

Endosonography and Confocal Endomicroscopy of Primary Keratinizing Squamous Cell Carcinoma of the Pancreas

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CASE REPORT

A 79-year-old woman presented with abdominal discomfort and unintentional weight loss. A computed tomography scan demonstrated a 7-cm complex pancreatic cystic lesion (PCL) along with multiple hepatic cystic lesions (Figure 1). Endoscopic ultrasound (EUS) demonstrated a 7.1 cm x 6.7 cm anechoic cystic lesion with an irregularly thick wall and multiple mural nodules in the pancreatic body without obvious communication with the main pancreatic duct (Figure 2). Multiple cysts were also found in the liver, with the largest measuring 25 mm x 20 mm. Given the size and imaging findings of the PCL, a broad differential including mucinous cystic neoplasm, serous cystadenoma, or solid pseudopapillary neoplasms was considered. Less concerning was intrapapillary mucinous neoplasm, as there was no pancreatic duct dilatation or communication with the main pancreatic duct.

On protocol, EUS-guided needle-based confocal laser endomicroscopy (nCLE) with an AQ-Flex 19 miniprobe (Cellvizio, Mauna Kea Technologies, Paris, France) revealed large cells of unequal shapes and sizes ($>20\ \mu\text{m}$), suggestive of a malignant process (Figure 3). Fine-needle aspiration confirmed a diagnosis of pancreatic keratinizing squamous cell carcinoma (SCC) metastatic to liver with demonstration of irregular spindle-like cells, hyperchromatic cells, and dense keratin material from both the primary pancreatic and metastatic liver lesions (Figure 4). The patient did not wish to proceed with palliative chemotherapy and was transitioned to hospice care with symptom management.



Figure 1. Computed tomography showing a 7-cm complex PCL with multiple hepatic cystic lesions.

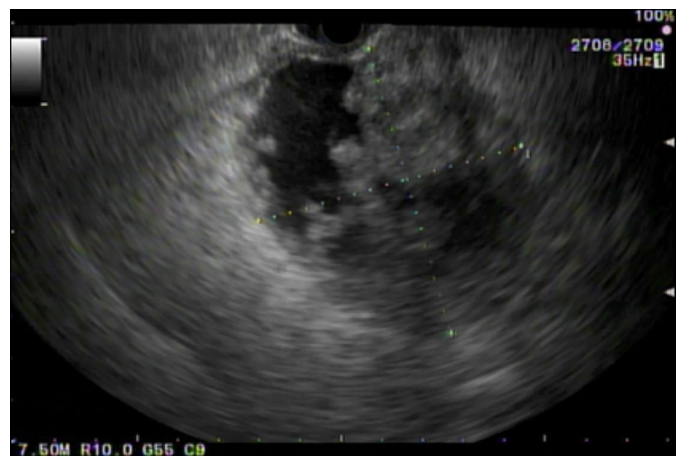


Figure 2. Endoscopic ultrasound showing a 7.1 x 6.7 cm anechoic cystic lesion with an irregularly thick wall and multiple mural nodules in the pancreatic body. No pancreatic duct dilatation or obvious communication with the main pancreatic duct was noted.

ACG Case Rep J 2017;4:e17. doi:10.14309/crj.2017.17. Published online: February 1, 2017.

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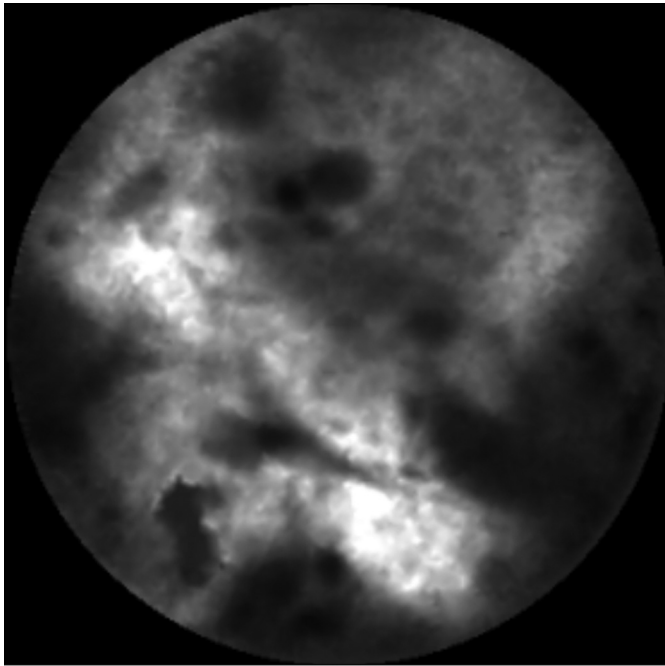


