Case 16160

Eurorad

Colo-colonic intussusception due to submucosal colonic lipoma as a cause of intestinal obstruction

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Section: Abdominal imaging
Area of Interest: Abdomen Gastrointestinal tract
Procedure: Diagnostic procedure
Imaging Technique: Conventional radiography
Imaging Technique: CT
Special Focus: Obstruction / Occlusion Neoplasia
Case Type: Clinical Cases
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Patient: 73 years, female

Clinical History:

A 73-year-old female was diagnosed with a right pertrochanteric fracture and treated with intramedullary nail fixation. On the 5th postoperative day she developed progressive abdominal distension with worsening of the general condition.
With the clinical suspicion of adynamic ileus, plain abdominal film and computed tomography (CT) of abdomen and pelvis were performed.
Imaging Findings:

Plain abdominal film showed a large number of dilated air-containing bowel loops and dilatation of the right and transverse colon, suggesting mechanic intestinal obstruction.

Contrast-enhanced CT revealed large bowel obstruction with ileocecal valve incompetent and transition point at distal transverse colon secondary to a colo-colonic intussusception. A 4 cm lobulated fat density intramural colonic mass was seen as the lead point of the intussusception. The right colon was markedly dilated with cecum measuring 10 cm and showing pneumatosis. Open extended right hemicolectomy was performed uneventfully. Pathology confirmed the diagnosis of submucosal colonic lipoma. Many other submucosal lipomas smaller than 0.2 cm were seen in the hemicolectomy piece.
Discussion:

Intussusception is defined as the invagination of an intestinal loop (termed the intussusceptum) into the distal portion of the same intestinal segment (known as the intussuscipiens). In adults, in contrast to children, it is relative rare, accounting for only 5% of all cases of intussusception and 1-5% of all causes of mechanical intestinal obstruction. [1, 2] A demonstrable cause is found in 70-90% of adult cases. Malignant lesions are responsible for 66% of cases of adult intussusceptions occurring in large bowel and for 30% occurring in small bowel. [1, 2]

Lipomas are benign adipose tumours, most often localized in the submucosa of the gastrointestinal tract. Approximately 65-75% of the gastrointestinal lipomas are located in the colon, most commonly in the ascending

colon and cecum. [3] However, colo-colonic intussusception due to colonic lipoma has been described more frequently in the transverse or descending colon as in our case. [4] Multiple lipomas have been shown in 10-20% of the patients. [3]

The majority of colonic lipomas are diagnosed in the fifth and sixth decades and more often in women. [1, 4] Lipomas are usually asymptomatic, often discovered incidentally in routine procedures or in pathological specimens. Uncommonly, they can cause abdominal pain, bleeding, intestinal obstruction and intussusception. The risk of bowel obstruction, intussusception and clinical symptoms correlates with its size, usually larger than 2 cm. [5, 6] Lipomas larger than 4 cm are considered giant and are symptomatic in 75% of cases. [5, 6]

Imaging techniques are key in the diagnosis of intussusception. Ultrasound is essential in children, being less accurate in adults due to their larger size and the presence of intestinal gas. CT is the imaging technique of choice in adults. At CT, the presence of a target-like mass with a bowel-within-bowel configuration with or without mesenteric fat and mesenteric vessels is pathognomonic for intussusception. In addition, it may identify the lead point responsible for the intussusception.[7]
Lipomas typically appears in CT as a round or ovoid, smooth, well-demarcated, homogeneous mass with characteristic fatty densitometric value (Hounsfield units between -80 and -120).[3] CT scan is particularly useful in the detection of lipomas larger than 2 cm.

Most authors recommend surgical resection for colonic lipomas greater than 2 cm in size due to the risk of colonic intussusception and also for intussusceptions in adults, as they usually have a lead point with a high incidence of malignancy. [6]

“Written informed patient consent for publication has been obtained”.
Differential Diagnosis List: Colo-colonic intussusception caused by colonic lipoma., Colonic neoplasm, Colonic obstruction

Final Diagnosis: Colo-colonic intussusception caused by colonic lipoma.

