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INTERESTING MEDICAL IMAGE

Management of a Migrating Feeding Tube

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التحكم بأنبوب التغذية المتنقل

زمزم سلام الهشامية، خالد النعماني و عبدالله الكلباني

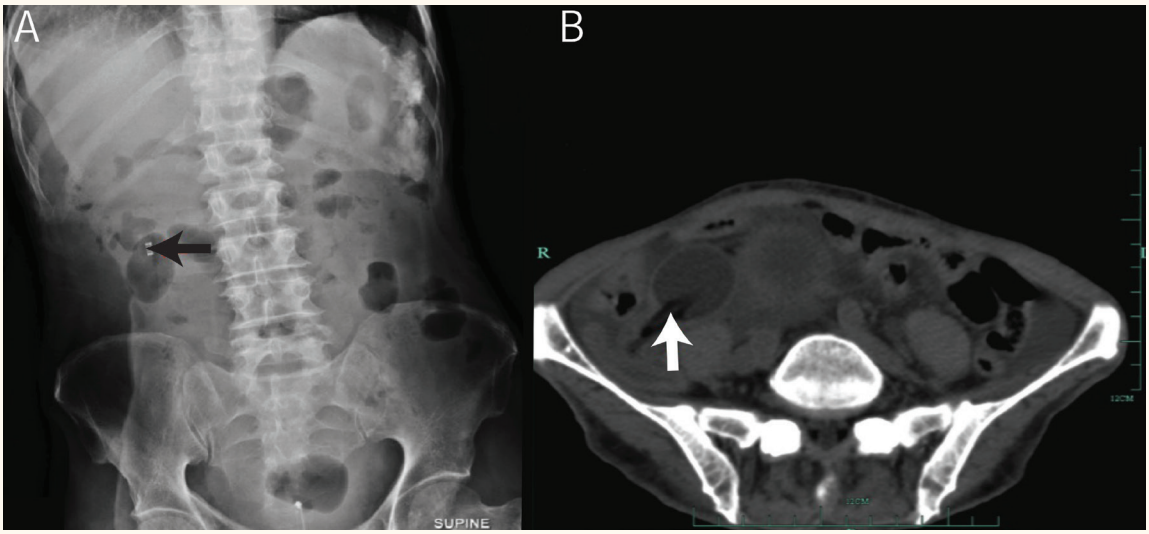

Figure 1 A & B: Plain radiograph of the abdomen showing **(A)** the Foley catheter tip in the right upper quadrant (black arrow) and **(B)** axial image of computed tomography scan showing Foley catheter with the inflated balloon positioned at the ileocecal valve (white arrow).

A 67-year-old male with dementia presented with a locally advanced inoperable obstructive gastric adenocarcinoma. A jejunostomy (JS) was perfomed to insert a jejunal feeding tube; however, it was pulled out one month later by the patient. In order to keep the JS tract accessible, a size 20 Fr Foley catheter was placed which included an inflatable balloon filled with 10 cc of water. Unfortunately, the Foley catheter slipped internally a few days later with no symptoms or signs of an intestinal obstruction. An abdominal radiograph showed the tip of the catheter in the right upper quadrant [Figure 1A]. There were no radiological signs of an intestinal obstruction and it was not clear if the catheter was intraluminal or if it was in the peritoneal cavity. A computed tomography (CT) scan of the patient's abdomen confirmed its intraluminal position with the inflated catheter balloon at the ileocecal valve [Figure 1B]. Initially, the clinical team opted to keep the patient under observation for 48 hours, hoping that the catheter would pass through the ileocecal valve; however, the catheter did not pass through. A colonoscopy was performed to remove the catheter [Figures 2A & B]. Multiple attempts to puncture the catheter balloon were unsuccessful. Finally, the catheter tip was held by a snare and pulled gently through the ileocecal valve and the colon. An expandable metallic stent was inserted across the obstruction point of the gastric outlet under fluoroscopic guidance. The patient's feeding was restarted orally and he was later discharged home with a tolerated oral diet.

Comment

Intestinal obstructions due to an inflated Foley catheter balloon inserted into a JS tract have rarely been reported.[1–3]

There were many challenges in this case. The first challenge was in determining if the feeding Foley catheter was intraluminal or whether it had moved

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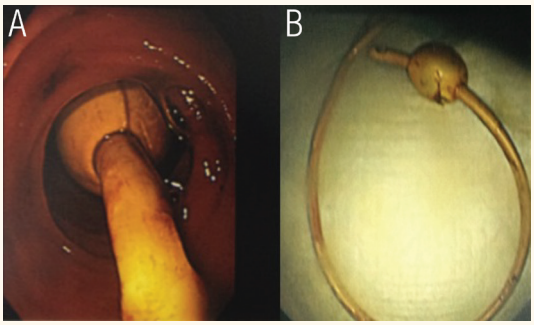

Figure 2 A & B: The Foley catheter with the inflated balloon at the ileocecal valve during the colonoscopy (**A**) and after its removal from the patient (**B**).

into the peritoneal cavity. This form of catheter is made of rubber and therefore was not seen on the plain X-ray. However, a spiral metallic piece, proximal to the catheter's tip, was used to reinforce the tip and prevent collapse during suctioning; this piece was fortunately visible via X-ray [Figure 1A]. There was concern, however, that the catheter might dislodge into the peritoneal cavity, leading to peritonitis. A CT scan of the abdomen clearly showed the catheter's exact position at the level of the ileocecal valve. There were no radiological signs of an intestinal obstruction [Figure 1B].

The exact mechanism that led to the intraluminal migration of the Foley catheter is unknown. In this case, it is likely that the patient experienced wound dehiscence at the insertion site, secondary to a gastric and pancreatic fluid leak. The weight of the water-filled balloon, in addition to the distal bowel, propagated waves that may have caused an internal migration of the feeding tube.

The second challenge was the best way to manage a patient with multiple comorbidities. Thompson *et al*. described an ultrasound (US) puncture of a catheter balloon that had obstructed a 53-year-old patient's bowel.[4] However puncturing the catheter balloon using US guidance would have been difficult in the current patient. The patient had kyphoscoliosis, which resulted in a poor window for US imaging, and it was difficult to keep the patient in one position due to frequent movements secondary to dementia. Since there were no signs of an intestinal obstruction, and to avoid the morbidities associated with surgery, the decision was made to perform a colonoscopy and an intubation of the terminal *ileum*. The inflated balloon was clearly seen during the colonoscopy at the ileocecal valve [Figures 2A & B]. O'Keefe *et al*. reported a successful endoscopic removal of an inflated Foley catheter balloon obstructing the duodenum which was achieved by rupturing the balloon.[5] Unfortunately, multiple attempts to puncture the catheter balloon using different techniques and instruments, such as endoscopic needles, an endoscopic snare, a needle knife, biopsy forceps and the sharp edges of an endoscopic tripod retriever, were unsuccessful. This was most likely due to the stiffness of the balloon, as a result of its direct contact with bile and bowel content.

Caregivers responsible for patients with feeding catheters should be informed about and made aware of the risk of catheter migration, which could cause a small bowel obstruction. Therefore, feeding tubes must be well fixed to the patient's skin and regularly checked by the caregiver.

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