

in continuity, surgical resection was avoided and intestinal length was preserved. There are only two cases in the literature where a similar procedure was performed for angiodysplasia of the colon and small bowel with good results.^{6,7} In our case the patient is doing well six months after the surgery with no further episodes of malena. The good outcome in our case warrants further evaluation of this novel technique in management of similar cases.

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Adult post-operative jejunojejunal intussusception following Ivor-Lewis esophagectomy

Introduction

Intussusception which is a common entity in pediatric age group is a rare condition among adults and accounts for only about

5% of all cases of intussusceptions. In adults about 90% of cases have a definitive etiology like tumor, post-operative conditions, etc.¹ We report a case of antegrade jejunojejunal intussusception in a 29 year old female who had undergone Ivor-Lewis esophagectomy.

Case report

A 29-year-old female patient underwent an uneventful Ivor-Lewis esophagectomy with feeding jejunostomy. Feeding tube was removed on the fourteenth day and the patient discharged on a normal diet. Forty five days later she presented with history of sudden onset colicky upper abdominal pain and vomiting of one day duration. Clinical examination was unremarkable. The patient's symptoms resolved following a day of non-surgical management consisting of nil orally and intravenous fluids. She was started on a fluid diet on the second day of admission. Since she tolerated that well, semi-solid diet was encouraged from the third day onwards. She passed normal stools on that day. On the fourth day she again complained of severe colicky pain in the left side of the abdomen without vomiting. Clinical examination revealed left lumbar region tenderness without mass or peritonism. A nasogastric tube was inserted. X-ray abdomen revealed dilated jejunal loops, absence of significant air-fluid levels and no pneumoperitoneum. Ultrasound abdomen showed target-like lesion suggesting jejunojejunal intussusception measuring fifteen centimeters long. At emergency laparotomy, there were extensive post-operative adhesions in the upper abdomen, which were released and we confirmed the presence of an antegrade jejunojejunal

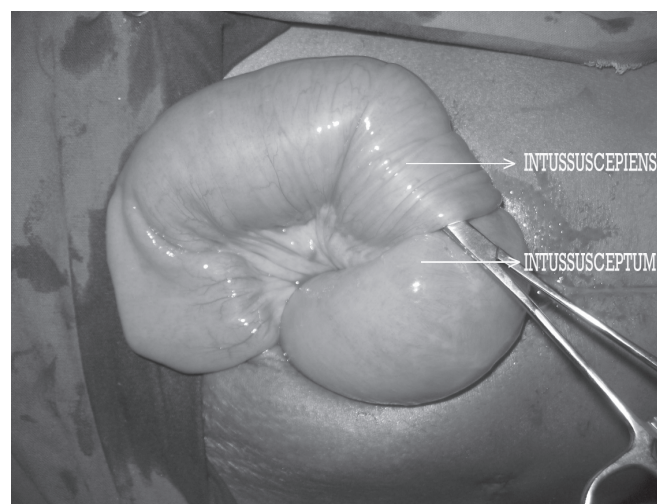


Figure 1: Antegrade jejunojejunal intussusceptions. Intraoperative photograph showing the antegrade jejunojejunal intussusception with arrows indicating intussusceptum and intussuscepiens, just prior to its reduction

intussusception 40 cm away from the duodenojejunal flexure and 20 cm away from the feeding jejunostomy site (**Figure 1**). Intussusception was reduced by gently milking out the invaginated segment of jejunum. While the proximal portion of the invaginated jejunum (intussusceptum) could be reduced easily, sharp division of adhesions between the terminal segment of the intussusceptum and the intussusciens was required to completely reduce the intussusception. Presumably, these adhesions acted as a lead point and initiated the process of intussusception in this patient. Her recovery was uneventful and she was discharged on the seventh post-operative day on a normal diet.

Discussion

Intussusception, the telescoping of a segment of bowel loop into another is one of the leading causes of intestinal obstruction in children. But it is rare in adults, accounting for <1% of all cases of small bowel obstruction and 5% of all cases of intussusceptions.¹ Agha et al² categorized intussusception into four groups namely, a) tumor-related, b) post-operative, c) miscellaneous, and d) idiopathic.²

Post-operative intussusception is very rare in adults and recognized as a distinct entity. Its etiology may be idiopathic or secondary to various predisposing factors like suture lines, adhesions, submucosal bowel edema, intestinal dysmotility, long intestinal tubes and chronic dilatation of bowel.² Idiopathic post-operative intussusception is extremely rare, may occur without lead points and most frequently follows Billroth II partial gastrectomy with gastrojejunostomy and intussusception of the excluded segment after jejunioileal bypass for morbid obesity.^{2,3} It has also been reported less frequently after Roux-en-Y gastrojejunostomy,⁴ truncal vagotomy,⁵ pancreaticoduodenectomy,⁶ abdominal trauma surgery,⁷ gynecological surgery,⁸ jejunostomy,⁹ appendectomy.¹⁰

