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Case Report

A rare case of surgical obstructive jaundice due to spontaneous gastro-gastric intussusception

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ABSTRACT

Intussusception in adult patients is far less common than in paediatric population. In adults, the small bowel is the most common site of intussusception and stomach or a surgical stoma as the site of intussusception is unusual. Epidemiological data specifically related to gastrogastric intussusception is extremely rare. When an adult develops intussusception, they typically present with nonspecific symptoms like vomiting, pain abdomen and abdominal distention. Abdominal mass and features of intestinal obstruction which are the common modes of presentation in paediatric patients are infrequently encountered in adult patients. Foregut intussusception is usually caused by either gastric polyps passing through the pylorus into the duodenum or intussusception of the gastric remnant through a surgically fashioned gastro-jejunal anastomosis. There have never before been any reports of a true gastro-gastric intussusception, according to a search of the MEDLINE database. We present a case of a 38-year-old gentleman who presented with gastro-gastric intussusception due to a large polypoidal mass arising from the greater curvature of stomach which had prolapsed into the duodenum hence acting as a lead point with resultant gastric outlet obstruction and extrinsic compression on the retro duodenal portion of the common bile duct, leading to surgical obstructive jaundice which subsided after surgical resection without the need for any hepato-pancreatic intervention like biliary stenting. The rarity of gastro-gastric intussusception with the offending intussusceptum causing obstructive jaundice makes this case one of its kind and worthy of publication.

Keywords: Gastric polyp, Obstructive jaundice, Gastric outlet obstruction, Gastro-gastric intussusception, Intussusception

INTRODUCTION

The first recorded account of an intussusception dates back to 1674 and was written by the Dutch physician Paul Barbette. In 1871, Sir Jonathan Hutchinson successfully reduced an intussusception in a 2-year-old girl after hydrostatic reduction had failed.[1]

At a rate of 2-3 cases per million adults annually, intussusception in adult patients is far less common than in paediatric populations, accounting for only 5% of all cases.[2] In adults, the small bowel is the most common site of intussusception; 10% of cases also occur in the stomach or at the location of a surgical stoma.[3] Epidemiological data specifically related to gastrogastric intussusception are not found. Adult intussusceptions are rarely idiopathic, in contrast to childhood cases, with a known cause found in 70–90% of cases.[4]

Malignant neoplasms are commonly identified as lead points, accounting for 66% of colonic and 30% of enteric intussusceptions. Other polypoidal lead points include hamartomas, lipomas, hyperplastic polyps, and stromal tumors.[5] When an adult develops intussusception, they

typically present with nonspecific symptoms like vomiting and abdominal pain; an abdominal mass and intestinal blockage are less common.[6]

Any pathologic lesion of the bowel walls or irritant within the lumen that modifies normal peristaltic activity and acts as a lead point is thought to be the cause of secondary intussusception in adults. This lesion can cause an invagination of one segment of the bowel (intussusceptum) into the other (intussuscipiens). Intussusception presents with similar radiographic characteristics everywhere it occurs. Even at unusual sites, hence aid in the diagnosis. Although it is not common, foregut intussusception is usually caused by either gastric polyps passing through the pylorus into the duodenum or intussusception of the gastric remnant through a gastrojejunal anastomosis. There have never before been any reports of a true gastrogastric intussusception, according to a search of the MEDLINE database.

There have been cases of large hypertrophic polyps prolapsing through the pyloric canal, resulting in intermittent obstruction of the stomach outlet, and even blocking the ampulla of Vater, which can lead to pancreatitis.[7,8]

Imagings on computed tomography (CT) are characteristic and hence make CT the investigation of choice for diagnosis.

CASE REPORT

A thirty-eight-year-old gentleman, with no medical comorbidities with history of sarcoidosis of stomach diagnosed 5 years back with ongoing treatment with prednisone 10 mg, presented with chief complaints of epigastric pain, multiple episodes of non-bilious vomiting, decreased appetite for 1 month associated with loss of 7 kg weight. His symptoms increased progressively in the past 10 days and he wasn't able to tolerate even oral liquids.

On clinical examination, he was dehydrated. Per abdomen examination revealed an ill-defined epigastric mass which was firm in consistency, non-tender with limited mobility with respiration and restricted sideways mobility.

The upper GI endoscopy revealed a large polypoidal growth along entire greater curvature with an uneven surface protruding down into the antropyloric region (Figure 1).

Histopathology was suggestive of tubulo-villous adenoma without any dysplastic focus. A PET CT revealed multiple intraluminal soft tissue mass lesions arising from wall of fundus and greater curvature of stomach with SUV 13.5 (Figure 2).

