Biliary metastasis of rectal carcinoma mimicking cholangiocarcinoma

Nuno Pereira da Silva , Inês Abreu , Luís Curvo-Semedo , Paulo Donato

Medical Imaging Department, Centro Hospitalar e Universitario de Coimbra EPE, Coimbra, Portugal

Correspondence to
Dr Nuno Pereira da Silva; nunoapsilva22@gmail.com

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DESCRIPTION

A 65-year-old man, with unremarkable previous medical history, presented to the emergency department with symptoms of anorexia, jaundice and fever. The serum total bilirubin level was 7.5 mg/dL and direct bilirubin was 5.4 mg/dL. Abdominal ultrasound detected generalised and irregular dilatation of the intrahepatic bile ducts, with heterogeneous content, showing abrupt ending at the level of the primary biliary confluence, which was obliterated by a poorly defined hypoechoic lesion (figure 1A). CT confirmed the presence of an ill-defined lesion at the confluence of the left and right bile ducts, with infiltrative growth and thickened portal track, especially in the right lobe (figure 1B). An irregular thickening of the wall of middle and low rectum was also identified, suspicious of neoplasia. Magnetic resonance cholangiopancretography demonstrated a hypovascular lesion with restriction to diffusion and infiltrative growth along the bile ducts associated with intraductal papillary projections, involving the confluence, right duct and right anterior duct (figure 1C–E). On biopsy of the rectal lesion, which was characterised as an adenocarcinoma, rectal MRI was performed to stage the neoplasm, as T3N1 (figure 1F). As a primary biliary neoplasm could not be formally excluded, an ultrasound-guided liver lesion biopsy was performed. Histological examination confirmed the diagnosis of biliary metastasis of colorectal origin. Carcinoembryonic antigen and CA19.9 were elevated at 14.9 ng/mL and 47.5 U/mL, respectively.

Biliary metastases are extremely rare, described secondarily to neoplasms of the lung, gallbladder, breast, testis, prostate, pancreas, melanoma, lymphoma and colorectal carcinoma, the most common primary,[1 2] namely tumours of the rectosigmoid junction.[3] Intrabiliary metastasis case reports are scarce in the medical literature,[3] with only a few cases reported (eight case reports in PubMed between 2011 and 2021 using the keywords 'bile duct metastasis' or 'intrabiliary metastasis').

Biliary metastases usually have an intraductal papillary growth. However, particularly in metastases of colorectal origin, an intraepithelial growth, similar to cholangiocarcinomas and simulating their appearance on CT and MRI, can be found.[2 4] Lee *et al* established some imaging features on CT and MRI that favour the diagnosis of biliary metastases rather than cholangiocarcinoma: the presence of a parenchymal mass adjacent to the biliary lesion, expansile growth of the intraductal lesion and history of colorectal cancer. Intralesional calcifications also favour the diagnosis of biliary metastasis, typical of colorectal mucinous metastases and extremely rare in cholangiocarcinomas. On the contrary, the following characteristics suggest cholangiocarcinoma: purely intraductal lesion, intraductal papillary growth and the history of extracolic neoplasia.[4]

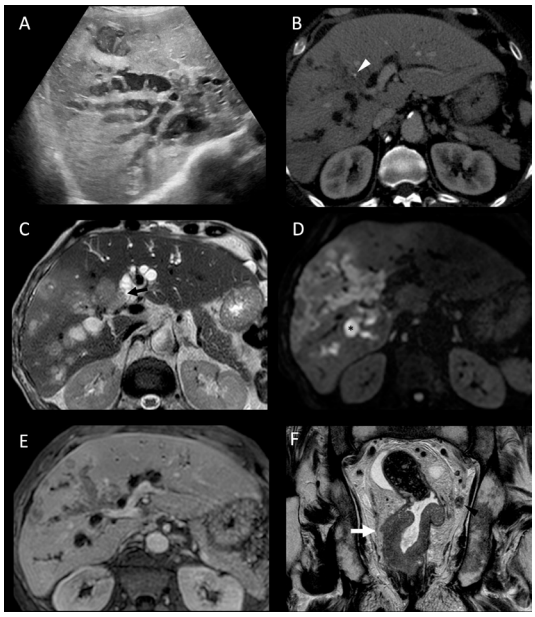

Figure 1 (A) Abdominal ultrasound detected generalised and irregular dilatation of the intrahepatic bile ducts with heterogeneous content, and associated intrahepatic heterogeneous fluid collections, suggestive of liver abscesses. The biliary confluence was obliterated by a poorly defined hypoechoic lesion. (B) Abdominal CT portal venous phase confirmed the presence of an ill-defined hypovascular lesion at the confluence of the bile ducts, with expansile and infiltrative growth along the right anterior bile ducts and thickened portal track. A punctate calcification is identified in the mass (white arrowhead). (C) Abdominal MRI (T2-weighted image (WI) axial plane). The mass has intraductal growth, demonstrated by papillary projections (black arrow). (D) Abdominal MRI (diffusion WI; b=900). Restriction to diffusion is identified in the centre of the lesion and along the right anterior bile ducts, demonstrating intrabiliary growth. A liver abscess is also present in this image (asterisk). (E) Abdominal MRI (portal venous phase) demonstrates the same findings described on CT. Portal vein and branches were preserved. (F) Rectal MRI (T2-WI coronal) stages the rectal tumour that infiltrates the mesorectal fat on the right (white arrow) and abuts the internal sphincter but does not invade the intersphincteric plane. One suspicious lymph node was also identified (black arrowhead).

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Patient's perspective

(Daughter) I understand that my father was severely ill; however, I want to thank all the clinical care provided. This publication of scientific interest may help patients with the same disease in the future.

Learning points

- Despite the high resolution of current CT and MRI, the differential diagnosis between biliary metastases and cholangiocarcinoma is not possible, and biopsy is mandatory.
- The presence of an intraductal lesion with expansive growth associated with adjacent solid lesion and a history of colorectal carcinoma may favour intraductal metastasis rather than primary intraductal cholangiocarcinoma.

Despite advances in imaging techniques, particularly CT and MRI, differential diagnosis is difficult, and biopsy is necessary. Immunohistochemical staining with cytokeratin 7 (CK-7) and cytokeratin 20 (CK-20) allows the differential diagnosis between biliary metastases from colorectal carcinoma (CK-20 positive and CK-7 negative) and cholangiocarcinoma (CK-20 negative and CK-7 positive).[4 5]

Surgical resection is the only curative treatment and may be considered in oligometastatic patients. In these patients, due to intrabiliary growth, the risk of positive margins is high.[6] It is of paramount importance to communicate this finding to the surgical team. Our patient underwent bile drainage, but unfortunately died after complications caused by cholangitis and septic shock.

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ORCID iDs
Nuno Pereira da Silva http://orcid.org/0000-0001-7999-3110
Inês Abreu http://orcid.org/0000-0001-6616-4049
Luís Curvo-Semedo http://orcid.org/0000-0002-6441-227X
Paulo Donato http://orcid.org/0000-0003-1153-3112

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