
CASE REPORT

Retrograde Jejunio-jejunal Intussusception from Small Bowel Metastases

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ABSTRACT

Retrograde intussusception is extremely uncommon, usually occurring as a complication of gastric surgery and long intestinal tube. We report a case of retrograde jejunio-jejunal intussusception with a lead point due to a pulmonary metastatic deposit.

Key Words: Intussusception, Retrograde

CLINICAL HISTORY

A 31-year-old male, with known history of lung carcinoma (adenocarcinoma with focal squamous differentiation) and right pneumonectomy performed 4 months previously, presented with epigastric pain and vomiting. Physical examination revealed a soft but distended abdomen and tarry stool on rectal examination. Blood biochemistry was normal apart from a hypochromic microcytic anaemia.

The abdominal radiograph showed dilated proximal jejunum with normal large bowel suggestive of a proximal small bowel obstruction. This was confirmed on subsequent barium follow through studies. The duodenal loop and proximal jejunal loops were markedly dilated. There was complete obstruction at the proximal jejunum with a sausage-like filling defect (Figure 1). The presence of the 'reverse claw sign' was highly suggestive of retrograde intussusception (Figure 2). A complementary sonogram targeted to the left lower quadrant showed a sausage-shaped soft tissue mass with a target appearance (transverse section) and a 'pseudokidney' configuration (longitudinal section) confirming the diagnosis of intussusception. In addition,

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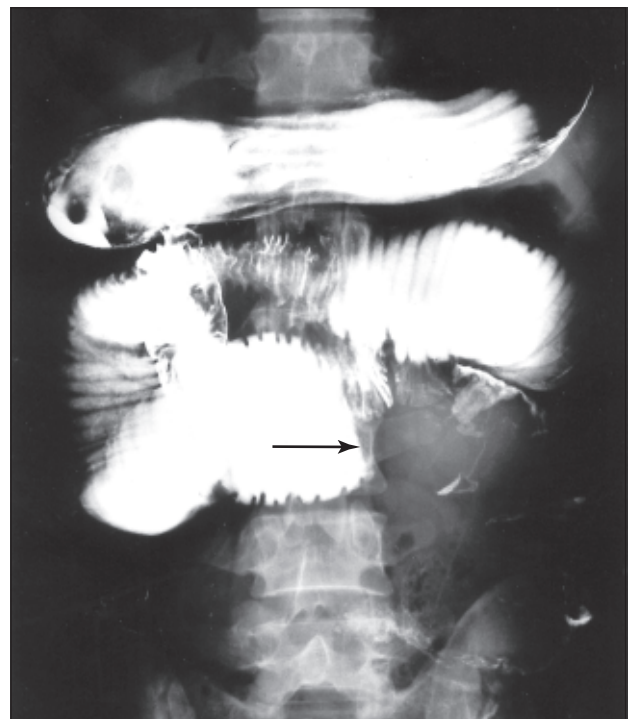


Figure 1. Barium follow-through studies showed dilated proximal jejunum with a sausage-like filling defect (arrow).

a 3 cm hypoechoic nodule was identified suggesting the lead lesion of the intussusception (Figure 3).

At laparotomy, an unusual retrograde jejunio-jejunal intussusception with an enlarged mesenteric lymph node was found (Figure 4). The retrograde intussusception was easily reduced. The segment of small bowel containing the palpable submucosal nodule was

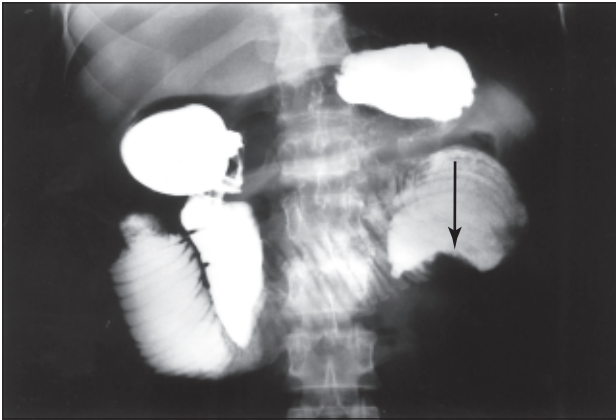


Figure 2. Reverse claw sign (arrow) and dilated proximal duodeno-jejunum evident on barium follow-through studies.

