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Case Report

CT of pancreatic schwannoma ☆,☆☆

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ABSTRACT

Schwannomas are a type of nerve sheath tumor formed by Schwann cells. They typically occur in the head and neck area, the trunk, and flexor surfaces of the upper and lower extremities. Schwannomas are often benign, and pancreatic schwannomas are extremely uncommon. Given the rarity of these tumors and their clinical similarity to other pancreatic lesions, however, pancreatic schwannomas are challenging to diagnose preoperatively. In this article, we report the case of a 69-year-old female who was diagnosed with a pancreatic schwannoma. We focus on optimizing diagnosis and management through the application of radiological imaging modalities, specifically computed tomography scans with cinematic rendering.

Introduction

Schwannomas are the most common type of benign peripheral nerve tumor in adults [1]. Arising from Schwann cells, these nerve sheath tumors typically present in the head, neck, and trunk areas, as well as the flexor surfaces of the upper and lower extremities [2]. However, despite being a very uncommon occurrence, with approximately 70 cases reported in the literature, schwannomas may also arise from the pancreas. Although rare, pancreatic schwannomas present a diagnostic challenge given their tendency to mimic other pancreatic lesions, including neuroendocrine tumors, pseudopapillary neoplasms, pseudocysts, and cystic neoplasms. In this article, we report a case of a 69-year-old female with a diagnosis of pancreatic schwannoma and discuss the imaging and pathological findings.

Case report

A 69-year-old female with a prior history of epigastric pain and chronic acid reflux symptoms presented to her local hospital. The patient reported having experienced an episode of melena and persistent abdominal pain radiating bilaterally to her lower quadrants over the previous year. A magnetic resonance imaging (MRI) scan showed a solid pancreatic body lesion anterior to the pancreatic duct without ductal dilation. An ensuing endoscopic ultrasound-guided fine needle

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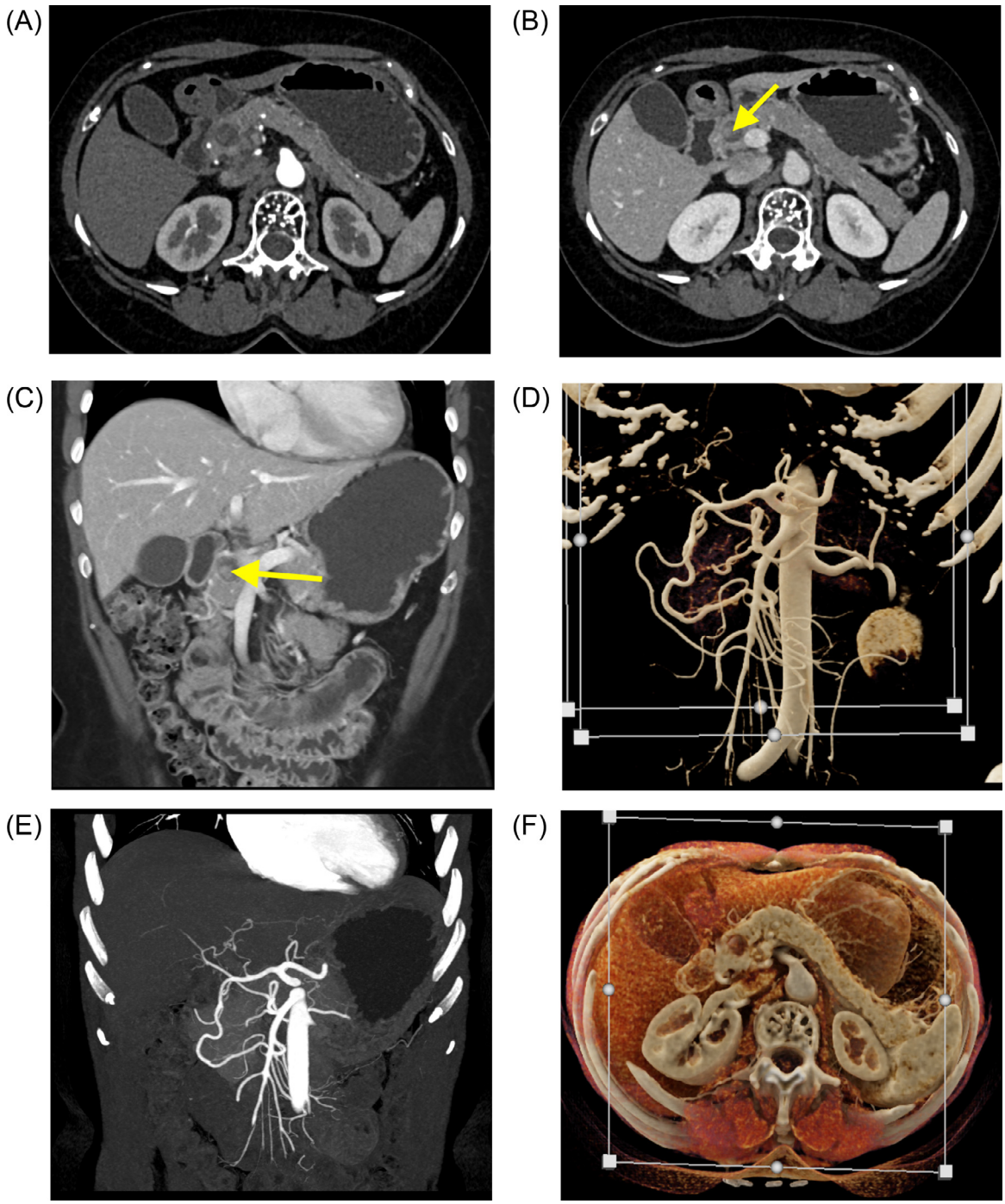

