

Adult Postoperative Intussusception Following Transverse Colectomy - A Rare Complication

Jawale Atul *
Murari Arun **
Para Wallyjon ***
Ali Akhtar ****

Senior Lecturer in Surgery, Fiji School Of Medicine, Fiji. Correspondence to: Fiji School of Medicine, Private Mail Bag, Suva, Fiji. Phone: +6799236475 Email: jawaleatul@yahoo.co.in. ** Consultant Surgeon, Lautoka Hospital, Fiji. * Chief Medical Officer in Surgery, Lautoka Hospital, Fiji. **** Registrar in Surgery, Lautoka Hospital, Fiji.*

Abstract:

Postoperative intussusception is a rare cause of intestinal obstruction in adults. We report a case of postoperative jejunojejunal intussusception in a 45-year-old female following a transverse colectomy for a colonic tumour. The patient presented with intermittent bowel obstruction on the fourth day of her operation. A re-laparotomy performed on day twenty one revealed a jejunojejunal intussusception as the cause for the obstruction. This is a rare cause of postoperative small bowel obstruction, and the pathogenesis and diagnosis of postoperative intussusception in the adult is discussed in the case report. (PHD 2011; Vol. 16(2): p82-84).

Key Words: *Intussusception, postoperative, adults, transverse colectomy*

Introduction

Post-operative intussusception in adults is a rare condition with the challenges and difficulties of early diagnosis.¹ It has been reported in the early postoperative period following various operations like pancreaticoduodenectomy, abdominal trauma surgery, gynecologic operations, gastrojejunostomy, jejunostomy, and truncal vagotomy and pyloroplasty.² Presented in this report is a case of an idiopathic jejunojejunal intussusception following colonic resection for a transverse colon tumour treated by jejunal resection and primary anastomosis. No lead point was identified in the specimen and she was diagnosed with an Idiopathic Postoperative Intussusception.

Case Report

A 32 year female was referred to the surgical outpatient with complaints of progressive abdominal discomfort and distension for ten months, associated with poor appetite and weight loss. Three days prior to admission, she

had started vomiting brownish foul smelling fluids. There was no history of constipation, altered bowel habits or rectal bleeding. Initial abdominal examination revealed visible peristalsis with a firm, non-tender and mobile mass in the umbilical region. The abdominal x-rays supported the diagnosis of an intestinal obstruction and she underwent a transverse colectomy with primary end to end colocolic anastomosis. On day four she complained of having intermittent abdominal pain and distension. The symptoms would subside after passing large amount of flatus. She experienced a few episodes of per rectal bleeding. In between these episodes of bowel obstruction the patient was stable and regained her appetite. The clinical features suggested intermittent small bowel obstruction but the X-rays and ultrasound examination findings were inconclusive.

A re-laparotomy was performed 21 days after the initial surgery. The previous colocolic anastomosis was intact. There was

a jejunojejunal intussusception involving 200 cms of jejunum with gangrene of the intussusciens. A resection and an end to end anastomosis was done.

The patient recovered well after the second surgery and was discharged home 12 days later. A six month follow-up shows her to be asymptomatic and gaining weight.

Discussion

Intussusception is defined as a telescoping of one part of intestine into another adjacent part of the intestine. Idiopathic postoperative intussusception in the adult is rare but distinctly recognized condition.² It typically occurs in adults 45 to 51 years old, develops 4 to 5 days postoperatively, and is most commonly jejunojejunal.³

The causative mechanisms underlying the development of idiopathic intussusception are not well understood.

A change in the peristaltic patterns of the bowel is said to trigger the formation of intussusception.⁴ Organizing intra-luminal blood can act as a postoperative lead point. Reymond et al⁵ have put forward two specific focal abnormalities which may act as causative factors for postoperative intussusception: first, it may start from a functionally non-contractile heterogeneous part of the intestinal wall; second, if there are any adhesions between two nonadjacent bowel loops, postoperatively, these could act as the extra luminal lead point. This may lead to kinking of the bowel and with continued normal peristalsis/hyper peristalsis, would provide sufficient torque to induce an intussusception.

The uneven return of peristalsis after surgery, with possible local spasms or bowel edema, is a plausible explanation in cases without obvious lead points.⁶ Ein et al⁷ suggested that postoperative intussusceptions are likely to be caused by altered peristalsis following

prolonged and excessive manipulation with drying and bruising of the bowel, extensive pre-peritoneal dissection, abnormal serum electrolyte levels and several other factors.

