Porta hepatis schwannoma diagnosed by endoscopic ultrasound-guided fine-needle biopsy

A 30-year-old white woman was referred 5 months ago for evaluation of an isolated episode of moderate abdominal pain in the upper-right quadrant. An abdominal computed tomography scan revealed a heterogeneous low-attenuation tumor, measuring 4 cm in size in the porta hepatis, which was compressing the portal vein and touching the common bile duct (Fig. 1).

Sectorial endoscopic ultrasound (Olympus GF-UCT180 coupled to an ultrasound unit Olympus EU-ME1; Olympus America Inc., New York, USA) detected a well-circumscribed and hypoechoic mass with small Doppler signals in the porta hepatis, which measured 3.8 × 3.4 cm and was located between the portal vein and the left lobe of the liver (Fig. 2 a, b). Endoscopic ultrasound-guided fine-needle biopsy (EUS-FNB) was performed using a 19-gauge needle (EchoTip Ultra Echo-19; Cook Medical, Winston-Salem, USA) for four passes. A spindle cell tumor that was strongly immunoreactive for S-100 was found, defining the mass as a schwannoma (Fig. 3 a, b). Once detected by full laparotomy (Fig. 4), the tumor was successfully removed (Fig. 5 a, b) and the patient was completely asymptomatic 3 months after the surgery.

A schwannoma is a tumor that arises from neural crest-derived Schwann cells in the sheath of peripheral nerves [1]. The involvement of the porta hepatis by schwannomas is very rare, and only four cases have been reported in the literature, which were all confirmed only after surgical resection [2–5]. Ours is the first patient to be diagnosed before surgery by means of EUS-FNB of the lesion and a positive reaction for S-100 was found, defining the mass as a schwannoma (Fig. 3 a, b). Once detected by full laparotomy (Fig. 4), the tumor was successfully removed (Fig. 5 a, b) and the patient was completely asymptomatic 3 months after the surgery.

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EUS findings generally reveal a well-circumscribed hypoechoic mass. EUS-FNB of porta hepatis tumors is a valuable method for the preoperative diagnosis of schwannomas.

Competing interests: None
César V. Lopes1, Uirá F. Teixeira2, Fábio L. Waechter2, José A. Sampaio2, Antônio A. Hartmann3

1 Department of Gastroenterology and Digestive Endoscopy, Santa Casa Hospital, Porto Alegre, Brazil
2 Department of Gastrointestinal Surgery, Santa Casa Hospital/Federal University of Health Sciences of Porto Alegre (UFCSPA), Porto Alegre, Brazil
3 Department of Pathology, Santa Casa Hospital, Porto Alegre, Brazil

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Corresponding author
César V. Lopes, MD
Rua Prof. Cristiano Fischer 668/1001
C.E.P. 91.410-000
Porto Alegre-RS
Brazil
Fax: +55-51-33388054
drcvlopes@gmail.com

Fig. 3  Histopathological findings from the schwannoma found in the porta hepatis. a A cellular specimen shows large, cohesive groups of spindle cells with nuclear palisading (cell block, hematoxylin and eosin; original magnification × 40). b An immunohistochemical stain for S-100 shows diffuse nuclear and cytoplasmic staining (polyclonal S-100, original magnification × 400).

Fig. 4  A full laparotomy revealed the tumor behind the portal vein.

Fig. 5  a Portal vein completely free after resection of the tumor. b Macroscopic appearance of the cut surface of the resected tumor showing a 4-cm, yellow, firm, and encapsulated solid tumor.