Fig 1 – (A-H): A 69-year-old female presented due to persistent abdominal pain radiating bilaterally to her lower quadrants. A chest computed tomography (CT) scan was performed for further evaluation. (A, B) Arterial and venous axial images demonstrate the 2 cm cystic mass in the head of the pancreas. The nodule within the mass is best seen on venous phase imaging (arrow). (C) Coronal venous phase images define the mass with solid nodule internally (arrow). (D, E) Angiographic mapping with cinematic rendering and maximum intensity projection (MIP) define the arterial maps without vessel encasement or neovascularity. (F-H) Cinematic rendering in arterial and venous phases define the sharp margins of the tumor without local invasion. The nodule is best defined on venous cinematic rendered images (arrow).

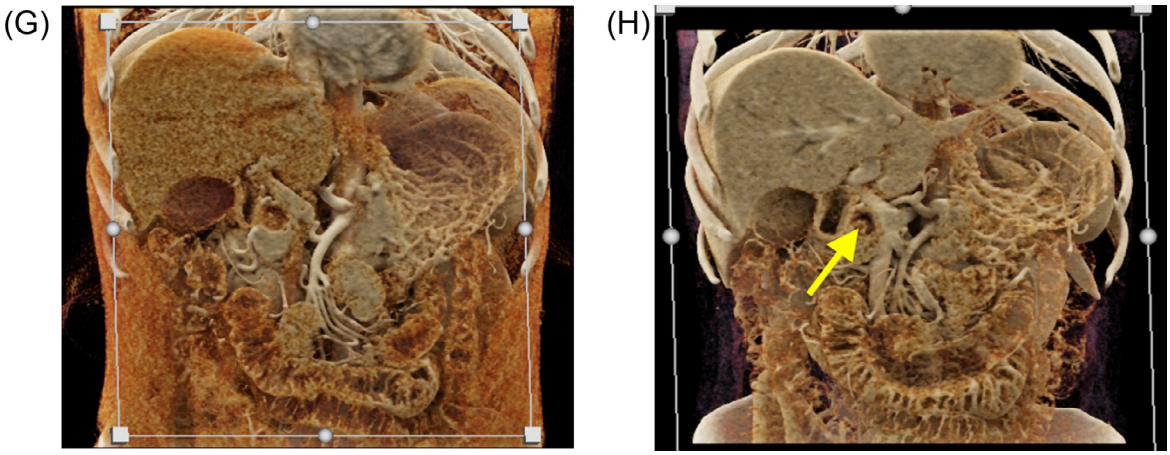

Fig 1 – Continued

aspiration (EUS-FNA) revealed Schwann cell proliferation, most consistent with pancreatic schwannoma. Immunohistochemistry stains were positive for SOX10 and S100, and negative for desmin, CD117, and CD34 with a Ki67 index of >1%. A follow-up computed tomography (CT) scan demonstrated a 1.6 cm x 1.6 cm mass lesion in the head of the pancreas, compatible with the biopsy-proven schwannoma. The lesion showed some internal enhancement from the arterial to venous phase especially well defined on the images with cinematic rendering (Fig. 1). Scans did not demonstrate any pancreatic ductal dilation, vascular involvement, or metastatic disease. The patient successfully underwent a robotic pancreatic tumor enucleation, after which surgical pathology revealed a 1.9 cm schwannoma, and the hepatic artery lymph node was negative for tumor. Postoperatively, the patient presented with pancreatic fluid collection along the anterior portion of the pancreas managed with an abscess drain, which was ultimately removed, and the patient recovered well.

Discussion

Here we review a case of pancreatic schwannoma, an extremely rare type of pancreatic tumor. Schwannomas, the most common type of peripheral nerve sheath tumor, arise from Schwann cells, which protect nerve cells of the nervous system [1]. These encapsulated tumors of the nerve sheath are usually found in the head and neck, trunk, and flexor area of the upper and lower extremities [2]. Furthermore, although rare, these tumors may also be found in the pancreas, with pancreatic schwannomas constituting 1% of all schwannomas [3,4]. Most schwannomas, including those in the pancreas, are benign; however, given the potential for malignant degeneration, proper and efficient diagnosis is critical for adequate patient management and favorable outcomes.

