Lipoma in the descending colon causing colocolic intussusception.

Diagnosis and pre-surgical evaluation by spiral CT

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Section: Abdominal imaging
Imaging Technique: CT
Case Type: Clinical Cases
Authors: Vázquez V, Morales D, Gilabert A, Reus M, Rodríguez D
Patient: 52 years, male

Clinical History:

Abdominal pain in the left lower quadrant and constipation. No nausea, vomiting or fever. On physical examination, a mass was found with some guarding. There was no clear evidence of peritoneal irritation.

Imaging Findings:

The patient presented with pain in the left lower quadrant of her abdomen and also complained of constipation. These symptoms had been apparent for two days. She had no nausea, vomiting or fever. On physical examination, the patient referred to pain in the abdomen. A mass was found with some guarding in the patient's left side and left iliac fossa. There was no clear evidence of peritoneal irritation.

A colonoscopy was performed and, in the colosigmoid junction, a soft, ulcerated, centrally placed, submucous neoformation was observed, which allowed passage of the endoscope to the upper tracts (Fig. 1). A biopsy was taken, but this produced no conclusive results. A spiral CT study, with multiplanar reconstruction (MPR) on the coronal and sagittal planes, was carried out. This resulted in the diagnosis of a fatty tumour (probably a lipoma), which significantly blocked the lumen of the descending colon. Colocolic invagination was also diagnosed (Figs 2 and 3).

A supraumbilical laparotomy was performed and a submucous tumour, which had caused colocolic invagination, was found close to the sigmoid junction on the patient's left side. A left hemicolectomy was undertaken in order to remove the lipoma, followed by anastomosis of the colon to the sigma. A histopathological study of the neoplasm confirmed that it was an ulcerated submucous lipoma of the large intestine.

Discussion:

Lipomas are the second most common benign tumours of the colon after adenomas. They have an incidence rate, based on autopsies, of between 0.2% and 1.3%. These tumours are composed of well-defined adipose tissue with a clearly-demarcated fibrous support structure and have a submucous location in 90% of cases. Lipomas can be located anywhere along the digestive tract although they are most commonly found in the colon. Of those lipomas located within the colon, 50% are found in the typhlon and ascending colon. The occurrence of a lipoma in the sigma is extremely rare. The most common clinical manifestation of such neoplasms is abdominal pain. This may be followed by changes in intestinal function, proctorrhagia, intestinal obstruction, signs of intussusception or, more
Infrequently, a noticeable mass. Surgical treatment of lipomas is indicated when they are symptomatic or cause complications.

Some reports refer to lipomas as the second most common cause of intestinal invagination in adults; colonic carcinoma is the only more common cause. Invagination most commonly presents in cases of large pediculate lipomas.

On colonoscopy, lipomas appear as soft masses, thus resembling lymphangiomas and haemangiomas. In the investigation of submucous tumours, opaque enema has a greater diagnostic potential than colonoscopy as it allows a more detailed study of the structural characteristics. A typical feature of colonic lipomas, on both opaque enema and colonoscopy, is their changing formation ("squeeze sign"); a characteristic shared with leiomyomas and lymphangiomas.

An alternative imaging method, endoscopic ultrasonography, reveals perfectly the intestinal layers in which the tumour originates, the echoic properties of the lesion, and its actual size. CT and ultrasound are less invasive methods than endoscopic ultrasonography. On CT, lipomas are characterised by a uniform density equal to that of fat (-60HU to -120HU). Intussusception is well diagnosed by means of CT. The appearance of a bowel-within-bowel configuration, with or without contained fat and mesenteric vessels, is pathognomonic. Ultrasound has been shown to demonstrate typical appearances in this condition. On transverse section a "doughnut" or "bulls eye" sign is seen and on longitudinal section a "pseudokidney" sign is typical.

Technological improvements, with spiral CT now able to cover the whole abdominal cavity in a single breath hold, allow transient events to be imaged in their entirety before they change position or resolve. Spiral CT allows higher quality image reconstruction than conventional CT, thus facilitating the study of the intestine from various angles.

CT findings also permit a pre-surgical evaluation of the degree of vascular involvement caused by intussusception. The presence of gas within the intussusceptum suggests perforation or gangrene, indicating the need for an urgent operation.

In the patient in this case, spiral CT showed a lipoma situated in the descending colon, causing colosigmoid invagination. The CT study helped to determine the viability of the invaginated loop prior to surgery, thus reducing the extent of surgical treatment to removal of the tumour only. Multiplanar reconstruction spiral CT, allowed examination of the invagination and lipoma from various angles.

The diagnosis and outcome regarding this patient are illustrative of the value of CT in cases of invagination due to colonic lipoma. CT enables a definitive diagnosis, and consequently establishes the extent of vascular involvement in the invagination, resulting in more tailored management of each patient.

Differential Diagnosis List: Colocolic intussusception secondary to a lipoma in the sigma

Final Diagnosis: Colocolic intussusception secondary to a lipoma in the sigma

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Figure 1

Description: Colonoscopic view of an ulcerated lipoma in the descending colon surrounded by a ring of intussuscepted colon. Origin:
**Figure 2**

a

**Description:** This image shows colocolic intussusception forming a loop within the pelvis. The intussusciens (straight arrows), intussusceptum (arrowhead) and mesenteric vessels within the intussusceptum (small arrow) are shown. Note the hypodense layer in the middle zone of the intussusceptum. **Origin:**

b

**Description:** This image, obtained at a level slightly lower than Figure 2a, shows the thickened bowel wall and a characteristic fat density within the smooth, well-demarcated lipoma. **Origin:**
Description: MPR sagittal spiral scans show colocolic intussusception with a lipoma lead point. Origin: