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Case Report

Surgery Section

Intestinal Lipoma Causing an Ileo-ileal Intussusception

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ABSTRACT

Adult intussusception is a rare condition and can be secondary to an intestinal lipoma. In this case report, a 41-year-old woman presented with an acute abdominal pain and a tender central abdominal mass. Abdominal computed tomography scan showed an ileo-ileal intussusception with a fat-density mass at the leading point. Laparotomy with reduction of the intussusception, bowel resection and anastomosis was performed. Histological examination revealed a benign submucosal lipoma.

Early laparotomy with resection and without deintussusception is usually recommended. In this case, a careful reduction allowed to preserve the non necrotic intestinal segment involved in the intussusception.

Keywords: Abdominal pain, Intestinal resection, Surgery

CASE REPORT

A 41-year-old woman presented with an acute central abdominal pain associated with vomiting, 24 hours prior to admission. She had no fever, no blood in stools nor changes in bowel habits. No previous similar episode was reported.

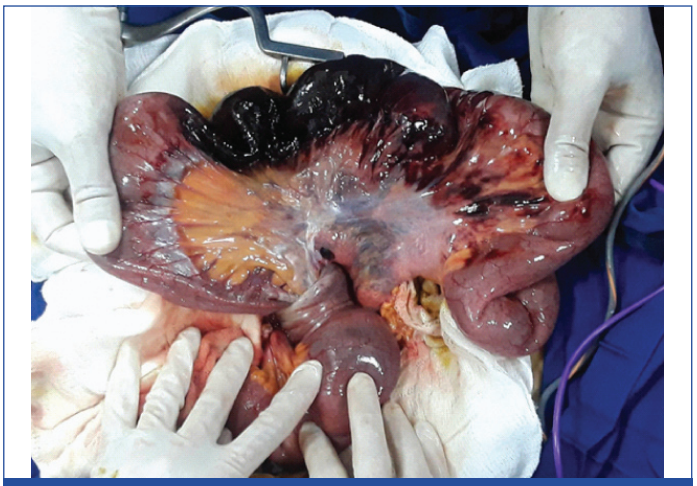
Abdominal examination revealed a central tender sausage-shaped mass with no other significant physical findings. Blood tests were normal, except white blood cell count of 13500/mL. Abdominal CT scan showed a segment of ileo-ileal intussusception. Moreover, a rounded well-limited low-density lesion was identified as the lead point causing the intussusception [Table/Fig-1,2]. There were no signs of obstruction and no other lesions were found.

[Table/Fig-1]: Abdominal computed tomography scan showing a rounded fatty mass in the small intestine.

[Table/Fig-2]: Abdominal computed tomography scan. Coronal view showing the "sausage" shape of the intussusception.

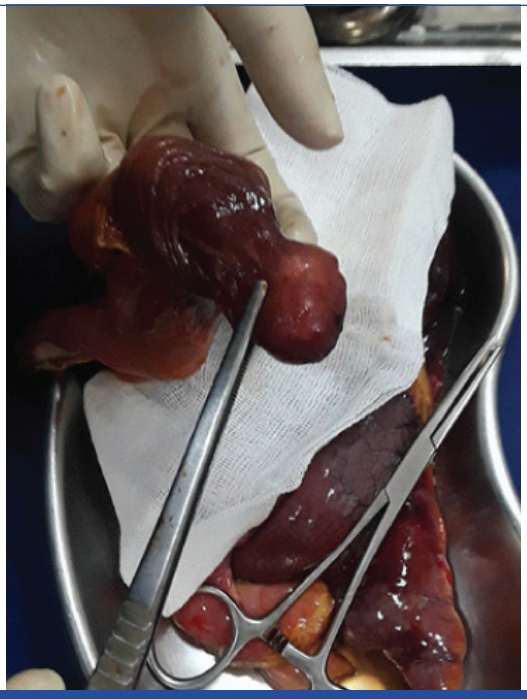
The patient was diagnosed preoperatively as having an ileo-ileal intussusception caused by a lipoma in the small intestine, relying on the CT scan findings that showed the low density lesion with lipid attenuation. Laparotomy confirmed the presence of enteroenteric intussusception involving the proximal Ileum [Table/Fig-3]. A manual reduction was gently performed. The length of the intussuscepted ileal segment was 120 cm in which 50 cm were necrotic [Table/Fig-4]. The leading point was a palpable endoluminal rounded mass which was

[Table/Fig-3]: Intraoperative findings: Ileoileal intussusception with signs of ischemia.



[Table/Fig-4]: Intraoperative findings: After partial reduction. Intussuscepted segment with both necrotic and viable bowel.

resected with the necrotic bowel, 70 cm in total. Primary anastomosis was performed. The tumour appeared macroscopically as fatty tissue [Table/Fig-5]. Pathological examination revealed a benign submucosal lipoma. Postoperative course was uneventful and the patient was discharged on the 6th postoperative day.



[Table/Fig-5]: Intraoperative findings: Submucosal rounded fatty mass.