We report a 69-year-old female with a history of chronic acid reflux symptoms and epigastric pain who presented to her local hospital following a year-long bout of abdominal pain radiating bilaterally to her lower quadrants. Pancreatic schwannomas, which have a slight female predominance and are typically diagnosed at a mean age of 55, commonly present nonspecific symptoms, including weight loss, nausea, dyspepsia, and generalized abdominal pain, with the latter being the most common [5–7]. Following MRI revelation of a pancreatic lesion, the patient underwent EUS-guided FNA, after which she was diagnosed with a pancreatic schwannoma given Schwann cell proliferation. Immunohistochemistry revealed strong positive staining for S100, and negative for CD117, CD56, and desmin, most consistent with a schwannoma diagnosis [8]. However, the use of EUS-FNA as a means of obtaining a preoperative diagnosis of pancreatic schwannomas is controversial due to the associated high incidence of false-negative findings and underwhelming 52.9% diagnostic rate [5,9]. As a result, the patient underwent CT imaging, which revealed a 1.6 cm x 1.6 cm hypodense lesion in the head of the pancreas, the most commonly involved site in pancreatic schwannomas. Despite not being sufficient to differentiate between schwannomas and other pancreatic tumors, imaging modalities, CT in particular, are critical for lesion identification and preoperative planning. CT features of pancreatic schwannomas commonly include hypoattenuation, circumscribed, and intense enhancement, with smaller lesions usually demonstrating homogenous enhancement, while larger ones show heterogenous [10]. For example, in Ntafam et al [5] we see CT images of a 2.5 cm x 2.0 cm well circumscribed, hypodense pancreatic schwannoma lesion in the neck of the pancreas. Ultimately, the patient underwent enucleation, the preferred course of action for pancreatic schwannomas given the tumor's benign nature.

Author contribution

The authors contributed equally to the writing of this manuscript.

Patient consent

The patient reported in the manuscript signed the informed consent/authorization for participation in research which

includes the permission to use data collected in future research projects including presented case details and images used in this manuscript.

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