References:

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Kim YH1, Blake MA, Harisinghani MG, Archer-Arroyo K, Hahn PF, Pitman MB, Mueller PR. (2006) Adult intestinal intussusception: CT appearances and identification of a causative lead point. Radiographics 26(3):733-44 (PMID: 16702451)

Figure 1

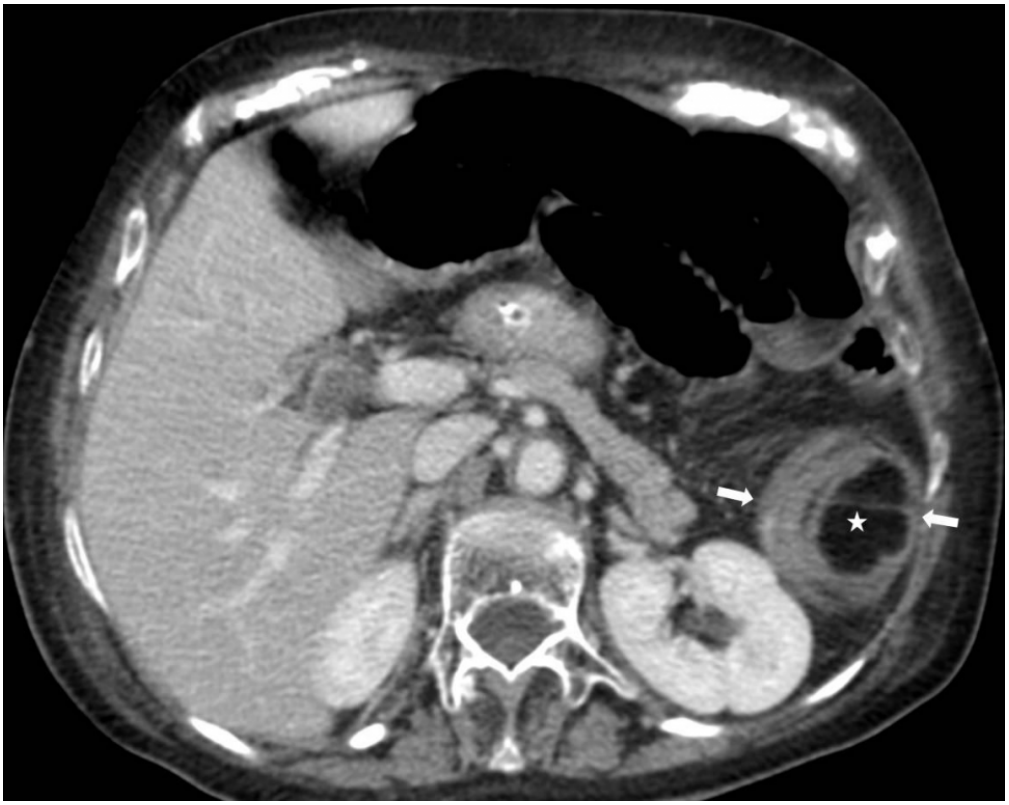
a

Description: Axial CT image displays the distal transverse colon or intussusceptum (open arrow) that invaginates into adjacent distal colon or intussuscipiens (arrows). **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

