Hepatic caudate lobe neuroendocrine carcinoma diagnosed by EUS-guided core biopsy (with video)

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A 56-year-old man presented with upper abdominal pain. Upper gastrointestinal endoscopy was unremarkable. Imaging with computed tomography (CT) and magnetic resonance imaging [Figure 1] revealed a 2-cm lesion in the caudate lobe of the liver. CT-guided biopsy was unsuccessful as there was no safe window to access the lesion. The patient underwent the EUS-guided biopsy of the caudate lobe through a transduodenal approach using a 20-gauge Procore® biopsy needle (Cook Medical Inc., Winston-Salem, North Carolina, United States) [Video 1]. Abundant core tissue was obtained for histology [Figure 2], which demonstrated poorly differentiated carcinoma with high nucleus: cytoplasmic ratio, nuclear molding, conspicuous apoptotic bodies, and necrosis and showing synaptophysin positivity on immunohistochemistry, consistent with small cell carcinoma (poorly differentiated neuroendocrine carcinoma). The Ki-67 proliferation index was 90%. The tumor was strongly positive for thyroid transcription factor-1 on immunohistochemistry, suggesting a lung primary carcinoma needed to be excluded, followed by other potential sites before managing it as a solitary primary liver small cell carcinoma which is very rare.[1] He was referred to the medical oncologist for management.

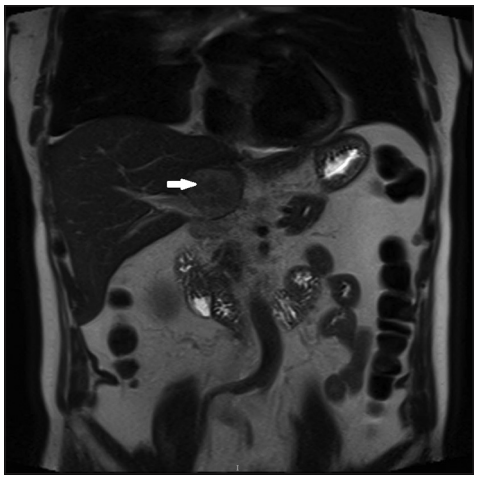

Figure 1. Magnetic resonance image of caudate lobe mass (arrow)

Although it may be difficult to access the caudate lobe from a percutaneous approach, it can be easily accessed and punctured under EUS guidance, a fact that non-EUS practitioners may not be aware of.[2,3] A dedicated 19-gauge biopsy needle has been shown to achieve a high yield of core tissue for histology.[4] The 20-gauge biopsy needle is less stiff than the 19-gauge needle, and thus facilitates the process of transduodenal puncture. Although cytology obtained

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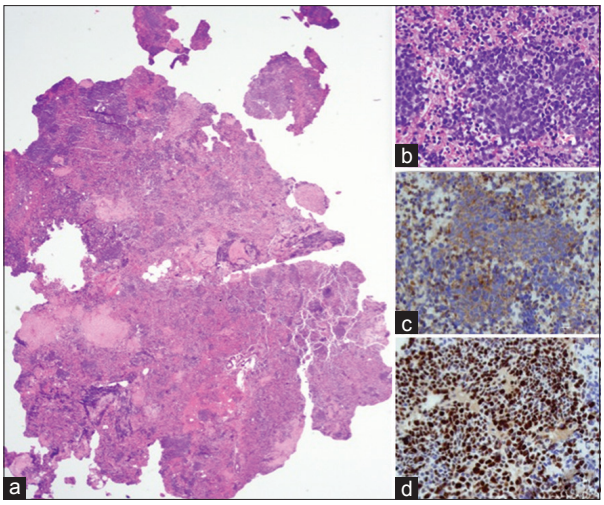

Figure 2. (a) H&E section (20x) showing a good quality biopsy with abundant tumour material. (b) Higher magnification (200x) showing small cell carcinoma characterized by high N:C ratio, nuclear molding, apoptotic bodies, necrosis and positive synaptophysin immunoreactivity (c, 200x). The Ki67 proliferation index is 90% (d, 200x).

by EUS-FNA may be adequate in making a diagnosis of malignancy, it will not be adequate for making a precise diagnosis as histology may be required for diagnostic immunohistochemical studies as in this case and would allow additional molecular testing if necessary. A recent study showed that EUS-guided biopsy may improve diagnostic yield when compared to EUS-guided aspiration, and provided qualitative information not reported on fine-needle aspiration, such as degree of differentiation in malignancy, metastatic origin, and rate of proliferation in neuroendocrine tumors.[5]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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