

Malignant coloduodenal fistula

Published on 25.10.2015

DOI: 10.1594/EURORAD/CASE.12938

ISSN: 1563-4086

Section: Abdominal imaging

Area of Interest: Abdomen

Procedure: Diagnostic procedure

Imaging Technique: CT-High Resolution

Special Focus: Neoplasia Case Type: Clinical Cases

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Patient: 87 years, female

Clinical History:

The patient presented with a two-week history of nausea, vomiting, haematemesis, haematochezia and weight loss. Clinical history included chronic gastritis and duodenal ulcer.

At physical examination the patient was pale, dehydrated and hypotensive (BP 73/49 mmHg); The laboratory assays showed a haemoglobin of 6.8 g/dL.

Imaging Findings:

Abdominopelvic computed tomography (CT) was performed with intravenous iodinated contrast and oral administration of water-soluble iodinated contrast.

It showed a heterogeneously enhancing wall thickening of the proximal transverse colon with adjacent pericolonic fat stranding, features compatible with a colonic tumour. There was associated loss of interface of the colonic tumour with the third portion of the duodenum suggestive of direct infiltration. In this location it was even possible to identify leakage of oral contrast between the lumina of the third portion of the duodenum and the proximal transverse colon demonstrating a fistulous communication between them.

Discussion:

Malignant coloduodenal fistula is a rare complication of malignant disease defined as a pathological communication between the lumina of the colon and duodenum. [1]

It is usually related with advanced colonic cancer but other rarer causes include carcinoma of the gallbladder and carcinoma of the duodenum. [1]

In this clinical case the fistula occurred due to direct local invasion of the duodenum by the colon tumour. [2]

The most common symptoms of malignant coloduodenal fistula include abdominal pain, nausea and diarrhoea that are usually caused by the bacterial migration from the colon to the duodenum. [3] Leakage of biliary and pancreatic secretions to the colon can also cause secretory diarrhoea, metabolic acidosis and chronic malabsorption. [4]

In the presence of such non-specific symptoms, cross-sectional imaging studies (CT or Magnetic resonance imaging (MRI)) can be the only tool to suggest the diagnosis of malignant coloduodenal fistula. CT and MRI can allow direct visualization of the fistulous tract or show indirect signs of it, namely loss of interface between the colonic tumour and the adjacent duodenum. Multiplanar reconstructions increase the detectability of the fistulous tract. CT and MRI also demonstrate both luminal and extraluminal pathology like abscess or bowel wall inflammation.

Cross-sectional imaging studies have also the advantage of providing the staging of the colonic tumour involved in the fistula.

If there is clinical suspicion of coloduodenal fistula, fluoroscopic contrast-enhanced studies can accurately demonstrate the communication between the colon and the duodenum. [4] Barium enema is reported as the most

accurate method study to delineate the coloduodenal fistulous communication. [4]

The treatment of malignant coloduodenal fistula is surgical. Definitive surgery involves resection of the tumour and the fistula en-block. [5]

Detection of the fistula and its complications has a great impact in the management and prognosis: when appropriately detected, it reduces the debilitating metabolic and nutritional deficiencies, thereby improving the patient's morbidity and mortality. [6]

Differential Diagnosis List: Malignant coloduodenal fistula due to colonic tumour., Diverticulitis, Crohn's disease, Tuberculosis

Final Diagnosis: Malignant coloduodenal fistula due to colonic tumour.

References:

Soulsby R, Leung E, Williams N (2006) Malignant colo-duodenal fistula; case report and review of the literature.

World Journal of Surgical Oncology 4:86 (PMID: [17147825](#))

Noronha GP, Hiremath R, K C A, Tippani D, C R A (2014) Malignant Colojejunal Fistula First Discovered on CT: A Case Report. J Clin Diagn Res Nov;8(11) (PMID: [25584286](#))

Majeed TA, Gaurav A, Shilpa D, Preeti J, Sanjay S, Manisha S, Kumar SJ, Bhushan PB (2011) Malignant coloduodenal fistulas-review of literature and case report. Indian J Surg Oncol Sep;2(3):205-9 (PMID: [22942613](#))

