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Case Report

Capsule endoscopy related small bowel obstruction in a patient with radiation enteritis

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Capsule endoscopy is indicated primarily to identify small intestine pathology. Capsule retention is an uncommon complication of capsule endoscopy which can sometimes result in symptomatic bowel obstruction. We report a case of an 84 year old gentleman with a past history of locally advanced prostate cancer treated with radiotherapy about 20 years ago, who was investigated for occult gastrointestinal blood loss with a capsule endoscopy. He developed symptomatic small bowel obstruction related to capsule endoscopy due to undiagnosed strictures related to past radiotherapy. There has been only one other reported case of symptomatic bowel obstruction as a complication of capsule endoscopy in a patient previously treated with radiotherapy for endometrial cancer. This case highlights the need for cautious use of capsule endoscopy in patients having a past history of abdominal or pelvic radiotherapy, who may have enteric strictures.

Key words: capsule endoscopy, radiotherapy, prostate cancer, radiation enteritis
Introduction:

INTRODUCTION

Capsule endoscopy is indicated primarily to identify small intestine pathology, an anatomic site that is difficult to visualize through conventional endoscopy. Capsule retention is an uncommon complication of capsule endoscopy which can sometimes result in symptomatic bowel obstruction. A history of abdominal or pelvic radiation therapy might be a potential risk factor for capsule-related obstruction due to undiagnosed strictures.

Case report

An 84 year old man was investigated for occult gastrointestinal (GI) blood loss. His only significant past history was of localised prostate cancer treated with external beam radiotherapy (EBRT) twenty years prior. Endoscopy and colonoscopy performed did not reveal a cause for any GI blood loss. A capsule endoscopy with Pillcam® (disposable plastic capsule) was undertaken to evaluate his small bowel. Three weeks later, the patient presented to the emergency department with abdominal pain, nausea and vomiting. An abdominal X-ray at that time revealed distended small bowel with normal colonic gas, suggestive of ileus or partial small bowel obstruction with the capsule still in situ (Figure 1). He was discharged home after conservative management for 2 days, although he had not excreted the capsule. Three weeks later he was admitted again with abdominal pain. He had not passed any flatus for over 2 days, and still denied seeing the capsule excreted. Abdominal X-ray revealed multiple air fluid levels and dilated small bowel loops consistent with small bowel obstruction and the capsule was visualised

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Figure: 1

Figure 2:

in the right pelvis (Figure 2). CT abdomen and pelvis confirmed gross dilatation of multiple loops of small bowel, predominately jejunum, which contained a large amount of fluid and gas (Figure 3). The capsule was noticed to be low in the pelvis anterior to the right side of the sacrum. Low midline laparotomy was performed. Intra-operatively, the distal small intestine was completely obstructed, with extensive ileal and mesenteric scarring consistent with Common Terminology Criteria for Adverse Events v3.0 (CTCAE) grade 3 radiation enteritis, with terminal ileal stricturing.

Figure: 3

Loop ileostomy was fashioned just proximal to the ileal disease, and the Pilcam® extracted via the stoma enterotomy. Histopathological analysis revealed fibrosis and vessel disease consistent with radiation enteritis.

DISCUSSION

Capsule endoscopy was initially approved by FDA in 2000 and since then has been evolving both in terms of technology and indications. It is designed primarily to identify small intestine pathology, an anatomic site that is difficult to visualize through conventional endoscopy. The resolution of images acquired is even higher than that of conventional endoscopes. The common indications for capsule endoscopy include occult GI blood loss, suspected Crohn's disease, malabsorptive syndrome, or small intestinal tumours, in addition to small bowel injury secondary to drugs, coeliac disease, and abdominal pain of unclear aetiology. The list of relative contraindications includes patients with known or suspected obstruction, stricture, fistula, or motility disorders, patients with cardiac pacemakers or other implanted electro-medical devices, dysphagia, and pregnancy.

Capsule retention is an uncommon complication of capsule endoscopy which can sometimes result in symptomatic bowel obstruction due to capsule impaction. In a meta-analysis that included 22,840 procedures, capsule retention occurred in 184 procedures with a pooled retention rate of 1.4 %. One-hundred and eight capsules (58.7%) were surgically removed, 23 (12.5%) endoscopically removed, 29 (15.8%) passed spontaneously, two (1.1%) remained retained at time of reporting, one (0.5%) was expelled via emesis, one (0.5%) laparoscopically removed, and

the details of removal not reported for the remaining 20 capsules (10.9%). It has been hypothesized that a history of radiation therapy might be a potential risk factor for capsule-related obstruction due to undiagnosed strictures leading to capsule impaction. However, there has been only one other reported case of symptomatic bowel obstruction as a complication of capsule endoscopy in a patient previously treated with radiotherapy.

CONCLUSION

This case highlights the need for cautious use of capsule endoscopy in patients having a past history of abdominal or pelvic radiotherapy, who may have enteric strictures. Non-passage of the capsule after 10hours may need follow-up with serial plain X-rays to minimise the complications of capsule impaction.

Lessons from practice

- Capsule endoscopy is indicated primarily to identify small intestine pathology, an anatomic site that is difficult to visualize through conventional endoscopy.
- Capsule retention is an uncommon complication of capsule endoscopy which can sometimes result in symptomatic bowel obstruction.
- Cautious use of capsule endoscopy should be ensured in patients having a past history of abdominal or pelvic radiotherapy, who may have undiagnosed enteric strictures.
- Non-passage of the capsule may need follow-up with serial plain X-rays.

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