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Case Report

Small bowel submucosal lipoma-induced secondary intussusception: a case report

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ABSTRACT

Intestinal lipomas are uncommon and benign tumors that rarely can lead to intussusception in adults. We present a rare case of ileo-ileal intussusception caused by a small intestinal (ileal) lipoma, resulting in intestinal obstruction. A 51-year-old female patient presented to the emergency department with a complaint of abdominal pain persisting for five days, along with nausea and vomiting. A computed tomography (CT) scan revealed an intraluminal soft tissue lesion with a fatty component located in the distal ileum. Emergency laparoscopic exploration confirmed intussusception in the terminal ileum, which was subsequently resected with a 5 cm safety margin on both sides. The resected ileal segment was anastomosed end-to-end. The patient recovered well, and histopathological examination confirmed the diagnosis of an intraluminal intestinal lipoma. In cases of adult intussusception, consideration should be given to the possibility of a small intestinal intraluminal lipoma. Surgical resection is generally recommended for diagnosis and treatment of symptomatic intestinal lipomas.

Keywords: Intestinal lipoma, Intussusception, Intestinal obstruction, Lipoma, Intestine, Ileum, Adult

INTRODUCTION

Lipomas present a type of benign soft tissue tumors that originate from mature adipocytes and have no malignant potential.[1] They are rare in the gastrointestinal tract (GIT).[2] These are commonly asymptomatic tumors which can be explained by their slow growth. However, lipomas may act as lead points for intussusception. [3]

Intussusception is a common cause of intestinal obstruction in children but it is rare in adults, with an approximate pediatric-to-adult ratio of 16:1, representing <1% of intestinal obstructions in adults.[2,4] We describe a rare case of lipoma-associated ileo-ileal intussusception of an adult patient's small intestine, adjacent to the ileocecal junction, and treated successfully with surgical resection.

CASE REPORT

A 51-year-old female with a known history of diabetes mellitus, hypertension, and bronchial asthma presented to the emergency department with a complaint of abdominal pain for 5 days with associated nausea and vomiting. She denied hematochezia, melena, or hematemesis. On examination, the patient was conscious, oriented, and vitally afebrile with a heart rate of 88 beats/min, blood pressure of 130/89 mmHg, and temperature of 36.6ºC. The abdomen was soft, lax, and had mild tenderness. Rectal examination was unremarkable. Laboratory evaluation revealed leukocytosis (13,000 cells/µl) and a

hemoglobin level of 12.3 g/dl. CT with intravenous and oral contrast showed a pedunculated intraluminal soft tissue lesion with a fat component at the distal ileum measuring 3.4×1.8×3.6 cm and wall thickening starting from the lesion until the ileocecal junction (Figure 1 and 2).

Figure 1: Axial computed tomography scan of ileum with intravenous and oral contrast demonstrating the presence of pedunculated intraluminal soft tissue lesion with a fat component at the distal ileum and intestinal wall thickening.

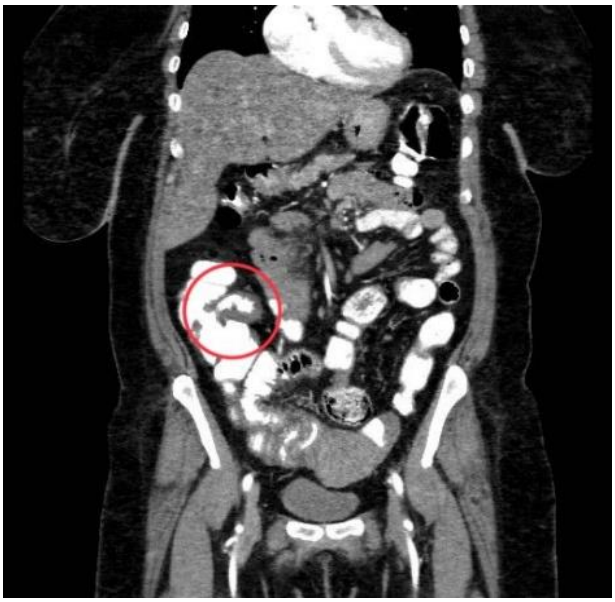

Figure 2: Coronal computed tomography scan of ileum with intravenous and oral contrast demonstrating the presence of pedunculated intraluminal soft tissue lesion with a fat component at the distal ileum and intestinal wall thickening.

The patient underwent emergency laparoscopic exploration for ileo-ileal intussusception in the terminal ileum. A reduction was performed. Intraluminal mass was identified approximately 10 cm proximally from the ileocecal valve and resection of the mass with a 5 cm safety margin proximally and distally, and side-to-side anastomosis (ileal to ileal) was performed (Figure 3). The patient recovered well and was discharged on postoperative day 5 in good condition. Histopathological examination confirmed the diagnosis of submucosal intestinal lipoma with an area of fat necrosis.

Figure 3: Resected specimen of the intraluminal mass with 5 cm safety margins proximally and distally.

DISCUSSION

Intussusception is a process of telescoping one segment of the GIT "the intussusceptum" into an adjacent segment "intussuscipiens", representing less than 1% of intestinal obstructions in adults. As opposed to intussusception in children, which is a more common condition and predominantly idiopathic in origin, idiopathic cases are uncommon in adults. The majority (90%) are secondary intussusceptions initiated by pathological lead points often due to different organic lesions, such as Meckel's diverticulum, postoperative adhesions, benign and malignant lesions, etc.[5,6] GIT lipomas represent only 2.6% of benign tumors of the GIT.[7] Lipomas are more frequent in the large intestine, and only 20-25% are found in the small intestine. There are three pathological types of intestinal lipomas: (i) intermuscular, (ii) subserosal, and (iii) submucosal. Tumors arise from the submucosa in 90% of cases.[8] Submucosal lipomas are usually presented as polypoid lesions, either sessile or pedunculated.[9] Lipomas of the small intestine are most likely to develop during the sixth to seventh decades of life.[10] These tumors grow slowly, with a silent clinical course, and are usually found incidentally.[11] Less than 50% of adults with intestinal lipomas develop clinical symptoms with usual symptoms such as hemorrhage, obstruction, or intussusception.[4]

Preoperative ultrasound and CT scans are beneficial imaging modalities for diagnosing intussusception and determining the nature of intraluminal lesions.[12] Abdominal ultrasound can display the pseudo-kidney sign in the longitudinal view and the target signs in the

transverse view to support the diagnosis of intussusception.[6] This technique is generally applicable in emergencies. On CT scans, lipomas appear as well-circumscribed, round, homogeneous masses with fat attenuation numbers (-40 to -120 HU) within the lumen of the intussusceptions.[13,14] The treatment of lipomas depends on the symptoms. Radiological decompression may not be recommended due to the risk of malignancy, and surgical resection can be considered the treatment of choice for symptomatic GIT lipomas.[11,15] Partial small bowel resection can be performed either via laparotomy or laparoscopy. Oncological principles should be maintained during resection unless preoperative imaging shows a benign etiology.[16]

Few similar cases of ileo-ileal intussusception, with lipoma as a lead point, were reported in literature among adult patients. Singhal et al reported a case of a 55-year-old male who had severe abdominal pain, distension, vomiting, and obstipation. He had experienced several episodes of similar symptoms previously. The symptoms and the presence of an empty, ballooning rectum were suggestive of acute obstruction with impending strangulation. The emergency laparotomy revealed lipoma-induced intussusception 40 cm away from the ileocecal valve. After a limited resection and ileostomy, as an emergency solution, the patient recovered well.[17] Uyulmaz et al reported a case of a 52-year-old obese female with non-specific abdominal pain, accompanied by intermittent diarrhea. The symptoms existed for 3 months and resulted in weight loss due to the fear of pain. The addition of nausea and vomiting was noted before presenting to the physician. The CT scan revealed a lipoma-induced ileo-ileal intussusception. Laparotomy, desinvagination, non-oncological resection, and end-to-end anastomosis of the bowel resulted in good recovery.[18] The third patient by Sueoka et al was a 68-year-old woman with sudden colic in the abdomen, vomiting, distended and tender abdomen, and slight elevation of laboratory inflammatory markers. The CT scan was suggestive of ileo-ileal intussusception due to lipoma. Interestingly, intussusception had been reduced spontaneously by the time of emergency laparotomy. The bowel with the tumor was resected with end-to-end anastomosis and uneventful recovery.[19]

Our patient had similar non-specific symptoms as the abovementioned cases. While some patients had repeating episodes of the pain and other symptoms, in others (like our patient) the symptoms were acute. CT scan was the predominant way of diagnosing intussusception. Surgery was the treatment of choice considering the condition, not without exceptions, would not resolve spontaneously, and the concerns of malignancy. In our patient, resection of the intestine and the tumor with a 5 cm safety margin on each side was performed because we did not exclude malignancy. Treatment is usually definitive because lesions do not often recur.