b

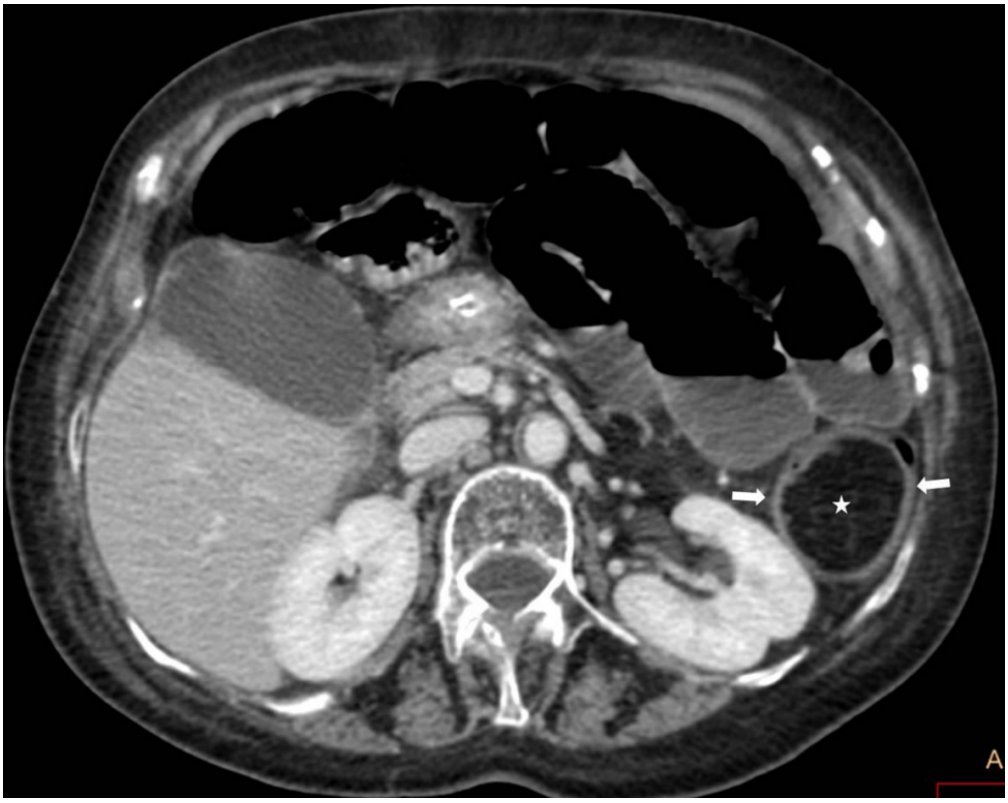
Description: The intussusceptum drags with it its corresponding mesentery and vessels (arrowheads).
Origin: Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

c



Description: Axial image shows the classical target-like or bowel-within-bowel appearance of invagination (arrows). Asterik indicates the colonic lipoma. **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

