Gastrointestinal Tract

CASE REPORT

Adult intussusception secondary to intestinal tuberculosis: A case report

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ABSTRACT

Adult intussusception is a rare disorder that accounts for only 1% of intestinal obstruction and 3%–5% of all intussusceptions. The classical triad of intussusception includes abdominal pain, bleeding per rectum, and palpable mass. The underlying causes of gut telescoping include gallstone ileus, acute leukemia after consolidation chemotherapy, immunocompromised status, and intestinal tuberculosis. Management involves laparotomy or laparoscopic reduction, along with treatment of the underlying cause. We present the case of a 35-year-old-female who presented with a complaint of absolute constipation for three days. Physical examination revealed tender abdomen with sluggish bowel sounds. Abdominal ultrasound showed ileocolic intussusception as the cause. Consequently, the patient underwent right hemicolectomy with ileostomy. Further workup confirmed intestinal tuberculosis as the causative factor, and antituberculosis therapy (ATT) was initiated. Intestinal tuberculosis can lead to intussusception and should be considered in adult patients presenting with abdominal pain, palpable masses, and bloody stool. Such patients require postoperative anti-tuberculosis therapy to cure the underlying tuberculosis.

Key words: intussusception, intestinal obstruction, gut telescoping, intestinal tuberculosis

INTRODUCTION

Intussusception occurs when a segment of the bowel and the intussusceptum telescope enters the adjacent segment.[1] There are different types of intussusception, including ileocolic, ileoileal, colocolic and jejunojejunal.[2] The most common clinical presentations are abdominal constipation and absolute constipation.[3] History and physical examination are important for the diagnosis of intussusception. Upon examination, a sausage-shaped mass is palpable in the abdomen. Ultrasound is the most reliable imaging modality for the diagnosis of intussusception and prediction of its reducibility.[4] Treatment involves repeated fluoroscopic pneumatic or hydrostatic enema reductions in the pediatric population and surgical intervention (laparotomy or laparoscopic resection) in cases of failure of enema reduction in the adult population.[5]

CASE PRESENTATION

A 35-year-old female with a history of right nephrectomy and cholecystectomy presented with complaints of abdominal pain for one month. This was followed by anorexia, vomiting after food intake, weight loss for 10 days, and constipation for 3 days. On general physical examination, the patient appeared pale. Abdominal examination revealed tense abdomen, generalized tenderness, and sluggish bowel sounds. The results of the remaining physical examination were

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unremarkable. CBC showed 9.8 Hb. Serum electrolytes revealed hypokalemia at 3.7 and was replaced with potassium infusion. ECG showed normal sinus rhythm with no acute ST or T-wave abnormalities. An X-ray of the abdomen in the erect and supine positions revealed dilated bowel loops. Abdominal ultrasonography revealed a classic target sign or the doughnut sign (Figure 1). Surgery was planned and the patient underwent exploratory laparotomy with limited right hemicolectomy and ileostomy. Pathology of the resected bowel segment revealed granulomas with caseating necrosis, Langerhans giant cells, and epithelioid cells, indicating intestinal tuberculosis (Figure 2). The patient remained stable after surgery and was kept under observation for three days. She was discharged on anti-tuberculosis therapy with isoniazid (INH), rifampicin, ethambutol, and pyrazinamide for two months, followed by INH and rifampicin for the next four months.

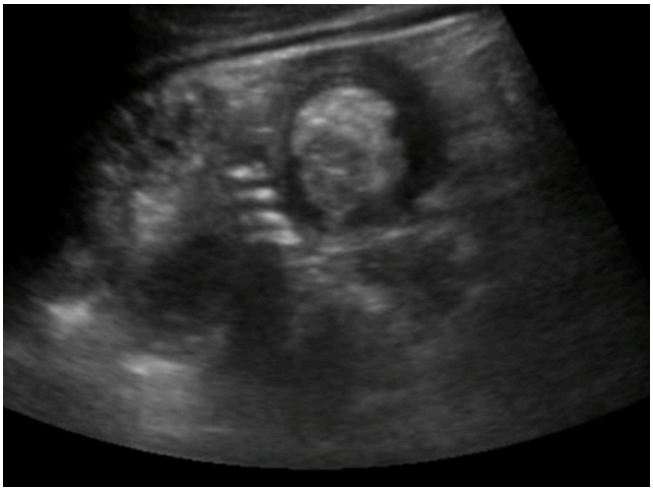

Figure 1. Ultrasound abdomen showing target sign/donut sign in intussusception.