Surprisingly, he developed jaundice during the course of evaluation which was insidious in onset, slowly progressive without any associated cholangitis.

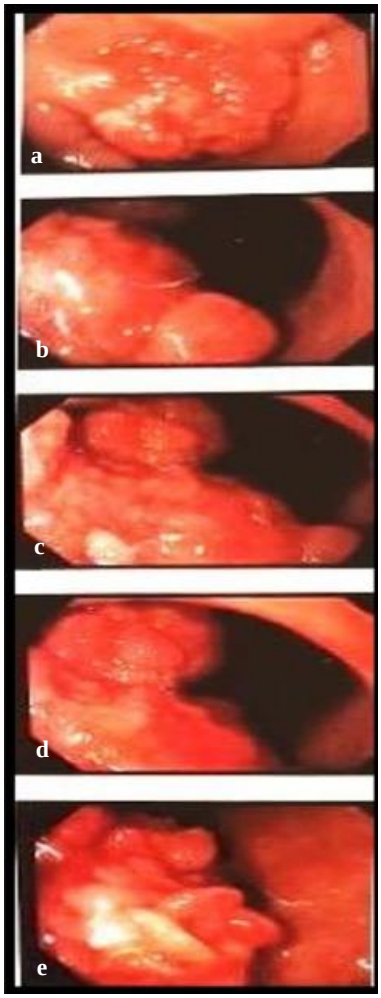

Figure 1 (a-e): Endoscopy showing polypoidal mass along greater curvature.

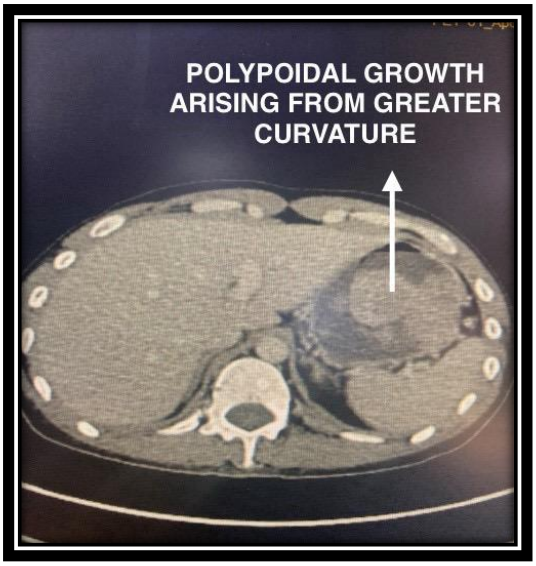

Figure 2: CT images of the polypoidal mass along the greater curvature.

The abdominal sonography for evaluation of Jaundice revealed a large pedunculated polypoidal mass lesion with

whorled appearance at antro pyloric region extending up to first part of duodenum and causing extrinsic compression of common bile duct. Magnetic resonance imaging (MRI) upper abdomen with MRCP showed altered gastroduodenal anatomy with an intraluminal mass prolapsing into the duodenal lumen and thereby compressing the distal bile duct (Figures 3a and b).

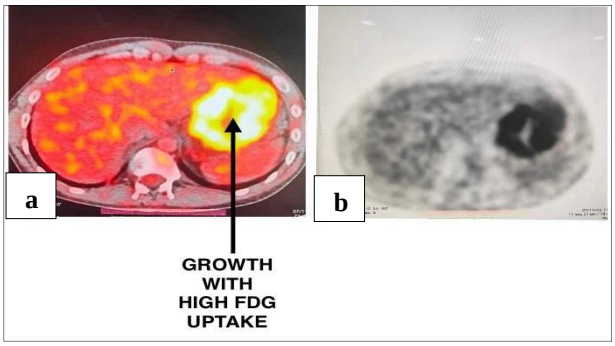

Figure 3 (a and b): PET-CT images showing high SUV uptake of the polypoidal mass.

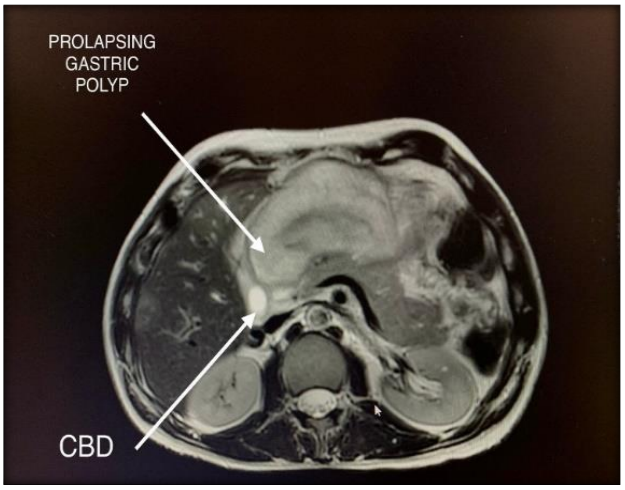

Figure 4: MRI abdomen with MRCP with prolapsing gastric polyp.