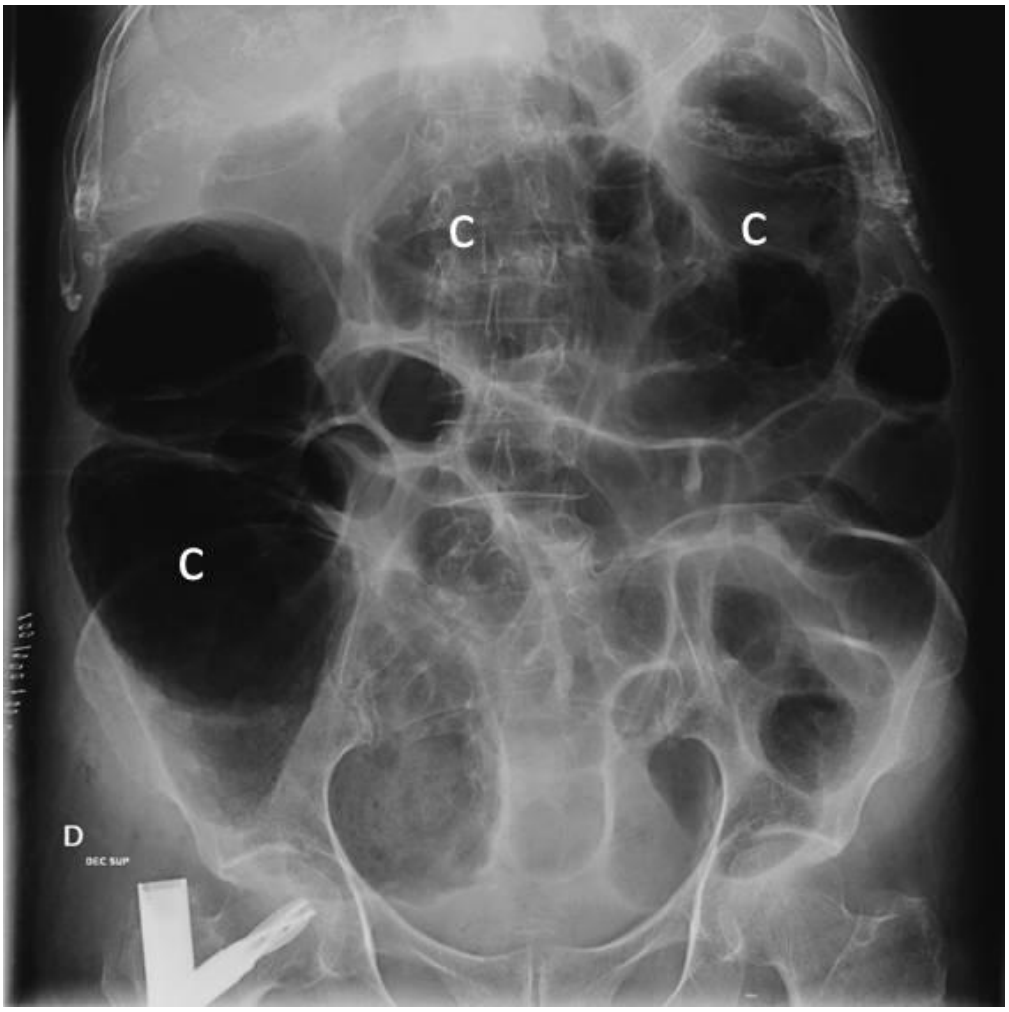
d



Description: Axial image at the distal level of the intussusception (arrows) shows the lipoma as the lead point. Note the retrograde dilation of the intestinal loops with air-fluid levels secondary to intestinal obstruction. **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