DISCUSSION

Intussusception in adults is rare, representing only 1% of all intestinal obstructions. According to our literature search, only one case of adult intussusception has been reported, in which intussusception developed at the site of ileocolic anastomosis after laparoscopic right hemicolectomy in a 57-year-old female patient. Mechanical intestinal obstruction occurred on 19th day postoperatively and computed tomography revealed intussusception at the site of ileocolic anastomosis.[6] Intussusception in adults is characterized by the presence of a leading intraluminal benign or malignant lesion. Regardless of the patient's age, the clinical presentation consisted of the classical triad of abdominal pain, bleeding per rectum, and palpable mass. The causes of intussusception include gallstone ileus, acute leukemia after consolidation therapy, large polyps, and

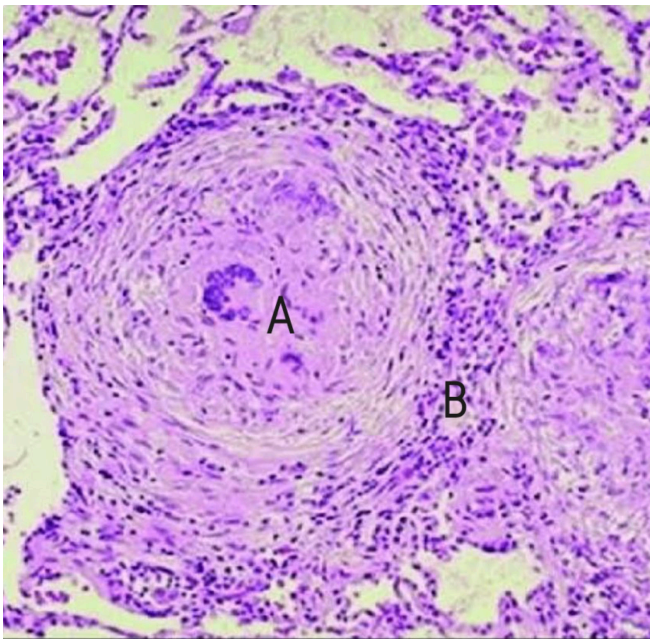

Figure 2. Histopathology showing necrosis and epithelioid cells. **A**. Area of necrosis; **B**. Epithelioid cells.

lymphomas. Oedema and hemorrhagic infiltration of the invaginated loop are the main factors contributing to a bulging mass after right hemicolectomy. The use of antipsychotic drugs can also cause intussusception as these drugs can affect peristalsis. Immunocompromised patients may present multiple intussusceptions.[7–11] One case of jejunal lipoma causing intussusception has also been reported.[12]

Ultrasound can usually diagnose intussusception with 100% accuracy by experienced radiologists, and is ordered as the first imaging modality. Ultrasonography of our patient revealed the typical Target Sign or Doughnut Sign, representing the oedematous external ring of intussuscipiens around a central intussusceptum (Figure 1). Other imaging modalities include abdominal computed tomography and colonoscopy.[13] Furthermore, the management of adult intussusception involves exploratory laparotomy or laparoscopy, followed by resection of the lead-point masses or areas of ischemia. In patients older than 60 years of age, appropriate oncologic principles followed by bowel resection are recommended, given the high incidence of malignancy.[14] Treatment by contrast or air insufflation is the treatment of choice in the paediatric population, but it is not used in adults. The disease should be treated by manual reduction before resection; however, preoperative biopsy should be performed in cases of multiple intussusceptions.[15]

Therefore, it is important to determine the underlying aetiology of intussusception. It is even more important

in the adult population because malignancy is the most common causative factor. Histopathology of the resected bowel segment of our patient revealed granulomas with caseating necrosis, Langerhans giant cells, and epithelioid cells, confirming the diagnosis of intestinal tuberculosis. Intestinal tuberculosis can lead to intussusception and should be treated with anti-TB therapy, similar to pulmonary TB. Our patient was initiated on ATT with isoniazid (INH), rifampicin, ethambutol, and pyrazinamide for two months and followed by INH and rifampicin for the next four months. She is currently undergoing treatment for underlying Tb and recovering well so far from her surgery.

