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. 2a; ▶ Video 1). Fine needle aspiration (FNA) with immunostaining of the sample obtained confirmed the diagnosis of a well-differentiated PNET. The presence of these globules has been described in PNETs and solid pseudopapillary tumors, with the descriptive appearance of cytoplasmic vacuolization [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.
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Fig. 2 The pancreatic cystic lesion seen on: a endoscopic ultrasound needle-based confocal laser endomicroscopy showing a unique pattern of vacuolization intermixed with dark nests of cells; b hematoxylin and eosin staining of the resected specimen (magnification ×400) showing intracytoplasmic globules (arrows) within the cords of tumor cells. Salt-and-pepper type chromatin, characteristic of neuroendocrine neoplasms is also seen.

Fig. 3 Appearance of the resected specimen: a on gross examination, showing a pancreatic tail mass consisting of collapsed cystic areas (asterisks) not in communication with the pancreatic duct (arrow); b on immunostaining with synaptophysin, showing diffuse reactivity of the tumor cells, supporting the diagnosis of a well-differentiated neuroendocrine tumor. Chromogranin was also reactive (not shown); Ki67 was 3 % and zero mitoses were seen per 10 high-power fields, in keeping with a WHO grade 2 neuroendocrine tumor.

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