Biliary metastasis of rectal carcinoma mimicking cholangiocarcinoma

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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 cholangiopancreatography demonstrated a hypovascular lesion with restriction to diffusion and infiltrative growth along the bile ducts associated with intra ductal 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, tests, prostate, pancreas, melanoma, lymphoma and colorectal carcinoma, the most common primary. Intrabiliary metastasis case reports are scarce in the medical literature, 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. 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, expan sile growth of the intraductal lesion and history of colorectal cancer. Intraspecial 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 papill ary growth and the history of extraocular neoplasia.
Despite advances in imaging techniques, particularly CT and MRI, differential diagnosis is difficult, and biopsy is mandatory. 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).

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. 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.

**Contributors**
NPS: Literature review. Drafted the manuscript. ICA: Images and conception. LS: Manuscript review. PJD: Editing and approval.

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