CONCLUSION

This case report highlights the rare occurrence of small bowel submucosal lipoma-induced secondary intussusception in an adult female patient. Intestinal lipomas, although typically benign and asymptomatic, can act as lead points for intussusception, leading to intestinal obstruction. Surgical resection is generally recommended for symptomatic intestinal lipomas, as it provides both diagnosis and treatment. It is important for clinicians to consider the possibility of small intestinal intraluminal lipomas in cases of intussusception in adults. Imaging modalities such as CT scans can aid in the diagnosis of intussusception and help determine the nature of intraluminal lesions. Prompt surgical intervention should be considered for symptomatic patients, taking into account oncological principles.

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REFERENCES

1. Myhre-Jensen O. A consecutive 7-year series of 1331 benign soft tissue tumours: clinicopathologic data. Comparison with sarcomas. Acta Orthop Scand. 1981;52(3):287-93.
2. Draus JM, Shelgikar CS, Buchino JJ, Bond SJ. Lipoma as a pathological lead point in a child with ileocolic intussusception. J Pediatr Gastroenterol Nutrit. 2008;47:372-4.
3. Cheikhrouhou T, Dhaw BD, Zouari M, Zitouni H, Kallel R, Gouiaa N, et al. Small intestinal submucosal lipoma: a rare cause of secondary intussusception in a child. Ann Pediatr Surg. 2021;17:47.
4. Triantopoulou C, Vassilaki A, Filippou D, Velonakis S, Dervenis C, Koulentianos E. Adult ileocolic intussusception secondary to a submucosal cecal lipoma. Abdom Imaging. 2004;29:426-8.
5. Marinis A, Yiallourou A, Samanides L, Dafnios N, Anastasopoulos G, Vassiliou I, et al. Intussusception of the bowel in adults: A review. World J Gastroenterol. 2009;15:407-11.
6. Yakan S, Caliskan C, Makay O, Denecli AG, Korkut MA. Intussusception in adults: Clinical characteristics, diagnosis and operative strategies. World J Gastroenterol. 2009;15:1985-9.
7. Abdelmohsen SM, Osman MA, Hussien MT. An ileo-ileal intussusception secondary to polypoid lipoma in a child, a case report and review of the literature. Int J Surg Case Rep. 2019;57:88-90.
8. Charalambous G, Katergiannakis V, Manouras A. Jejunojejunal lipoma causing intussusception. Case Rep Gastroenterol. 2012;6:684-8.
9. Janevski V, Dukova B, Spasevska L, Janevska V. Intestinal submucosal lipomas. Macedonian J Med Sci. 2012;5:49-54.

10. Fang SH. Small intestinal lipomas: Diagnostic value of multi-slice CT enterography. World J Gastroenterol. 2010;16:2677.
11. Taylor AJ, Stewart ET, Dodds WJ. Gastrointestinal lipomas: a radiologic and pathologic review. Am J Roentgenol. 1990;155:1205-10.
12. Tan HL, Koh YX, Taufik M, Lye WK, Goh BKP, Ong HS. A clinical scoring system to predict the clinical sequelae of computed tomography diagnosed intussusception. World J Surg. 2018;42:682-7.
13. Baron Y, Priesack W, Sötje G, Brix F, Scheunemann C. Hemorrhagic jejunal lipoma with intermittent intussusception. Euro J Radiol. 1996;22:123-5.
14. Thompson WM. Imaging and findings of lipomas of the gastrointestinal tract. Am J Roentgenol. 2005;184:1163-71.
15. Azar T, Berger DL. Adult intussusception. Ann Surg. 1997;226:134-8.
16. Oyen TL, Wolthuis AM, Tollens T, Aelvoet C, Vanrijkel JP. Ileo-ileal intussusception secondary to a lipoma: a literature review. Acta Chir Belg. 2016;107:60-3.
17. Singhal S, Singhal A, Arora PK, Tugnait R, and Tiwari B, Malik P, et al. Adult ileo-ileo-caecal intussusception: case report and literature review. Case Rep Surg. 2012;2012:789378.
18. Uyulmaz S, Zünd M, Caspar U, Diebold J, Slankamenac K. Ileoileal intussusception in unspecific recurrent abdominal pain in adult: A case report. SAGE Open Med Case Rep. 2018;6:2050313X18792814.
19. Sueoka S, Itamoto T, Oishi K, Ishimoto T. A Case of Spontaneously Reduced Ileoileal Intussusception Caused by a Lipoma. Hiroshima J Med Sci. 2016;65(3-4):65-8.

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