DISCUSSION

Adult intestinal intussusception is a rare clinical entity. Usually the underlying cause is a malignant or a benign tumour [1,2]. Intestinal lipoma has been reported among the benign causes. It accounts for 2% of all gastro-intestinal tumours. It can act as the leading point of the intussusception due to its intraluminal location [3]. Intestinal lipomas were found in the ileum in 22 cases among the 51 cases as reported by Mouaqit O et al., [3]. About 23 more cases of intestinal intussusceptions caused by lipomas, in the English literature was compiled since August 2012. Lipomas were located in the ileum in nine cases [Table/Fig-6] [3-25]. The clinical presentation is non-specific and the typical clinical triad of abdominal pain, a sausage-shaped mass and red jelly stools, usually lacks in adults making this condition difficult to diagnose [26].

The best diagnostic modality is abdominal CT scan [27]. The finding of lipid attenuation (-100 to -50 HU) is mandatory to the diagnosis of a lipoma [28,29]. To avoid mistaking the lipoma for intraluminal gas or invaginated mesenteric fat, the observation of the images reformatted in multiple dimensions, with the optimal window and oral contrast filling of the bowel can be needed [30]. Possible vascular compromise is difficult to assess on axial images with conventional CT scan. A much better assessment of the vascular supply to the affected bowel loop and of the intussusception length can be made using multidetector CT [31]. In our patient preoperative diagnosis was made successfully supported by CT scan findings. Other modalities include colonoscopy which allows a direct visualisation of the lipoma and it is more appropriate to assess colonic localisation [13]. Nevertheless, colonoscopy was useful for the diagnosis for ileal lipoma with ileo-colic intussusception in two case [8,31]. The other diagnostic tools reported are ultra-sonography, barium studies and video capsule endoscopy [3]. Intraoperative diagnosis during exploratory laparotomy were reported in two cases [12,14].

Laparotomy with bowel resection and primary anastomosis is the treatment of choice. In colonic intussusceptions, it is recommended to perform resection in block without reduction. For entero-enteric cases, a selective approach can be applied. Reduction is not recommended when signs of bowel ischemia or inflammation are present or malignancy is suspected [15,28]. Intraoperative reduction of the instussusception prior to resection may preserve a considerable length of bowel [4,5]. In this case, the preoperative diagnosis of ileal lipoma being made, the involved

Gender	Age	DG	Location	Size (cm)	Treatment	Author	Year
Male	55	CT	Colon	3	Right hemicolectomy	Mouaqit O et al., [3]	2013
Female	52	CT*	Ileum	6	Ileal resection	Uyulmaz S et al., [4]	2018
Male	22	CT	Ileum	-	Ileal resection	Vagholkar K et al., [5]	2015
Male	50	CT	Ileum	4	Ileal resection	Jiang RD et al., [6]	2015
Female	45	CT	Ileum	-	Ileal resection	Fazeli MS et al., [7]	2014
Female	52	CT, Colonoscopy	Ileum	0,3-5	Ileal resection	Gao PJ et al., [8]	2014
Female	30	US	Ileum	3	Ileocaecal resection	Bosman WM et al., [9]	2014
Female	30	CT	Ileum	-	Right hemicolectomy	Molnar C et al., [10]	2013
Female	73	CT, Colonoscopy	Ileum	3	Endoscopic	Lee ES et al., [11]	2013
Male	55	Laparotomy	Ileum	4	Ileal resection	Singhal S et al., [12]	2012
Male	40	CT, Colonoscopy	Colon	6	Segmental colectomy	M'rabet S et al., [13]	2018
Female	65	Laparotomy	Colon	9	Left hemicolectomy	Ongom PA et al., [14]	2012
Female	44	CT	Jejunum	3	Jejunal resection	Seow-En I et al., [15]	2014
Male	47	CT	Ileocaecal valve	3	Ileo-caecal resection	Kumar K et al., [16]	2017
Female	47	CT	Colon	9	Right hemicolectomy	Casiraghi T et al., [17]	2016
Male	50	CT, Sigmoidoscopy	Colon	6	Left hemicolectomy	Low HM et al., [18]	2016
Male	57	CT, Colonoscopy	Colon	6	Segmental colectomy	De Figueiredo LO et al., [19]	2016
Female	52	US*, CT	Ileocaecal valve	5	Right hemicolectomy	Stancu B et al., [20]	2016
Male	44	CT	Colon	6	Right hemicolectomy	Arslan E et al., [21]	2017
Female	73	US, CT	Ileocaecal valve	6	Right hemicolectomy	Gys B et al., [22]	2015
Female	65	CT, Colonoscopy	Ileocaecal valve	7		Kang B et al., [23]	2014
Male	56	CT	Colon	-	Right hemicolectomy	Eyselbergs M et al., [24]	2014
Female	54	CT	Colon	6	Left hemicolectomy	Grasso E et al., [25]	2012

[Table/Fig-6]: Case reports of intestinal intussusceptions caused by lipomas reported in the English literature since August 2012 [3-25].
*CT: Computed tomography, *US: Ultrasonography

bowel segment was long and even though the bowel showed signs of ischemia, we attempted reduction successfully, which allowed us to spare 50 cm of bowel length. This method could have caused inadvertent bowel injury that is why it should be performed gently. Reduction should be abandoned and followed by resection anastomosis if the attempt is not harmless and successful [32].

CONCLUSION

Submucosal intestinal lipoma can cause intussusception presenting as an acute tender abdominal mass. The preoperative diagnosis is possible with CT scan; showing a target sign or a pseudo kidney sign with a fat-density lead point. Early surgery allows definitive diagnosis and treatment which is resection with primary anastomosis.

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