Figure 2

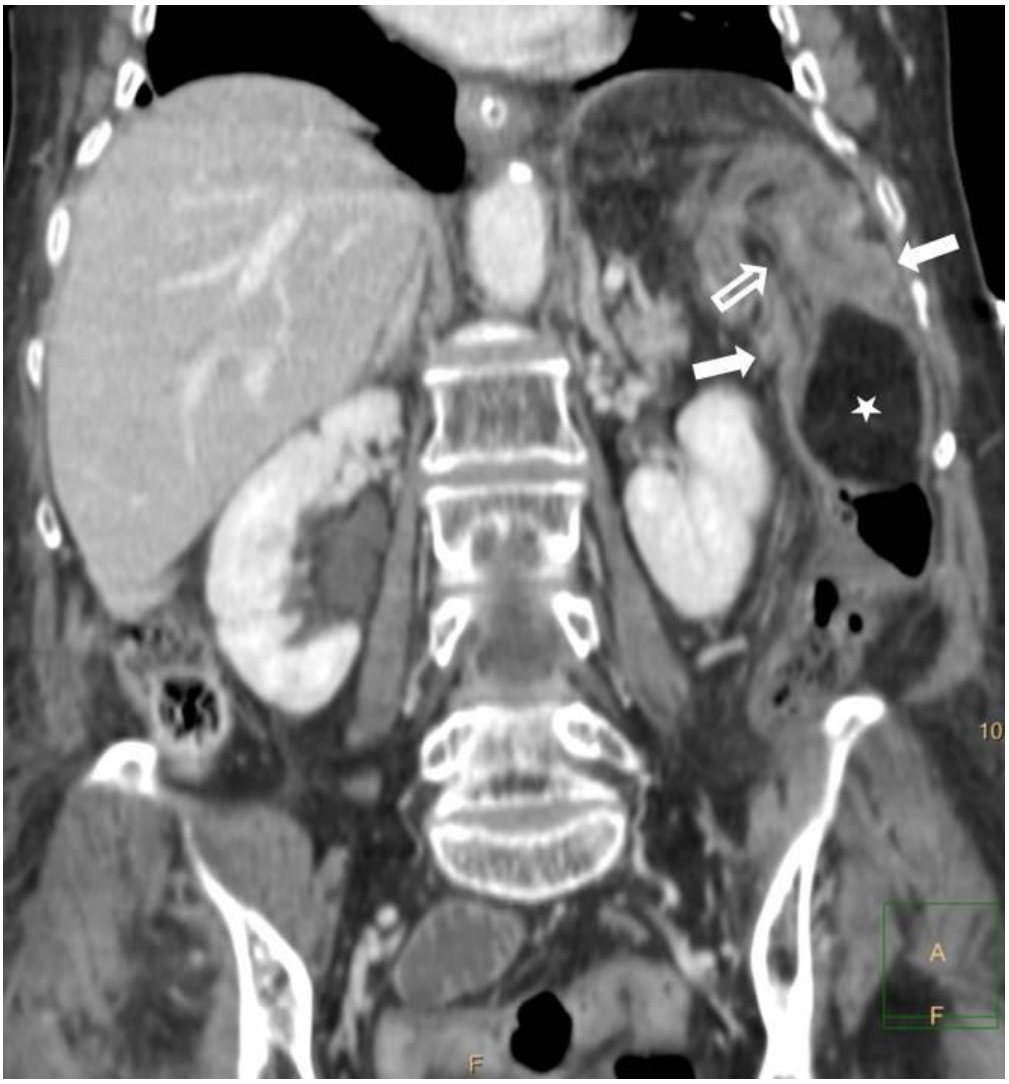
a



Description: Abdominal X-ray reveals diffuse dilatation of the loops of the small bowel and the right and transverse colon (c), without showing dilation of the left colon or rectum, consistent with colonic obstruction. **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

