Case 18135

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Giant colic lipoma causing transverse colo-colic invagination

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Section: Abdominal imaging
Area of Interest: Abdomen Gastrointestinal tract Oncology
Imaging Technique: CT
Special Focus: Acute Case Type: Clinical Cases
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Patient: 65 years, female

Clinical History:

A 65-year-old female with no relevant medical history presented at the emergency department with worsening chronic abdominal pain, diarrhea, and weight loss. She complained of intermittent pain flare-ups. Clinical abdominal examination showed upper abdominal tenderness without signs of acute abdomen. Laboratory test results were unremarkable.

Imaging Findings:

Contrast-enhanced computed tomography (CT) was performed in the portal venous phase to evaluate the gastro-intestinal tract and to exclude (pancreatic) neoplasm. A complex soft tissue mass was encountered in the transverse colon. Axial and coronal images (Fig. 1A and 1B, respectively) showed invagination of the proximal transverse colon into its distal part, leading to a sausage-like configuration. Sagittal images showed a *doughnut sign* or *target sign* (Fig. 2). The lead point causing invagination was a large, well-defined hypodense mass of 5,5 cm showing enhancement of the wall and some enhancing internal septae. The mass demonstrated a density of -40 Hounsfield Units, in keeping with a submucosal lipomatous colon tumor. No signs of bowel ischemia or perforation were noted.

Discussion:

Intussusception is defined as the invagination of an intestinal loop with its mesenteric fold (“intussusceptum”) into the distal lumen of the same intestinal segment (“intussuscipiens”). It is either caused by a bowel mass that is pulled forward by normal peristalsis, thus resulting in invagination of the involved wall, or by functional disturbances of the wall [1].

In contrast to children, invagination is rare in adults, accounting for only 1% of cases of mechanical intestinal obstruction. Two-thirds of intestinal intussusceptions in adults appear in the small bowel, most often due to benign lesions (e.g., lipoma, leiomyoma, Meckel’s diverticulum, and others). In contrast, intussusception in large bowel is more commonly associated with underlying malignant neoplasm (50-65%) [1, 2].

Colonic lipomas are more commonly found in women and occur mostly in 40- to 70-year-old patients[3].
Their size ranges from several millimeters up to 30 centimeters. Symptoms correlate with the size of the lipoma. Small lesions are often encountered incidentally during colonoscopy or surgery for other conditions. However, lipomas larger than 4 cm in size (termed “giant lipoma”) become symptomatic in up to 75% of patients[3].
Lipomas are the most common benign cause of colo-colic intussusception in adults.

Patients present with atypical symptoms; chronic abdominal pain (83%), intermittent abdominal pain (29%), abdominal cramps and constipation (both 18%) are the most common. Physical examination may reveal palpatory tenderness (37%) although normal findings are common as well (24%) [2].

In adults, the first-choice imaging technique for evaluating intussusception is CT given its superiority over ultrasound, in terms of identifying a leading cause, concomitant disease (e.g., metastasis or adenopathy) and to assess for findings indicative of bowel ischemia [1, 2]. In children, ultrasound is the preferred modality for initial work-up due to its availability, non-invasive nature, and high negative predictive value for intussusception [1]. Intussusception can be confidently diagnosed in both imaging techniques because of its typical appearance: a *target sign* or *doughnut sign* may be seen in imaging planes perpendicular to the longitudinal axis of the intussusception. On the contrary, when the imaging plane is parallel to the longitudinal axis of the intussusception, this results in a *sausage sign* [1–3].

Sometimes it is difficult to distinguish lipomas on imaging from well-differentiated liposarcomas. Lipomas tend to have very few thin septa, while well-differentiated liposarcomas show larger, thicker (> 2mm) and nodular septa [4].

Treatment of intussusception differs in children versus adults. Barium-enema examination is the golden standard in children both for its diagnostic capacity but also for its therapeutic effect. Adults are more likely to require surgical (laparoscopic) intervention [1]. Our patient was treated with partial colectomy with end-to-end anastomosis, and anatomo-pathological examination revealed a benign lipoma.

