Jejuno-jejunal intussusception following gastrectomy

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Case Report

An 80 year old female presented to the emergency department with a 12 hour history of central abdominal pain, with nausea and haematemesis. On examination, she was haemodynamically stable. She had a palpable mass in the mid abdomen, with overlying tenderness. She was otherwise in good health, with her only regular medications being aspirin and anti-hypertensives.

She had previously undergone a subtotal gastrectomy with Roux-en-Y reconstruction five years ago for gastric adenocarcinoma. Histology from this was pT0N0. Her last clinic follow up was two months ago, with no recurrence on a staging computed tomography (CT) scan of her chest, abdomen and pelvis.

Resuscitation was initiated with intravenous fluids and an intravenous proton pump inhibitor. She underwent an urgent gastroscopy where a non-obstructing hemi-circumferential mucosal mass 40 cm from the remnant stomach was found. This mass was biopsied by endoscopic biopsy forceps. This was complicated by substantial bleeding, which was partially controlled with two endoscopic clips. A tattoo was placed distal to the mass. Despite the bleeding, she remained haemodynamically stable.

An urgent CT angiogram of her abdomen was undertaken to investigate the source of the mucosal mass and assess for ongoing bleeding. The CT scan revealed a mass in a concentric circle, possibly associated with the entero-enterostomy, suggestive of intussusception, with resultant mechanical small bowel obstruction.

An exploratory laparotomy was urgently organised. At laparotomy, jejuno-jejunal intussusception was found, where the common limb had intussuscepted retrograde into the biliary limb, causing obstruction of both the alimentary Roux and the biliary limb. Reduction was not attempted for two reasons. Firstly, the segment that had intussuscepted appeared friable. Secondly, there was concern about a mass lesion acting as a lead point causing the intussusception. The entire anastomotic segment was resected, and the alimentary limb and the entero-enterostomy were re-fashioned.

The patient had an uneventful recovery following the operation and was discharged to the rehabilitation ward on day 9. Histology confirmed intussusception with evidence of ischemia. However, no mass lesion was seen as the cause of the intussusception.

Adult intussusception accounts for less than 5% of all cases of intussusception¹.

Unlike the paediatric population, a demonstrable pathology is present in 75-90% of cases²⁻⁴.

Intussusception is a very rare complication following gastrectomy, occurring in 0.07-2% of cases². However, over 80% of intussusception cases following abdominal surgery occur after gastrectomy^{1,2}. Complications following gastrectomy or gastric bypass with Roux-en-Y reconstruction are not uncommon, especially in light of increasing number of bariatric procedures being performed these days. Intussusceptions, internal hernias, bleeding or perforated stomal ulcers are a few that need prompt operative intervention.

Intussusception after gastrectomy can be categorised as antegrade or retrograde. Antegrade intussusception tends to occur early in the immediate post-operative period, while retrograde cases occur late, often many years following gastrectomy. They are more common after Roux-en-Y procedures, compared to the Billroth I or II^{1,3}.

The pathophysiology of intussusception following gastrectomy is poorly understood. In the absence of a mass lesion acting as a lead point, excessive peristalsis from jejunal spasm, mechanical kinking of bowel loops, hyperacidity,

length of the afferent limb, retrograde peristalsis and raised intra-abdominal pressure have been postulated as contributing factors^{2, 4-6}.

Intussusception in adults is classically diagnosed on computed tomography (CT) scan with evidence of a target sign or concentric rings, as seen in our patient (Fig. 2). This is in contrast to the paediatric population, where ultrasound is very effective as a diagnostic tool. The management of intussusception in adults is universally operative. This usually involves resection of the involved segment due to concern about an intra-luminal lesion acting as a lead point.

Intussusception, while rare should be kept in mind as an important differential, especially in a post gastrectomy patient with abdominal pain and haematemesis. Gastroscopy may reveal the intussusception, which can be mistaken for a mucosal mass or bezoar, as in our patient. CT scan is the diagnostic imaging modality of choice. Early diagnosis and surgical management is crucial to optimise patient outcomes. This case is a timely reminder that it is imperative to have a broad list of differential diagnoses while treating an unwell patient, rather than focusing on a specific problem only. In this patient, the diagnosis of a small bowel obstruction was not initially appreciated. This led to unnecessary endoscopic intervention before the small bowel obstruction was diagnosed on CT scan.

Fig.1 demonstrates the endoscopic images taken in the patient. The intussusceptum was mistaken as a 'mucosal mass'.

Fig.2 showing the CT images of the intussusception. The coronal image in Fig. 2a shows the intussusception with the common channel intussuscepting retrograde. The axial image in Fig.2b shows the static image suggestive of the intussusception.

Fig. 3 shows the intra-operative images of the retrograde intussusception and the tattoo that was placed by the endoscopist.

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Fig.1.tif

Fig.2.tif

Fig.3.tif

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