CONCLUSION

Adult ileocolic intussusception can be caused by intestinal tuberculosis. After emergency management of intussusception, intestinal tuberculosis must be ruled out as the underlying cause of intussusception. Abdominal ultrasonography is the most suitable imaging tool for intussusception. Adult intussusception is managed surgically owing to the high incidence of underlying malignancies.

DECLARATIONS

Acknowledgment
None.

Author contributions
Zulfiqar K contributed to study design, data collection and analysis. Shabir S contributed to data collection, literature review and preparation of manuscript. Danishwar M contributed to the study concept and design, study supervision, and critical revision of manuscript. Shahzadi E contributed to critical revision and final approval of manuscript.

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Conflicts of interest
The authors report no conflicts of interest

Data sharing statement
No additional data is available.

Informed consent statement
Written informed consent was obtained from this patient for publication of this case report and accompanying images.

REFERENCES

1. Edwards EA, Pigg N, Courtier J, Zapala MA, MacKenzie JD, Phelps AS. Intussusception: past, present and future. *Pediatr Radiol.* 2017;47:1101-1108.
2. Charles T, Penninga L, Reurings JC, Berry MC. Intussusception in Children: A Clinical Review. *Acta Chir Belg.* 2015;115:327-333.
3. Patsikas MN, Papazoglou LG, Paraskevas GK. Current Views in the Diagnosis and Treatment of Intestinal Intussusception. *Top Companion Anim Med.* 2019;37:100360.
4. González-Carreró Sixto C, Baleato-González S, García Palacios JD, et al. Intestinal intussusception in adults: Location, causes, symptoms, and therapeutic management. *Radiologia (Engl Ed).* 2023;65:213-221.
5. Kelley-Quon LI, Arthur LG, Williams RF, et al. Management of intussusception in children: A systematic review. *J Pediatr Surg.* 2021;56:587-596.
6. Hayama T, Hashiguchi Y, Ohno K, et al. A case of intussusception developed at the site of ileocolic anastomosis after laparoscopic right hemicolectomy. *BMC Surg.* 2019;19:74.
7. Pisano G, Manca A, Farris S, Tatti A, Atzeni J, Calò PG. Adult idiopathic intussusception: a case report and review of the literature. *Chir Ital.* 2009;61:223-229.
8. Wassmer CH, Abbassi Z, Ris F, Berney T. Intussusception in an Immunocompromised Patient: A Case Report and Review of the Literature. *Am J Case Rep.* 2020;21:e919974.
9. Moniakis AA, Flamourakis ME, Gkionis IG, et al. Ileocolic Intussusception in a Woman: A Case Report and Literature Review. *Am J Case Rep.* 2021;22:e933341.
10. Simon MA, Iyer S, Hassan IN, Chhabra S. Unusual presentation of intussusception: Gallstone ileus. *Radiography (Lond).* 2021;27:740-742.
11. Qasrawi A, Abu Ghanimeh M, Abughanimeh O, Qasem A. Intussusception: a rare complication in a patient with acute leukaemia after consolidation chemotherapy. *BMJ Case Rep.* 2017;2017:bcr2016218683.
12. Grbavac M, Bakula B, Romic I, Bogut A, Bakula M. Jejunal lipoma causing intussusception in an adult. *J Coll Physicians Surg Pak.* 2022;32:SS108-SS110.
13. Rispo A, De Sire R, D'Armiento M, et al. Ultrasonographic diagnosis of ileo-ileal intussusception secondary to Vanek's tumor. *Eur Rev Med Pharmacol Sci.* 2022;26:350-353.
14. Lu T, Chng YM. Adult intussusception. *Perm J.* 2015;19:79-81.
15. Wassmer CH, Abbassi Z, Ris F, Berney T. Intussusception in an immunocompromised patient: A case report and review of the literature. *Am J Case Rep.* 2020;21:e919974.