Written informed patient consent for publication has been obtained.

Differential Diagnosis List: Colo-colic intussusception due to giant submucosal lipoma in the transverse colon, Colo-colic intussusception due to colonic lipoma, Colo-colic intussusception without a lead point, Colonic (sub)obstruction

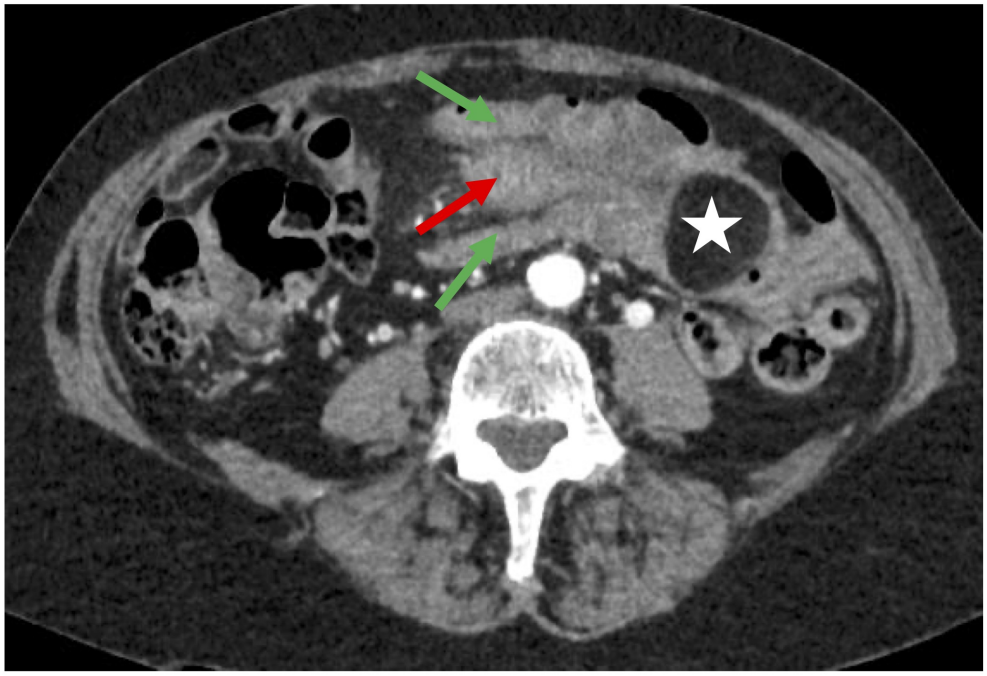
Final Diagnosis: Colo-colic intussusception due to giant submucosal lipoma in the transverse colon

References:

Gayer G, Zissin R, Apter S, et al (2002) Pictorial review: adult intussusception--a CT diagnosis. The British Journal of Radiology Volume 75 (890): 185-190. (PMID: 11893645)
Menegon Tasselli F, Urraro F, Sciaudone G, et al (2021) Colonic Lipoma Causing Bowel Intussusception: An Up-to-Date Systematic Review. Journal of Clinical Medicine Volume 10 (21): 5149. (PMID 34768668)
Nallamothu G, Adler DG (2011) Large Colonic Lipomas. Gastroenterology & Hepatology Volume 7 (7): 490. (PMID 22298986)
Munk PL, Lee MJ, Janzen DL, et al (1997) Lipoma and liposarcoma: evaluation using CT and MR imaging. AJR American Journal of Roentgenology Volume 169 (2): 589–594. (PMID 9242783)

