The spectrum of confocal endomicroscopy findings in a cystic neuroendocrine tumor of the pancreas

A 60-year-old man was found to have an incidental pancreatic cystic lesion during surveillance magnetic resonance imaging (MRI) for a known left renal lesion. Endoscopic ultrasound (EUS) revealed a cystic lesion (2.6 × 2.0 cm) with a single thick septum in the pancreatic tail (▶ Video 1). Needle-based confocal laser endomicroscopy (nCLE) of this lesion was performed with an AQ-Flex-19 miniprobe (Cellvizio; Mauna Kea Technologies Inc., Paris, France). This demonstrated nests of cells surrounded by fibrous septa and vascularity, suggestive of a cystic pancreatic neuroendocrine tumor (PNET) (▶ Fig. 1).

A pattern of vacuolization was also observed (▶ Fig. 2 a; ▶ Video 1). Fine needle aspiration (FNA) with immunostaining of the sample obtained confirmed the diagnosis of a well-differentiated PNET. The patient underwent distal pancreatectomy and splenectomy. Histopathology of the surgical specimen showed a well-circumscribed mixed solid–cystic lesion (▶ Fig. 3 a); synaptophysin immunostaining was reactive and chromatin demonstrated a salt-and-pepper pattern, consistent with a well-differentiated PNET (▶ Fig. 3 b). Additionally, the tumor cells contained hyaline globules of varying sizes within the cytoplasm (▶ Fig. 2 b). This finding correlated with the vacuolization image pattern seen on nCLE. The presence of these globules has been described in PNETs and solid pseudopapillary tumors, with the descriptive appearance of cytoplasmic vacuolation [1, 2]. A similar pattern has been attributed to the presence of cytoplasmic lipid, which is more common in cystic NETs [3]. Napoleon et al. first described the nCLE criteria of cystic PNETs, which have been validated in resected ex vivo lesions and by independent external observers [4]. The EUS-nCLE findings so far described in cystic PNETs include a trabecular network of dark cells with surrounding fibrosis and vascularity [4, 5]. This case presents a unique recurring feature of vacuolization that correlated with a comparable histopathological pattern. This spectrum of nCLE image patterns for cystic NETs can further assist in the differentiation of pancreatic cystic lesions.

Competing interests

None

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