

Intestinal Obstruction by Capsule Endoscopy in a Patient With Radiation Enteritis

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ABSTRACT

Background: Video capsule endoscopy is in widespread use as a diagnostic modality. Although capsule endoscopy is generally considered safe, several prior reports have documented capsules' failure to progress through narrowed areas of intestine. Symptomatic retention and obstruction by capsule endoscopy have not yet been reported in the setting of radiation enteritis.

Methods: We report a case of a patient with a history of pelvic radiation who underwent capsule endoscopy to identify an occult intestinal bleeding source after conventional modalities were not diagnostic.

Results: The patient was noted to have capsule retention several days longer than was expected, and video images of the distal bowel showed edema, narrowing, and ulceration consistent with radiation enteritis. The patient developed a symptomatic bowel obstruction requiring resection of this segment of bowel, including the impacted capsule.

Conclusion: A history of abdominal or pelvic irradiation in patients with occult gastrointestinal bleeding should serve as a relative contraindication to video capsule endoscopy. The risk of obstruction and possible need for surgical intervention should be clearly outlined for such patients if they are to undergo this diagnostic maneuver.

Key Words: Radiation enteritis, Capsule endoscopy, Wireless, Ileal stricture, Capsule retention.

INTRODUCTION

Capsule endoscopy is a relatively new diagnostic modality for the region of small intestine that is less amenable to conventional endoscopic evaluation. Previous reports have demonstrated the video capsule's ability to lodge in narrowed areas of small bowel.¹⁻³ Even soluble "patency capsules" have been shown to cause obstruction.⁴ Capsule retention requiring retrieval by either endoscopy or operation is a relatively rare occurrence, reported in 1% to 6% of cases of capsule endoscopy.⁵⁻⁸ The majority of cases of retention are seen in patients with strictures⁹ with a clear pathologic risk factor, most commonly Crohn's disease, cancer, or prior abdominal surgery. Based on a single case report of asymptomatic capsule retention in a patient with previous pelvic radiation,¹⁰ it has been hypothesized that a history of radiation therapy might be a potential risk factor for capsule-related obstruction; however, until this time no cases have been reported in the literature. We present a case of intestinal obstruction after wireless capsule endoscopy in a patient with a history of pelvic irradiation for endometrial cancer.

CASE REPORT

The patient is an 85-year-old woman who developed melena and anemia while on Coumadin therapy for atrial fibrillation and a prior cerebrovascular accident. The patient had an extensive past medical history that included endometrial cancer treated with radical hysterectomy and pelvic radiation therapy 11 years previously. After correction of an elevated INR, the patient underwent colonoscopy and esophagogastroduodenoscopy. Although blood was seen throughout the colon, no discreet bleeding source was identified on either study. The patient then underwent capsule endoscopy, which revealed diffuse ileitis with ulceration and hemorrhage. After the administration of blood products, the patient's bleeding stopped and she was discharged on hospital day 6. One week later, the patient returned to the emergency department with complaints of nausea, vomiting, and diarrhea. An abdominal and pelvic CT scan revealed a retained capsule in the distal small bowel without clear signs of obstruction. The patient was treated with hydration and antiemetics, and her symptoms resolved. She was seen again 3

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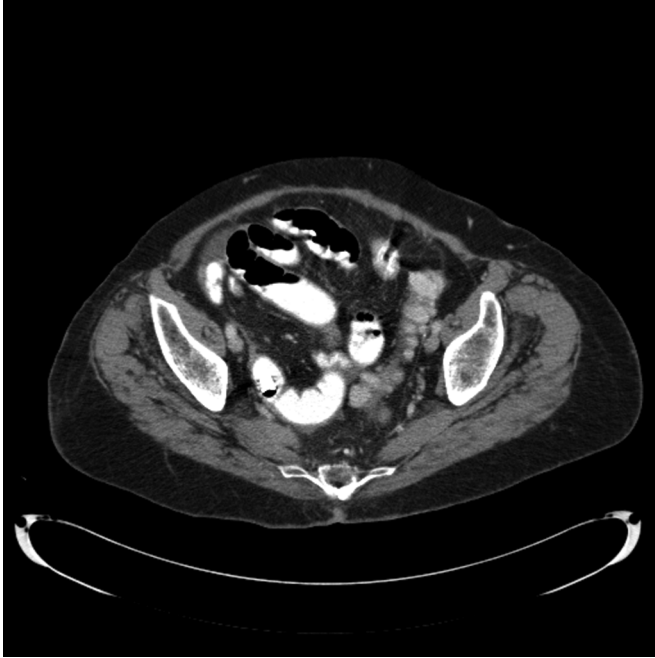


Figure 1. CT scan demonstrating retained video capsule in terminal ileum.



Figure 2. Supine abdominal film demonstrating video capsule in right lower quadrant.

days later, with recurrent nausea and vomiting, as well as failure to pass flatus, stool, or a capsule since her prior visit. An abdominal series revealed capsule retention in the right lower abdomen, as well as a dilated loop of more proximal small bowel. Given these findings and a physical examination consistent with obstruction, the patient was

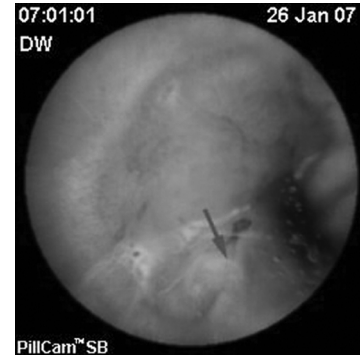


Figure 3. Capsule endoscopic view of narrowed ileal lumen with proximal ulceration and scarring.

taken to the operating room for exploration. She was found to have an inflamed, thickened, twisted segment of terminal ileum that was resected and found to contain the impacted capsule. The pathology of this specimen was positive for acute and chronic inflammation and ulceration, consistent with radiation enteritis.

DISCUSSION

Video capsule endoscopy has been described as a very safe procedure compared with conventional endoscopy and has been shown to have excellent diagnostic capability.² The only reported complications in multiple studies are rare device malfunction, a failure of the capsule to progress throughout the entire bowel during the limited recording time of the device, and frank impaction, among which the latter is by far the most common. Although the device can be quite useful in identifying previously unappreciated pathology, it will, on occasion, require an invasive procedure for its retrieval.

CONCLUSION

Given the events presented in this case report, patients should be informed that a past history of radiation therapy might place them at increased risk for obstruction with wireless capsule endoscopy.

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