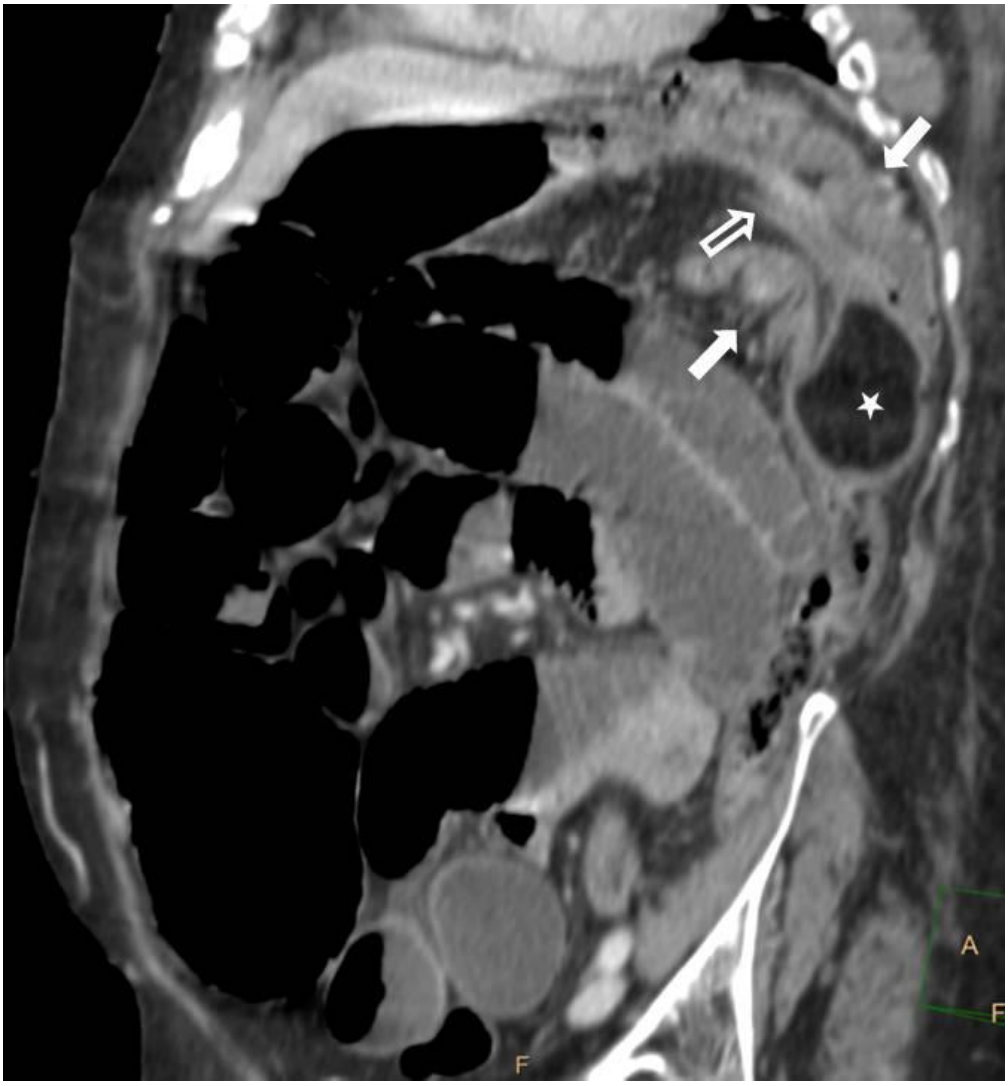
Figure 3

a



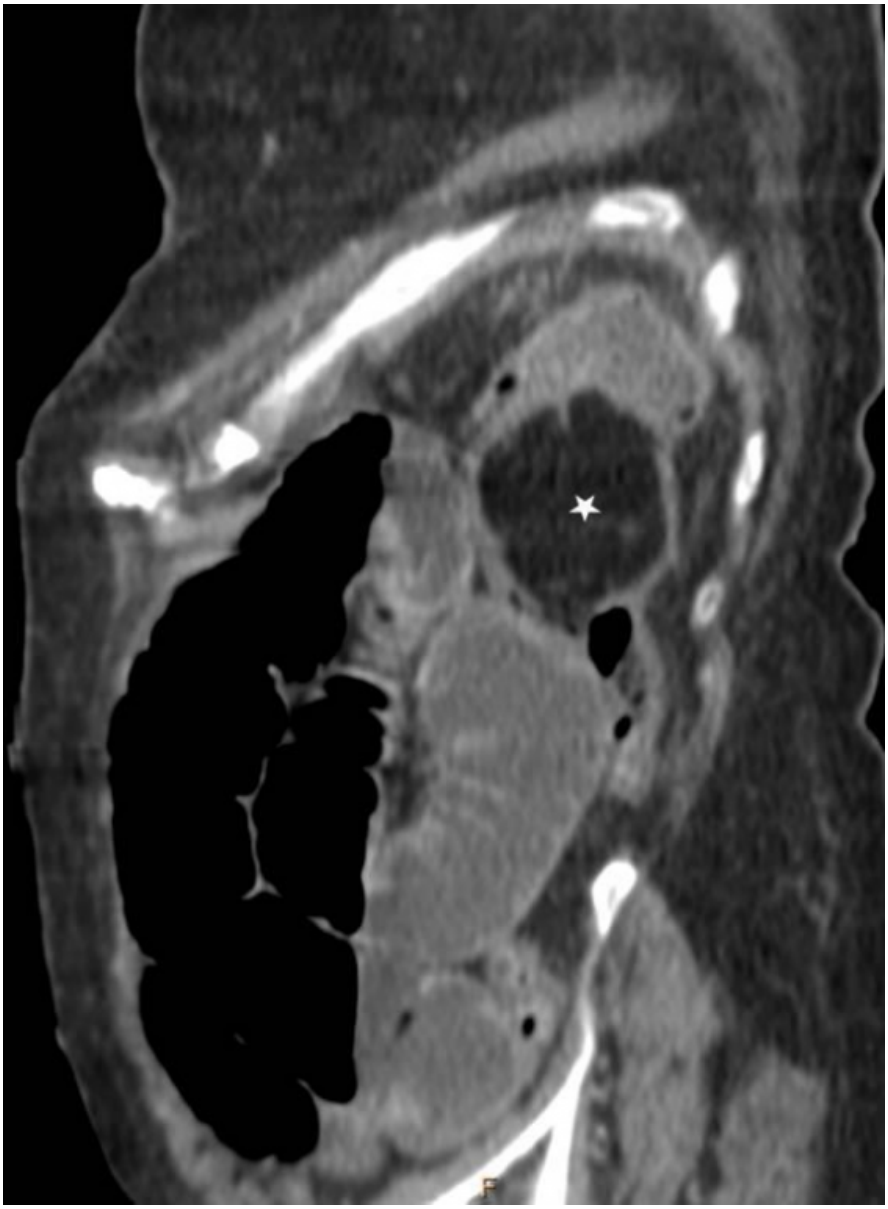
Description: Coronal CT image shows the distal segment of transverse colon with the mesenteric vessels and accompanying fat (open arrow) prolapsing into the descending colon (solid arrows) dragged by a fatty mass (asterisk). **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