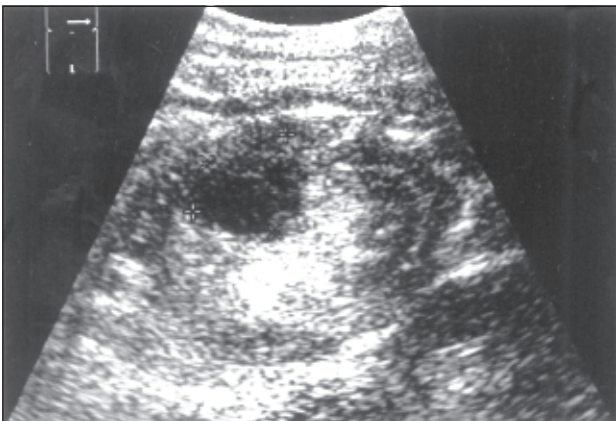


Figure 3. A well-defined 3 cm hypoechoic nodule is seen within the intussusciens. The echogenic mesentery of the intussusceptum is also seen next to the polyp.

resected en bloc with the mesenteric node. When the resected segment was sliced open, a phytobezoar (intact Chinese mushroom) proximal to the polyp was found. This presumably acted as the lead point for the intussusception.

Immunohistochemical stains of the submucosal polyp and mesenteric lymph node confirmed metastatic lung adenocarcinoma. The patient remained well but developed brain and bone metastases 4 months after small bowel resection.

DISCUSSION

Metastatic tumours to the gastrointestinal tract are rare, with an overall prevalence of 1% to 4% in post-mortem series. Lung carcinoma, renal cell carcinoma, breast carcinoma, and malignant melanoma are the most common blood borne metastases to the intestinal organs as a whole.¹ Small bowel metastases from lung carcinoma are relatively rare, the jejunum being the commonest site of involvement (79%).²

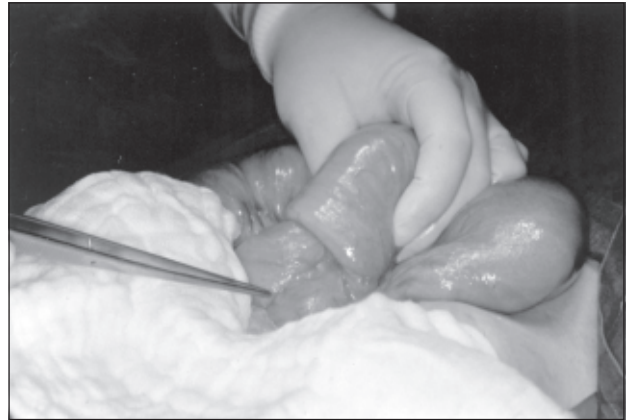


Figure 4. The dilated proximal jejunum is held by the surgeon's hand, with retrograde intussusception of the more distal part evident. The forceps point to the enlarged mesenteric lymph node.

Gastrointestinal intussusception in adults is uncommon and when it does occur, is generally antegrade, with a demonstrable cause in 90% of patients. Common leading lesions identified in adults include Meckel's diverticulum, Peyer's patches, lymphoma, metastases, and enlarged mesenteric nodes. Retrograde intussusception is extremely rare, usually occurring as a complication of gastric surgery and long intestinal tubes. Retrograde jejuno-jejunal intussusception due to a small bowel metastasis has not been reported. Little is known about the imaging features of retrograde intussusception because of the rarity of this condition.

Imaging

The imaging features on barium studies in patients with intussusception depend on several factors — whether it is antegrade or retrograde, whether the contrast is introduced into the intussusceptum or intussusciens, and whether the lumen of the intussusceptum is filled with contrast.³ The reverse claw sign seen in retrograde intussusception represents part of the sheathing portion of the intussusciens filling but not the lumen of the intussusceptum.⁴ The typical coil spring can only be seen when contrast is in the intussusciens and there must be superimposition of the mucosal folds. Otherwise, as in this case, only a central filling defect due to the intussusceptum is seen. To our knowledge, the findings of retrograde jejuno-jejunal intussusception on computed tomography and sonography have not been described. It is not expected that a correct diagnosis would be made using these imaging modalities, especially when the intussusception is imaged on cross section. The 'target sign' cannot reliably distinguish antegrade from retrograde intussusception. The retrograde nature of the intussusception may be suspected when, and if, the intussusception

is imaged longitudinally with a high clinical awareness of this entity.