Antegrade jejuniojejunal intussusception after Ivor-Lewis esophagectomy is a very rare post-esophagectomy gastrointestinal complication and has not been reported even in large series of patients who underwent esophagectomy.¹¹⁻¹³

Reymond postulated two mechanisms for intussusception. First, it may propagate from a functionally non-contractile inhomogeneous part of the intestinal wall, recognized as an indurated area or a region of diameter change in the bowel forming a flaccid motile interface or secondly, any mechanical linkage of two nonadjacent bowel segment with either an

intraluminal (polyp) or extraluminal (postoperative adhesion) leadpoint.¹⁴ Feeding jejunostomy as a cause for jejuniojejunal intussusception following esophagectomy has been reported.¹⁵ In our patient, though we expected the feeding jejunostomy site to be the leadpoint pre-operatively, we were surprised to find intra-operatively that the intussusception was 20 cm away from the feeding jejunostomy site. Post-operative adhesions probably served as an extraluminal factor, as in Reymond's theory and acted as a pathological leadpoint for the antegrade jejuniojejunal intussusception.

The classical clinical triad of intussusception namely pain abdomen, palpable sausage shaped mass and red currant jelly stools, is rare in adults. While adult and pediatric post-operative intussusception shares the same clinical presentation such as pain abdomen, nausea and vomiting,¹⁶ the presentation in adults tend to be chronic or intermittent like change in bowel movements, rectal bleeding, crampy abdominal pain, distended abdomen, nausea and vomiting. Idiopathic post-operative intussusception in adults occurs in the age between 45 to 50 years and is common on the 4th or 5th post-operative day with jejuniojejunal intussusception being the most common type,⁴ whereas post-operative intussusception following various predisposing factors such as suture line adhesions etc. presents late after abdominal surgery.

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Role of upper gastrointestinal endoscopy in the treatment of sump syndrome

Introduction

Biliary “sump syndrome” is an infrequent complication of side-to-side choledochoduodenostomy (CDD) performed for achieving permanent drainage of common bile duct (CBD). It is associated with recurrent stone formation in about 40% due to

the stenosis of CDD and failure of the dilated CBD to decompress after CDD. Endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic sphincterotomy (ES) is regarded as the treatment of choice for sump syndrome but has a restenosis rate as high as 19%, necessitating repeat papillotomy. We report a case of sump syndrome successfully managed by dilatation of the stenosed CDD using an upper GI endoscope.

Case report

Biliary “sump syndrome” is an infrequent complication of side-to-side choledochoduodenostomy (CDD) performed for achieving permanent drainage of common bile duct (CBD).¹

It is associated with recurrent stone formation in about 40% due to the stenosis of CDD and failure of the dilated CBD to decompress after CDD.^{2,3} Endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic sphincterotomy (ES) is regarded as the treatment of choice for sump syndrome but has a restenosis rate as high as 19%, necessitating repeat papillotomy.^{4,5}

A 60-year-old man presented with a history of recurrent cholangitis. He underwent cholecystectomy and side-to-side CDD 10 years back and an ERCP three years back for retained CBD stone due to sump syndrome. Ultrasound abdomen revealed a massively dilated CBD with multiple CBD stones and a repeat ERCP was planned. Side viewing scopy failed to show the ampulla but the opening of a partially blocked CDD was seen. The cholangiogram through CDD confirmed the presence of multiple large stones (**Figure 1**). The opening of CDD was dilated by putting a CRE balloon (microvasive-TTS balloon, 15-18 mm diameter, 240 cm length) through an UGI endoscope. After dilatation of CDD the UGI endoscope was negotiated into the biliary tree for removal of stones under vision (**Figure 2**). The larger fragments were removed by basket and smaller fragments of stones lying in dependent part of the

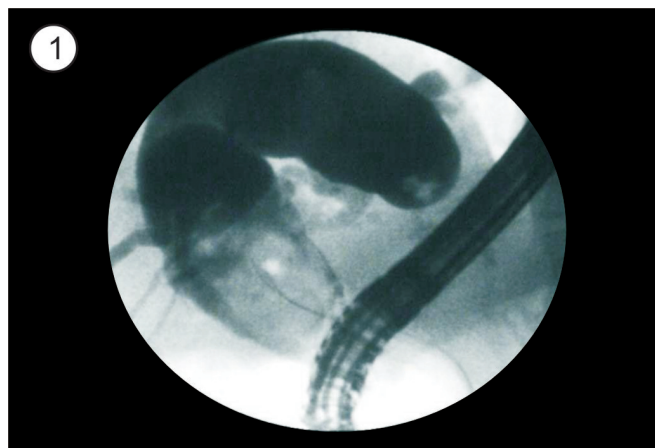


Figure 1: Cholangiogram showing very large stone In CBD