On the other hand other postoperative intussusceptions may occur around suture lines, insertion points of long intestinal tubes, and ostomy closure sites. These of have been reported and there is no specific need to consider either early postoperative electrolyte imbalance or various anomalies of postoperative intestinal motility.² There is one case report of a postoperative adult intussusception following a truncal vagotomy² suggesting that the vagotomy itself could possibly cause a postoperative motility disorder.

The classical clinical features of conventional paediatric intussusception comprising of abdominal pain, palpable sausage shaped mass, and currant-jelly stools is rarely present in the adult postoperative patient. Thus the diagnosis is difficult and a high degree of suspicion would be necessary to diagnose the condition. The clinical presentation in postoperative adult intussusception is often chronic, and patients develop symptoms that are suggestive of intestinal obstruction. Abdominal pain, often attributed to the surgical wound, is the most common symptom followed by vomiting and nausea.⁸

Since obstructive symptoms are dominant in most cases, initial imaging usually involves plain abdominal films, which generally show findings consistent with ileus and may provide information regarding the site of obstruction.⁹

The diagnosis of postoperative intussusception is commonly made by ultrasonography.¹⁰ The classic features include the “target sign and doughnut sign”{eccentrically-placed central soft-tissue density (the intussusceptum) within a concentric fat density (the intussuscepted edematous mesentery)} on transverse view and the “pseudokidney

sign" (reniform bilobed masses) in longitudinal view.¹⁰ The major disadvantage of ultrasound is masking by gas-filled loops of bowel, and operator dependency.¹¹

The characteristics of intussusception in adults on CT are an early "target mass" with enveloped, eccentrically located areas of low density. Later, a layering effect occurs as a result of longitudinal compression and venous congestion in the intussusceptum.²

Abdominal CT has been reported to be the most useful imaging technique for diagnosis of intestinal intussusception with the diagnostic accuracy of around 58-100%.¹¹

The surgical treatment of idiopathic adult post operative intussusception depends upon the viability of the intussuscepted bowel and it is clearly safe to manually reduce the intussusception if the bowel is viable.² However Furaya et al⁶ reported a case of recurrence of post operative intussusception after a successful manual operative reduction. If the bowel is non-viable or if the viability is a concern then a resection and anastomosis is performed.

Conclusion

Post operative intussusception is a rare occurrence and is difficult to diagnose clinically. Adhesions and kinks following excessive gut manipulation could act as lead points and care should be taken to minimize bowel manipulation. Intussusception as a cause of intestinal obstruction should be kept in mind in a post operative patient who develops obstructive symptoms. A high degree of suspicion and early diagnosis would prevent the complication of gangrene of the intussusceptum. Ultrasound scan and CT if available are good diagnostic tools for this condition and should be used if clinically indicated.

References

- 1 Kjellstrom BT, Gortz L, Nilsson S. Adult idiopathic enteric intussusception in the postoperative period: case report. *Eur J Surg* 1991; 157:359–360.
- 2 Zbar AP, Murphy F, Krishna SM. Adult postoperative intussusception: a rare cause of small bowel obstruction. *South Med J.* 2007;100(10):1042-4.
- 3 Agha FP. Intussusception in adults. *AJR Am J Roentgenol* 1986; 146:527–531.
- 4 Takeuchi K, Tsuzuki Y, Ando T, Sekihara M, Hara T, Kori T, Kuwano H. The diagnosis and treatment of adult intussusception. *J ClinGastroenterol*2003; 36: 18-21
- 5 Reymond RD. The mechanism of intussusception: a theoretical analysis of the phenomenon. *Br J Radiol* 1972; 45:1–7.
- 6 Furaya Y, Wakahara T, Akimoto H, Long C M ,Yanagie H, Yasuhara H. A case of postoperative recurrent intussusception associated with indwelling bowel tube. *World Journal of Gastrointestinal Surgery* 2010; 2(3):85-88.
- 7 Ein SH, Ferguson JM. Intussusception--the forgotten postoperative obstruction. *Arch Dis Child* 1982; 57: 788-790
- 8 Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. *Am J Surg*1997; 173: 88-94
- 9 Eisen LK, Cunningham JD, Aufses AH Jr. Intussusception in adults: institutional review. *J Am CollSurg*1999; 188: 390-395.
10. Beek FJ, Rovekamp MH, Bax NM, et al. Ultrasound findings in postoperative jejunojejunal intussusception. *Pediatr Radiol* 1990;20:601.
11. Yakan S, Caliskan C, Makay O, Denecli AG, Korkut MA. Intussusception in adults: Clinical characteristics, diagnosis and operative strategies. *World J Gastroenterol* 2009; 15(16): 1985-1989