Figure 3. In vivo needle-based confocal laser endomicroscopy (nCLE) with large cells of unequal shapes and sizes (>20 μm) suggestive of a malignant process.

Outside of the rare diagnosis of pancreatic SCC, this case is unique as it was the first documented utilization of nCLE for visualization of this specific malignancy. Primary pancreatic SCC is diagnosed infrequently, with a reported incidence of 0.5–3.5%.¹ Surgical removal should be considered in patients with tumor spread, while there are several chemotherapy options, including 5-fluorouracil or cisplatin, as a second-line therapy.² Moreover, SCC has been shown to have a poor prognosis with an estimated 7-month median survival even after curative resection.³ The combination of increased incidence and poor prognosis indicates the importance of early recognition that may be achieved with nCLE. There have been 3 major trials addressing feasibility, test characteristics, and complications of nCLE. The overall risk of post-procedural acute pancreatitis from the 3 major trials utilizing nCLE for PCLs was 4.3%.^{4–6} The detection of specific patterns diagnostic of the major types of PCLs has been shown to have high specificity, although instances of confirmatory surgical histopathology are low (~25%). We have recently demonstrated, however, consistent in vivo patterns in ex vivo surgical resections.^{7,8} This adds to the growing repository of intracystic nCLE image patterns in the diagnosis of PCLs.

DISCLOSURES

Author contributions: RM Modi and SG Krishna wrote the manuscript. AK Kamboj edited and approved the manuscript. R. Shen provided pathological images. SG Krishna is the article guarantor.

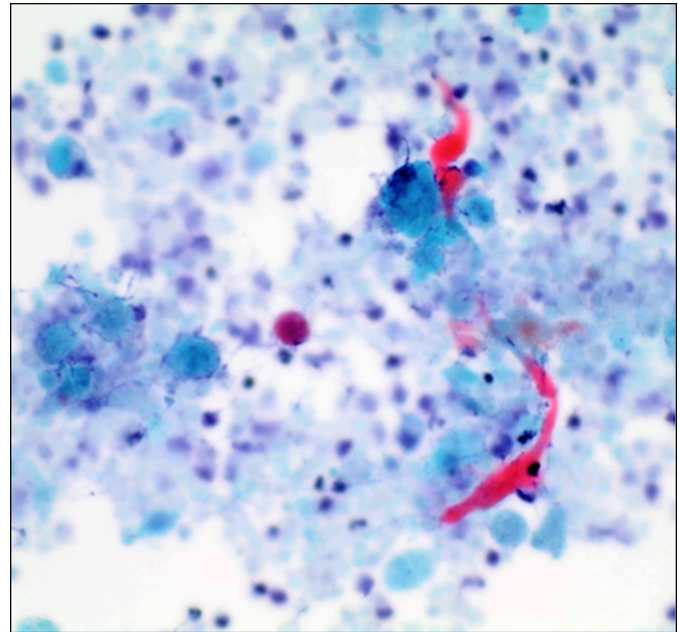


Figure 4. A pancreas squamous cell carcinoma with a Papanicolaou stain (magnification 400x) showing 2 irregular spindle-like cells with heavy keratinized cytoplasm, one of which was hyperchromatic on the background of necrotic cellular debris and had dense blue keratin material.

Financial disclosure: This study was funded by the ACG pilot research grant to SG Krishna (ClinicalTrials.gov NCT02516488).

Informed consent was obtained for this case report.

Received July 24, 2016; Accepted September 30, 2016

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