Patient underwent an exploratory laparotomy. He was found to have a gastro-gastric intussusception. The anterior wall of the body of stomach had invaginated into the antropyloric region thereby occluding the lumen and causing complete obstruction with associated dilatation of pylorus and the first part of duodenum (Figure 4).

Anterior gastrotomy was done and the prolapsing polypoidal mass was reduced back into the stomach (Figures 5a and b). There were multiple large polypoidal masses along the greater curvature and fundus of stomach. A wide local resection of stomach along the greater and lesser curvature of stomach was performed and the resected margins were examined with intra operative frozen section which was negative for malignancy. Primary repair of the gastric defect was performed (Figure 6).

Figure 5: MRI showing the extrinsic CBD compression.

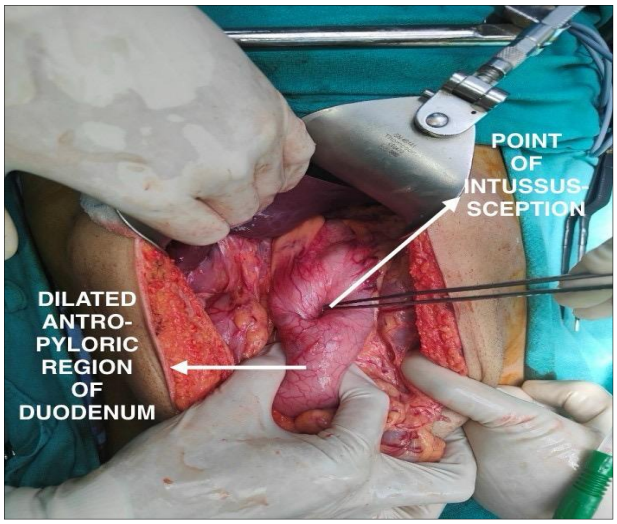

Figure 6: Gastrogastric intussusception.

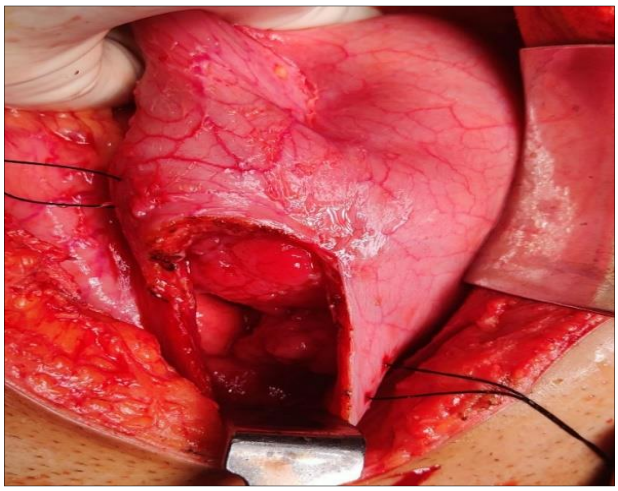

Figure 7: Anterior gastrotomy with reduction of polypoidal mass along greater curvature.

The post-operative course was uneventful. The Ryle's tube was removed on POD2. He was started on oral liquids on POD3 and soft diet by POD5 that he accepted and tolerated

well. The final histopathology was suggestive of tubulovillous adenoma with low grade dysplasia, without any lymphovascular or perineural involvement with resected margins free from dysplasia or malignancy.

4 weeks' post-surgery the patient continues to be stable, is tolerating normal diet and has gained 2 kg weight in the post-operative period.

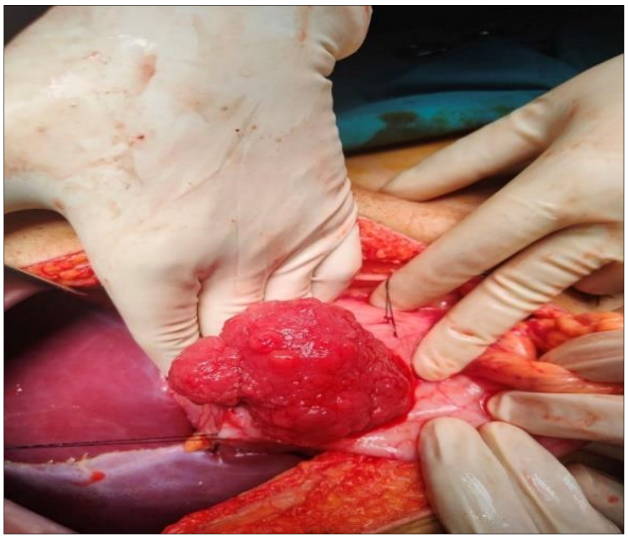

Figure 8: Polypoidal mass.