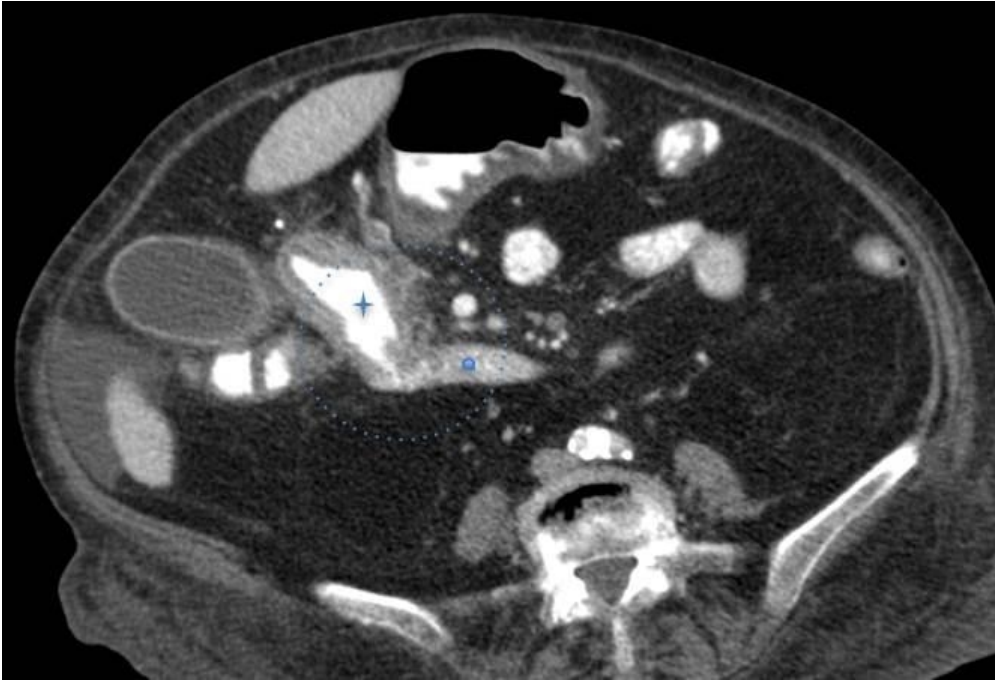
Alves G, Neoptolemos J, Concatto N, Hochhegger B, Irion K (2015) Coloduodenal Fistula: The Role of MDCT on Diagnosing a Rare Entity. Imaging Journal of Clinical and Medical Sciences 2(1):4-5

Shapey I, Mahmood K, Solkar M (2014) Malignant sigmoidoduodenal fistula. Int J Surg Case Rep 5(12):995-7 (PMID: [25460456](#))

Pickhardt P, Bhalla S, Balfe D (2002) Acquired gastrointestinal fistulas: classification, etiologies, and imaging evaluation. Radiology Jul;224(1):9-23. (PMID: [12091657](#))

Figure 1

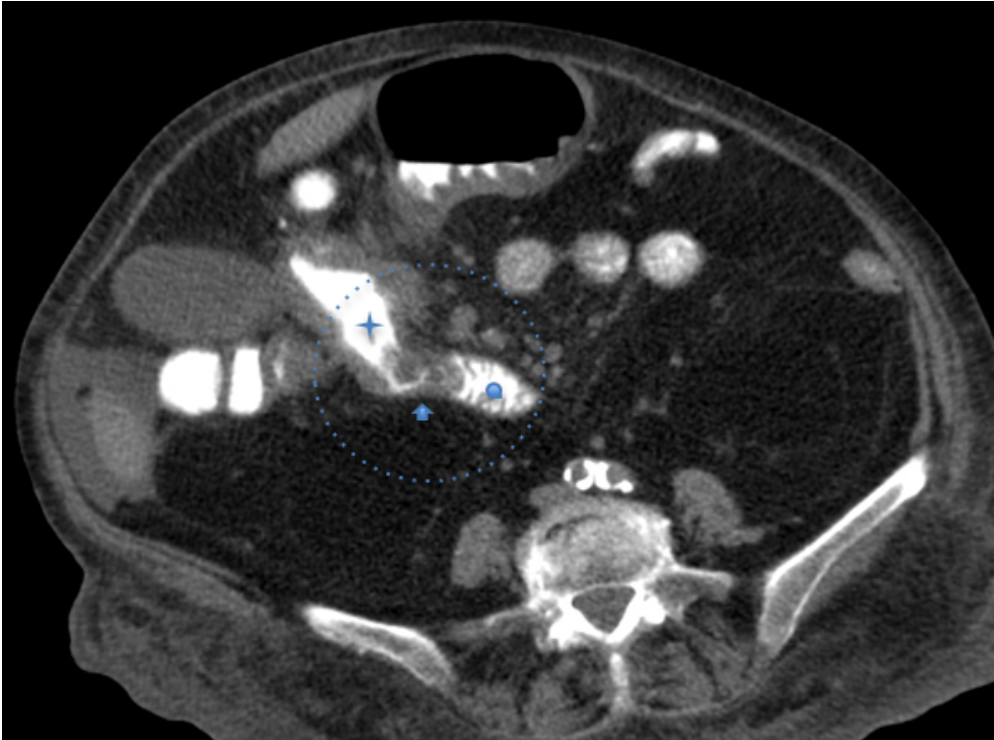
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Description: Axial contrast-enhanced CT depicting a colonic tumour (arrow) extending to and infiltrating the third portion of the duodenum (small circle). There was also a small quantity of perihepatic ascitic fluid. **Origin:** Imaging Department, Hospital de Santa Maria

Figure 2

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Description: Axial unenhanced CT depicting the fistulous communication (arrow) between the colon (cross) and duodenum (circle). **Origin:** Imaging Department, Hospital de Santa Maria

Figure 3

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Description: Axial contrast-enhanced CT depicting a colonic tumour (arrow) as a short segment of the proximal transverse colon with circumferential and heterogeneously enhancing wall thickening. The colonic tumour is adjacent to the duodenum (cross). **Origin:** Imaging Department, Hospital de Santa Maria

Figure 4

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Description: Coronal reconstruction depicting the fistulous communication between the proximal transverse colon (orange lines) and the duodenum (green lines). **Origin:** Imaging Department, Hospital de Santa Maria

Figure 5



Description: Movie of the coronal reconstruction depicting the malignant fistulous communication between the transverse colon and the duodenum. **Origin:** Imaging Department, Hospital de Santa Maria