b



Description: Sagittal oblique CT image demonstrates the colo-colonic intussusception secondary to a lipomatous mass consistent with lipoma (asterisk). Open arrow indicates the intussusceptum and solid arrows the intussuscipiens. Note the dilation of bowel loops. **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

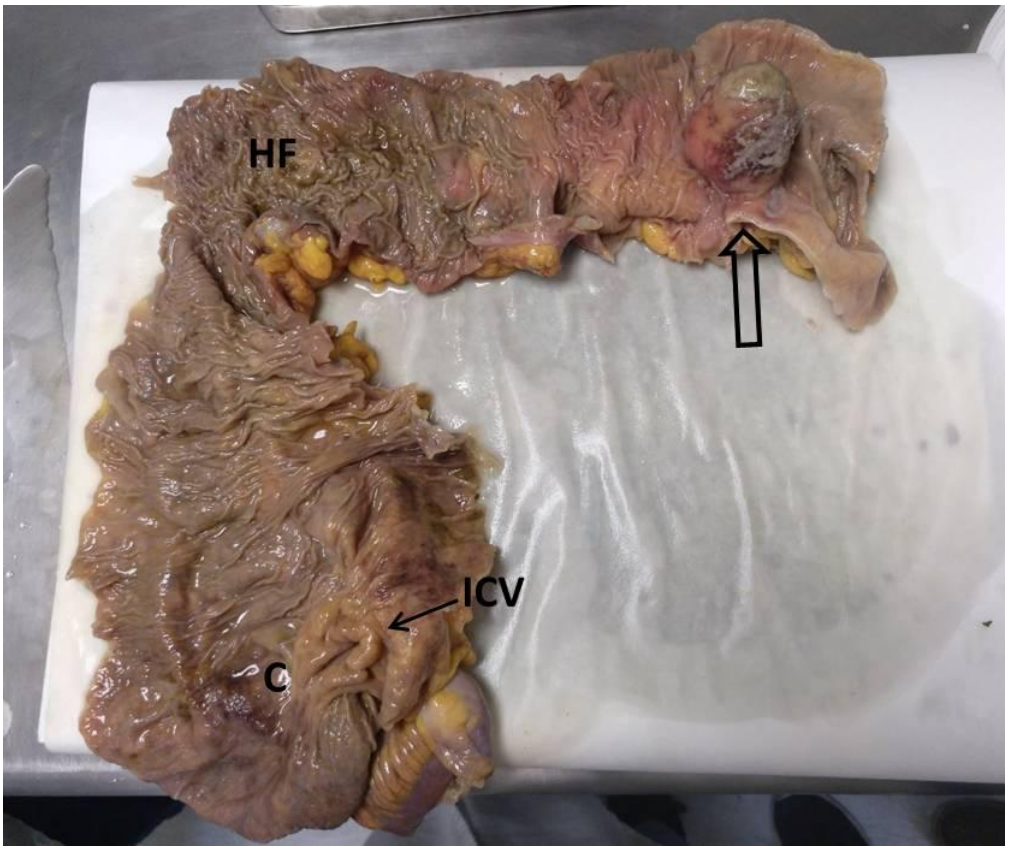
c



Description: Sagittal CT image shows a well-defined rounded mass with homogeneous fat density compatible with intramural colonic lipoma at the apex of the invaginated bowel (asterisk). **Origin:** Radiology Department, Hospital Universitario 12 de octubre, Madrid (Spain)

Figure 4

a

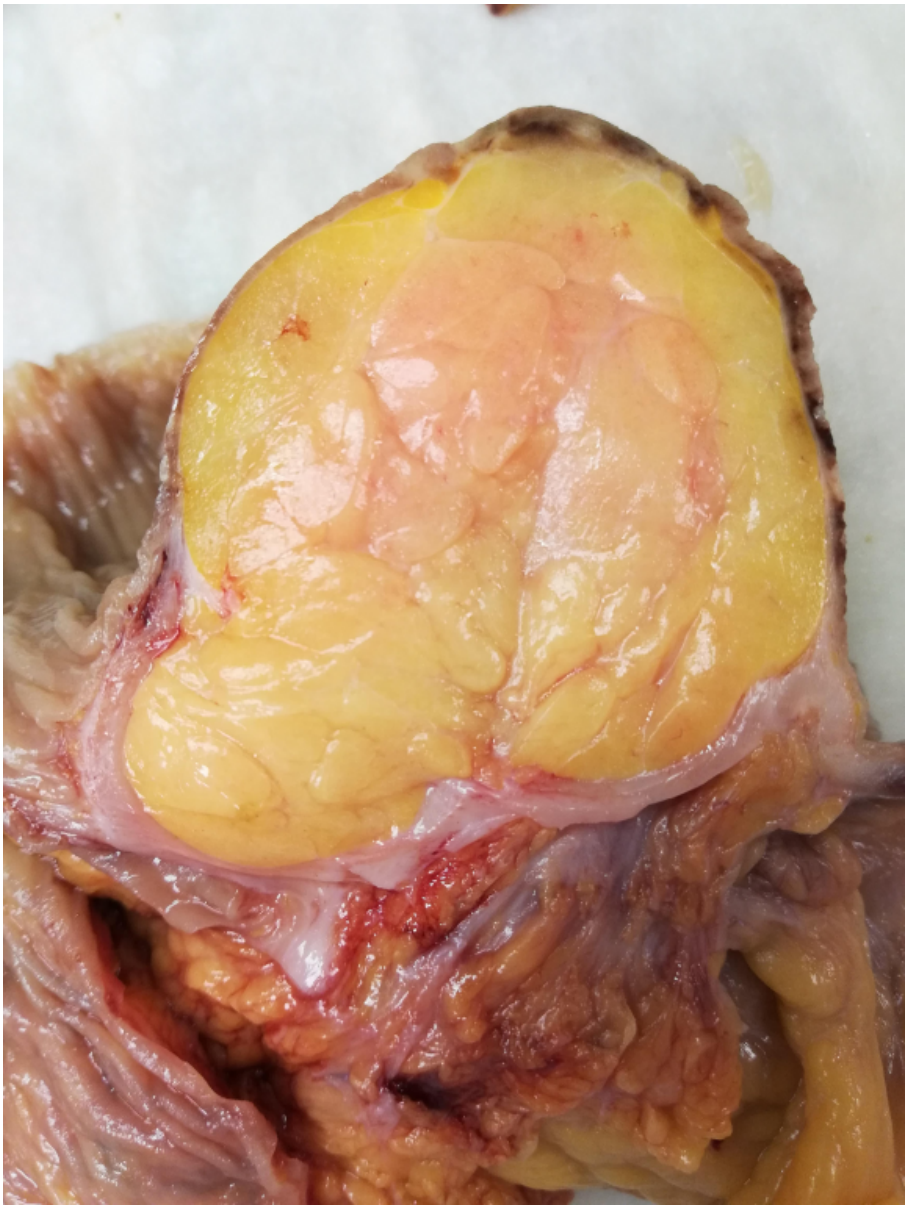


Description: Extended right hemicolectomy piece with mural mass with endoluminal growth (open arrow). C= cecum, HF= hepatic flexure of the colon, ICV= ileocecal valve. **Origin:** Hospital Universitario 12 de octubre, Madrid (Spain)

b

Description: Extended right hemicolectomy piece with a large mural mass. It protrudes towards the colonic lumen although it has a submucosal location. Note the ulceration of the epithelial surface of the mass. **Origin:** Hospital Universitario 12 de octubre, Madrid (Spain)

c



Description: Cut section of the tumor showing the homogeneous fatty consistency of the lipoma.
Origin: Hospital Universitario 12 de octubre, Madrid (Spain)