Abdominal ultrasound and its significant role in colon cancer. The advantage of its dynamic nature: using respiratory movements to assess neoplasia relations to adjacent organs

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CLINICAL CASE
A 58-year-old otherwise healthy man presented at the Emergency Room for a 24-hour long bloody diarrhoea and constitutional syndrome. Colonoscopy confirmed the presence of a colonic neoplasia. CT-scan reported an irregular surface and poorly delimited hypodensity of liver segment 5, next to the neoplasia, not being able to rule out malignant infiltration (FIGURE 1A, 1B). Abdominal ultrasound was used to assess liver infiltration by the tumour: it revealed a slightly heterogeneous hypoechoic circumferential thickening of the colon wall at the hepatic flexure, with destructuring of its layers, suggestive of neoplasia (FIGURE 1C, 1D). No pathological lymph nodes, nor liver metastases were found. A thin hyperechogenic layer (corresponding to omental fat) was identified between the liver and the neoplasia, except for a small area (10mm wide) where that layer could not be identified. Through the use of respiratory movements, in which the liver changes its position in the abdomen (unlike
the right colon) it was possible to assess how the liver surface glides freely over the neoplasia, demonstrating the absence of fixation between the structures (FIGURE 1E, 1F). Eventually, the patient underwent surgery, confirming the ultrasound findings.

DISCUSSION

CT-scan is the preferred image method to assess distant tumour extension in colorectal cancer (1). However, it may fail to determine the relationship between locally advanced tumours with surrounding structures. In this scenario ultrasound can be helpful due to its dynamic nature, allowing the organs to be assessed in different positions, using different degrees of pressure with the transducer, or during different respiratory manoeuvres (2, 3).

REFERENCES:


FIGURE 1. A and B: CT-scan, Liver segment 5 (L) with non-delimited hypodensity and superficial irregularity, just next to the colonic neoplasia (N), not being able to rule out malignant infiltration, A: Arterial phase, B: Portal phase. C and D: Abdominal ultrasound, B mode, Convex probe, 4MHz; Neoplasia of the colon on the hepatic flexure: a slightly heterogeneous hypoechoic circumferential thickening of the colon wall, layers cannot be identified. C, white arrows point the neoplasia. D, longitudinal view, liver segment 5 (L) lies next to the neoplasia (N). E and F: Abdominal ultrasound,
B mode, Linear probe, 10MHz, Longitudinal view. E: On deep inspiration the liver (L) lies over the neoplasia (N). F: On expiration the liver ascends towards the thorax sliding over the neoplasm until it disappears.