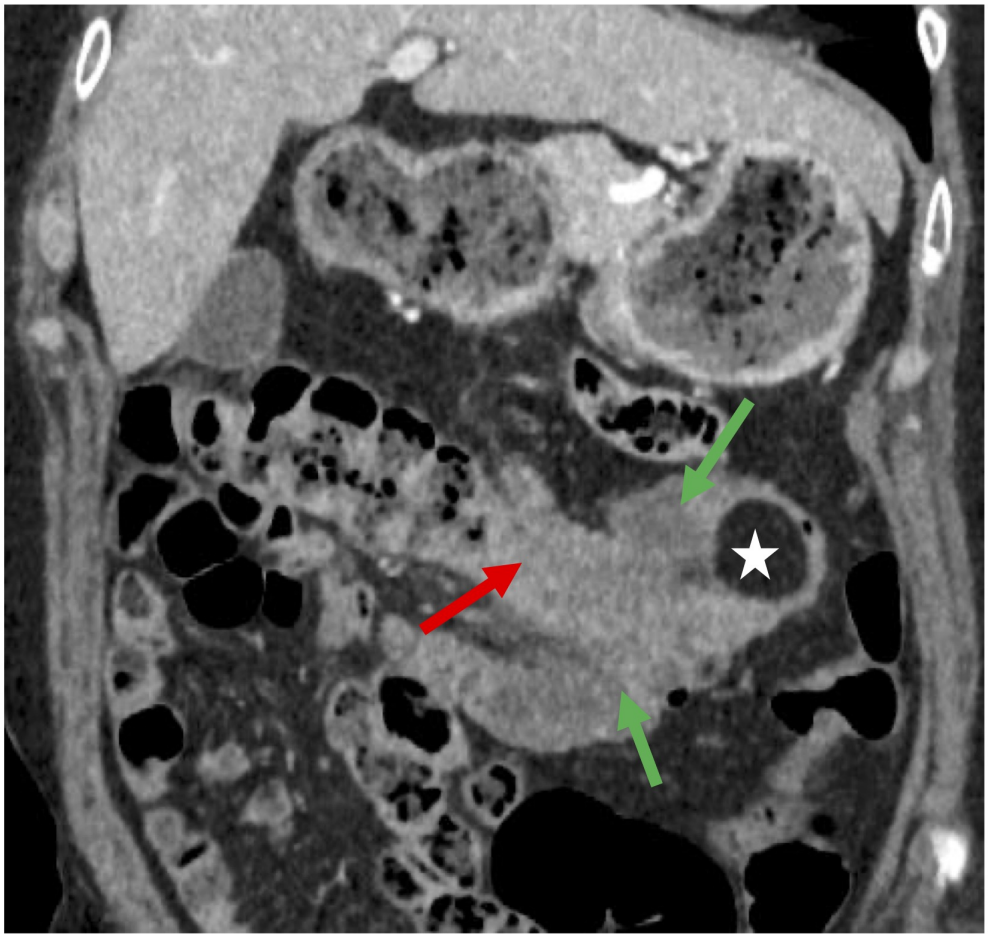
Figure 1

a



Description: Axial CT scan of the abdomen in portal venous phase. Description: Invagination of the colon transversum (outer intussusceptum, red arrow) into the distal colonic segment (inner intussuscipiens, green arrows) is seen: colo-colonic intussusception. A sausage sign is demonstrated since the axial plane is parallel to its longitudinal axis. The causative leading point is a fat-attenuating, sharply demarcated mass (asterisk): colonic lipoma **Origin:** © Department of Radiology, AZ Jan Palfijn Ghent, East-Flanders, Belgium, 2022

b



Description: Coronal CT scan of the abdomen in portal venous phase. Description: The same sausage-shaped mass is seen, consisting of an inner intussuscipiens (red arrow) and outer intussusceptum (green arrows) in the transverse colon. Colonic lipoma is the leading point (asterisk). No signs of bowel suffering (e.g., mucosal hyperemia, submucosal edema, colonic wall thickening, peri-colonic fat stranding) are found **Origin:** © Department of Radiology, AZ Jan Palfijn Ghent, East-Flanders, Belgium, 2022

Figure 2

a

Description: A target sign or doughnut sign is demonstrated. It consists of a crescent of tissue around the compressed lumen of the inner intussuscipiens (red arrow), surrounded by two layers of the outer intussusceptum (green arrows) **Origin:** © Department of Radiology, AZ Jan Palfijn Ghent, East-Flanders, Belgium, 2022