the cecum, finding colon diverticular disease prominent in the descending colon and a small polyp (3 x 4 mm) in the transverse colon removed for biopsy, but the pill-capsule endoscopy was still unable to be located. A fluoroscopy machine was used to scan the abdomen, showing a 6 x 3 mm rectangular foreign body in

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the sigmoid area overlying the left iliac crest, potentially the entrapped capsule in a diverticulum. However, it was not correlating with the colonoscopy scope position, and on further examination seemed to be a foreign body under the skin. Since the scans did not show the pill-capsule, it is likely that the patient passed the capsules in his stool without his knowledge. However, this foreign body under the patient's skin was an interesting finding, and revealed the patient's history of gunshot wound, as the object was identified as a ball bearing (BB) gun pellet lodged in the patient's abdominal skin.

## Discussion

The risk of capsule endoscopy retention ranges from 1.4-2.5% in the general population and increases to 13% in patients with Crohn's disease, obstructive tumors, and diaphragm disease, often due to side effects of non-steroidal anti-inflammatory pharmaceuticals [9,10]. Patients with obscure gastrointestinal bleeding are at lowest risk of capsule retention.

Foreign bodies are considered a significant cause of morbidity in soft tissue injuries and often unexpectedly present themselves to clinicians as localized inflammation and cellulitis, abscess formation, and delayed wound healing. Removal of neglected soft tissue foreign bodies may be complex due to indurations, fibrotic scarring, and granulated tissue [11]. Additionally, the composition of the foreign body will also influence evaluation and removal. Metal objects in soft tissue pose a lower risk of infection than organic matter. Inert metal foreign bodies may not have to be removed, because removal may induce more trauma than simply leaving them in place. The decision to remove a foreign body is also based on symptoms or risk of complications.

This case presented with capsule retention twice before an interventional colonoscopy was scheduled and the BB-gun pellet was found through proxy of fluoroscopy when the scope location did not correlate with the region of the foreign body. It is possible the CE became trapped in a diverticulum, as most cases of retained CE are asymptomatic, or more likely that the patient passed them through unknowingly. Very few cases of symptomatic bowel obstruction requiring surgical or endoscopic intervention of the impacted capsule have been reported [12,13].

## Conclusion

A 79-year-old male presented to the emergency department after episodes of black and dark bloody stools. A CT of the abdomen and

pelvis displayed diverticulosis and an adrenal mass. Follow-up blood smears showed a normocytic anemia and the patient tested positive for hemocult but showed no signs of active bleeding. A diagnostic colonoscopy demonstrated severe diverticulosis throughout the entire examined colon, internal hemorrhoids, a normal mucosal surface, and verified the lack of active bleeding. Capsule endoscopy was performed twice without retrieval followed by an interventional colonoscopy, in which a subcutaneous abdominal foreign body was identified via fluoroscopy. Follow-up imaging later identified the object as a BB-gun pellet from a previous gunshot wound encountered by the patient.

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