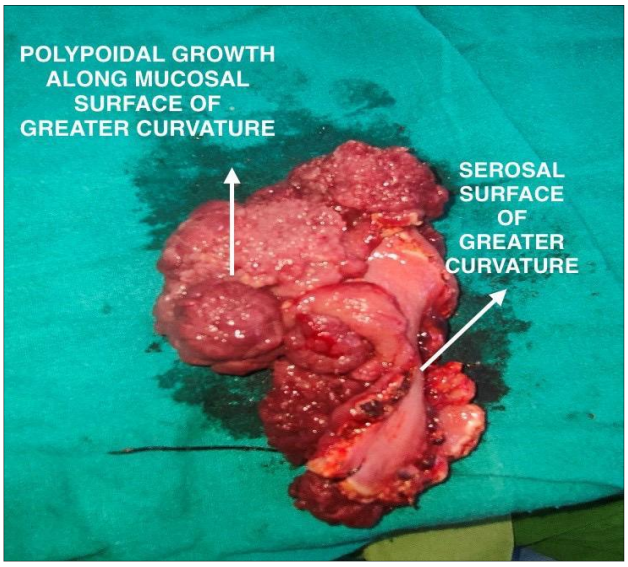

Figure 9: Wide local excision of stomach specimen.

DISCUSSION

"The first known description of intussusception was made by the Dutch physician Paul Barbette in 1674," according to Behrooz et al, "with Sir Jonathan Hutchinson performing the first successful manual reduction of an intussusception in 1871 on a 2-year-old girl".[9] Only two to three cases of intussusceptions per million occur annually; adult patients account for 5% of all cases. Merely 10% of adult intussusceptions involve the stomach out of all of those.

The "telescoping" of a distal stomach portion into the more proximal stomach portion is known as gastrogastric intussusception. Symptoms include emesis, generalized weakness, and abdominal pain. The average age range is 65 to 83 years old. Adult intussusceptions are rarely idiopathic, in contrast to those in children. The majority of the time, they are connected to lead points produced by stomach neoplasms. There have only been 9 case reports of gastrogastric intussusception between 1950 and 2017, and all of those cases have been linked to neoplasms.[1] Ascites and hiatal hernias have been the cause of a few recent reported cases.[10,11]

Intussusception can occur at any part of the digestive tract and presents with similar radiographic characteristics at the location of occurrence. Even at unusual sites, these distinguishing characteristics can aid in the diagnosis of intussusception. Although uncommon, foregut intussusception is caused by either a large gastric polyp passing through the pylorus into the duodenum or intussusception of the gastric remnant through a gastrojejunal anastomosis. Medical literature rarely reports gastrogastric intussusception case discussions or reviews.

Five percent of all intussusceptions are adult intussusceptions, with gastrogastric intussusceptions accounting for 10% of all cases. The etiology of very few documented cases is benign.[1] In certain reports from 2018 to 2020, non-malignant ascites has been linked as the cause of gastrogastric intussusception.[9,11] A severe gastrogastric intussusception accompanied by a gastric volvulus and a hiatal hernia was experienced by an 82-year-old patient in 2019. This resulted in gastric antrum perforation and ischemic necrosis, which ultimately caused septic shock and death.[10] A duodenal intussusception was documented as a biliopancreatic diversion complication in 2018.[12]

Instead of a "lead point" brought on by a stomach cancer, Behrooz et al proposed that elevated intra-abdominal pressure could be the cause of gastrogastric intussusceptions.[9] Our patient's small bowel obstruction most definitely increased intra-abdominal pressure, which supports this proposed etiology. In adults, gastrogastric intussusceptions are exceedingly uncommon and always require surgical correction, regardless of the etiology.[13] When a patient is diagnosed with a gastrogastric intussusception, it is always advisable to investigate the possibility of gastric cancer.