Unusual Features

The mode of presentation in this patient is unusual in several aspects. The usual histological type of lung tumour causing gastrointestinal tract metastases is either squamous cell (49%) or large cell (22%) tumour. In this case, the histological type was adenocarcinoma. Secondly, small bowel secondaries from lung carcinoma typically present with perforation and peritonitis^{2,5} and less commonly with gastrointestinal haemorrhage and obstruction.⁶ Small bowel metastases presenting with retrograde intussusception is extremely rare. Thirdly, isolated small bowel metastasis as the initial presentation of lung carcinoma recurrence is not typical. Most recurrence is evidenced by widespread disease.

Retrograde Intussusception

Retrograde intussusception is an antiperistaltic telescoping of a more distal bowel lead point into a portion of proximal bowel. Most reported cases of retrograde intussusception are due to complications of long intestinal tubes, gastric surgery, or less commonly in association with inflammatory or neoplastic processes.^{2,7,8} In patients with gastrostomy tubes and complicated retrograde jejuno-oduodenogastric intussusception, the proposed mechanism is due to the active peristalsis against the intraluminal balloon and subsequent migration of the balloon through the pylorus and beyond the ligament of Treitz. In the attempt to withdraw the inflated balloon, retrograde telescoping can result.⁷ The exact pathogenesis of retrograde intussusception in other cases remains unclear, although antiperistalsis is often mentioned as a factor.⁹ Reverse peristalsis may occur in the presence of bowel fixation due to extrinsic inflammatory or neoplastic conditions.³ This may be

the mechanism underlying retrograde intussusception in the current case. The presence of tumour metastasis and surrounding lymphadenopathy may act as a fixation point. The consequent reverse peristalsis in the presence of a relative fixed point results in invaginations of the fixed distal portion of bowel by the proximal bowel.

Management

Surgery is usually undertaken in cases of adult intussusception, antegrade or retrograde, because of the coexistence of surgical pathologies. Recently, endoscopic reduction has also been attempted. Recurrences are likely, however, if the underlying lead point is left untreated.⁹

REFERENCES

1. Telerman A, Gerard B, Van den Heule B, et al. Gastrointestinal metastases from extra-abdominal tumours. *Endoscopy* 1985;17:99-101.
2. Mosier DM, Bloch RS, Cunningham PL, Dorman SA. Small bowel metastases from primary lung carcinoma: a rarity waiting to be found? *Am Surg* 1992;58:677-682.
3. Nunez D Jr, Bjarnason T, Schwartz SS. Barium findings in retrograde intussusception. *Am J Roentgenol Radium Ther Nucl Med* 1975;125:717-722.
4. Radhakrishna K, Das PC, Rao PL. Retrograde intussusception: a lead-point for prograde intussusception. *J Pediatr Surg* 1994;29:1609-1610.
5. Antler AS, Ough Y, Pitchumoni CS, Davidian M, Thelmo W. Gastrointestinal metastases from malignant tumours of the lung. *Cancer* 1982;49:170-172.
6. Yang CC, Meredith JH. Metastatic squamous cell carcinoma from the lung causing small bowel obstruction. *South Med J* 1990;83:1110.
7. Weber A, Nadel S. CT appearance of retrograde jejuno-oduodenogastric intussusception: a rare complication of gastrostomy tubes. *Am J Roentgenol* 1991;156:957-959.
8. Guadagni S, Pistoia MA, Catarci M. Surgical treatment of retrograde jejuno-oduodenogastric intussusception after temporary endoscopic management. *Endoscopy* 1991;23:243-244.
9. Li AK. Endoscopic diagnosis of retrograde jejuno-jejunal intussusception. *Endoscopy* 1996;28:325.