Enteroenteric Intussusception Due to Balloon-Retained Gastrostomy Catheter

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There are a variety of retention devices on gastrostomy catheters including pigtails, balloons, and mushrooms. Although dislodgement is the most common complication related to retention device failure, a second unusual complication may occur when bowel peristalsis causes distal migration of the retention device. This usually occurs when the device is not affixed externally. Rarely, the retention device may act as a lead point for an intussusception.

CASE REPORT

A 48-year-old man who had an indwelling balloon-retained gastrostomy catheter was seen in our emergency department for abdominal pain and vomiting. The catheter had been placed 6 months earlier and exchanged once by our section of interventional radiology for balloon rupture. A computed tomography scan (Fig. 1) was obtained and showed that the gastrostomy balloon had migrated into distal small bowel serving as a lead point causing the more proximal small bowel to intussuscept into the more distal bowel.

The patient was then taken to the interventional radiology section for a fluoroscopic exam. Inspection of the site revealed that the external O-ring was present but worn to the point that the gastrostomy catheter easily slid back and forth through the external bolster. Contrast was injected into the tube (Fig. 2), and opacified small bowel loops indicated distal migration of the device. The balloon was deflated, and the tube was exchanged over a guide wire for a new catheter. The new balloon was then reinflated in the stomach and the external O-ring cinched down on the catheter. The patient reported instantaneous relief of symptoms and was discharged with no further complaints.

DISCUSSION

Distal migration of gastrostomy catheters is a well-recognized phenomenon that occurs when the catheter is no longer held by an external fixating device such as an O-ring. Enteroenteric intussusception associated with migration is rare and should be easily recognized on plain radiographs or cross-sectional imaging studies (Fig. 3). Retrograde jejuno gastric intussusception is rarer and may occur as the result of the distally migrated balloon being pulled back to stomach by an unsuspecting caretaker or physician without first being deflated. In this instance, the jejunum is pulled back into the stomach along with the balloon. This latter condition may require surgical decompression.

Gastrostomy migration with associated intussusception appears to be more common in the pediatric population and has been reported to occur with all types of retention devices. In fact, it has even been reported to occur with straight catheters due to the catheter tip irritating bowel, causing thickening, which then serves as a lead point. In some cases, ischemic necrosis has been reported.

Balloon-retained gastrostomy catheters are commonly fixed externally by a rubber O-ring. In our case, over a period of several months, the ring became fatigued and allowed the balloon to migrate distally. When this occurs, symptoms depend on the degree of balloon inflation. Well-inflated balloons tend to lodge at the gastric antrum and cause gastric outlet obstruction; in this patient, the balloon passed through this segment of bowel but became obstructed more distally, causing an intussusception. Occasionally, the balloon may be pulled back into the tract (Fig. 4) causing a “buried balloon syndrome” analogous to the “buried bumper syndrome” (which may occur with mushroom-retained gastrostomy catheters). This may be recognized on physical exam in a

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Figure 1 A 58-year-old man with abdominal pain six months after balloon-retained gastrostomy tube insertion. (A) Enhanced computed tomography (CT) scan shows ostomy site. (B) Enhanced CT scan at caudal level shows tube traveling through gastric antrum. (C) Enhanced CT scan at more caudal level shows enteroenteric intussusception around catheter. (D) Enhanced CT scan at most caudal level shows inflated balloon in distal small bowel serving as lead point for intussusception.

Figure 2 Fluoroscopic guided reduction of gastrostomy tube intussusception. (A) Initial fluoroscopic image shows balloon in expected position of small bowel. (B) Fluoroscopic image after contrast injection shows small bowel opacification. (C) Final fluoroscopic image after catheter has been exchanged for new gastrostomy.

Figure 3 Enteroenteric intussusception in different patient. (A) Enhanced computed tomography (CT) shows ostomy site. (B) Enhanced CT at more caudal level does not show balloon retention device in stomach. (C) Enhanced CT at more caudal level demonstrates balloon retention device in distal small bowel. (D) Coronal reconstruction of enhanced CT shows balloon in distal small bowel in left lower quadrant. (E) Fluoroscopic image after repositioning shows balloon in stomach.

Figure 4 Buried balloon syndrome. Unenhanced computed tomography shows balloon of gastrostomy catheter pulled into ostomy track.

patient with a well-healed gastrostomy who reports new focal pressure or pain at the ostomy site.

SUGGESTED READINGS

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