Adult-onset intussusceptions, typically present with nonspecific symptoms like vomiting and abdominal pain; with abdominal mass and intestinal obstruction being less common. There is no literature in the database that describes obstructive jaundice as a sequalae of gastro-gastric intussusception. The majority of hypertrophic polyps are small and asymptomatic, but larger polyps can cause ominous symptoms. Large hypertrophic polyps have

a tendency to prolapse through the pyloric canal, causing intermittent gastric outlet obstruction and, in rarest of rare cases like ours, may also lead to surgical obstructive jaundice and pancreatitis due to extrinsic compression of the retro duodenal portion of the common bile duct and the ampulla of Vater.

In our case study, a thirty-eight-year-old gentleman presented with vague epigastric pain associated with persistent nausea and multiple episodes of non-bilious vomiting, associated with loss of 7 kg weight and profound loss of appetite for 1 month. His symptoms worsened over last 10 days with an inability to tolerate even clear liquids orally.

With a provisional diagnosis of gastric outlet obstruction, he was evaluated and found to have large polypoidal mass lesions along the entire length of greater curvature of stomach. During the course of hospitalization, he developed jaundice and MRI abdomen was suggestive of a gastro-gastric intussusception with impingement of lower end of the common bile duct leading to impediment of flow of bile.

The laparotomy revealed gastro-gastric intussusception due to the prolapsed polyp to be the cause of obstructive jaundice and outlet obstruction. The wide local excision of the polypoidal mass was done after reducing the intussusception. The post-operative period was uneventful and resolution of jaundice was noted 2 days after the surgery without the need for biliary intervention ln the form of ERCP and stenting.

CONCLUSION

In adults, gastro-gastric intussusceptions are exceedingly uncommon and to the best of our knowledge gastro-gastric intussusception leading to surgical obstructive jaundice has not been reported in literature so far. Gastro gastric intussusception in adults mostly however not exclusively have a benign or a malignant polyp as its etiology and is a surgical emergency which requires an urgent laparotomy. Few of the cases can be managed with surgical reduction and gastropexy, however extensive cases may require a formal wide local excision or in rare cases a subtotal or total gastrectomy.

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REFERENCES

1. Grosfeld JL. Intussusception then and now: a historical vignette. J Am Coll Surg. 2005;201:830-3.
2. Aref H, Nawawi A, Altaf A, Aljiffry M. Transient small bowel intussusception in an adult: case report with intraoperative video and literature review. BMC Surg. 2015;15:36.
3. Lianos G, Xeropotamos N, Bali C, Baltoggiannis G, Ignatiadou E. Adult bowel intussusception: presentation, location, etiology, diagnosis and treatment. G Chir. 2013;34:280-3.
4. Yalamarthi S, Smith RC. Adult intussusception: case reports and review of literature. Postgrad Med J. 2005;81:174-7.
5. Lu T, Chng YM. Adult intussusception. Perm J. 2015;19:79-81.
6. Jennette JC, Falk RJ, Andrassy K, Bacon PA, Churg J, Gross WL, et al. Nomenclature of systemic vasculitides. Proposal of an international consensus conference. Arthritis Rheum. 1994;37(2):187-92.
7. Niles JL, Böttinger EP, Saurina GR, Kelly KJ, Pan G, Collins AB, et al. The syndrome of lung hemorrhage and nephritis is usually an ANCA-associated condition. Arch Intern Med. 1996;156(4):440-5.
8. Kallenberg CG, Brouwer E, Weening JJ, Tervaert JW. Anti-neutrophil cytoplasmic antibodies: current diagnostic and pathophysiological potential. Kidney Int. 1994;46:1-15.
9. Behrooz A, Cleasby M. Gastrogastric intussusception in adults: a case report with review of the literature. BJR Case Rep. 2018;4(4):20180006.
10. Caruso G, Caramma S, Zappalà A, Zerbo D, Evola G, Reina C, et al. Acute intrathoracic gastric volvulus with retrograde gastric intussusception: A case report of a rare surgical emergency with review of the literature. Int J Surg Case Rep. 2020;72:381-5.
11. Takano S, Suzuki A, Masuya Y, Suzuki H, Ohtsuka M. Epigastric discomfort in a 91-year-old woman. Frontline Gastroenterol. 2020;12(6):537-8.
12. Kersebaum JN, Schafmayer C, Ahrens M, Laudes M, Becker T, Beckmann JH. Duodenal intussusception of the remnant stomach after biliopancreatic diversion: a case report. BMC Surg. 2018;18:57.
13. Ssentongo P, Egan M, Arkorful TE, Dorvlo T, Scott O, Oh JS, et al. Adult Intussusception due to Gastrointestinal Stromal Tumor: A Rare Case Report, Comprehensive Literature Review, and Diagnostic Challenges in Low-Resource Countries. Case Rep Surg. 2018;1395230.

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