Fibrosing Pancreatitis Misdiagnosed as Ductal Adenocarcinoma by Endoscopic Ultrasound in a Pediatric Patient with a Pancreatic Mass

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INTRODUCTION

Pancreatic cancer is very rare in the pediatric population. Pancreatic ductal adenocarcinoma (PDA) is the most common subtype in adults, but is rare in children.

We report a case of a benign pancreatic head mass in a pediatric patient first diagnosed as PDA on endoscopic ultrasound (EUS) guided biopsy.

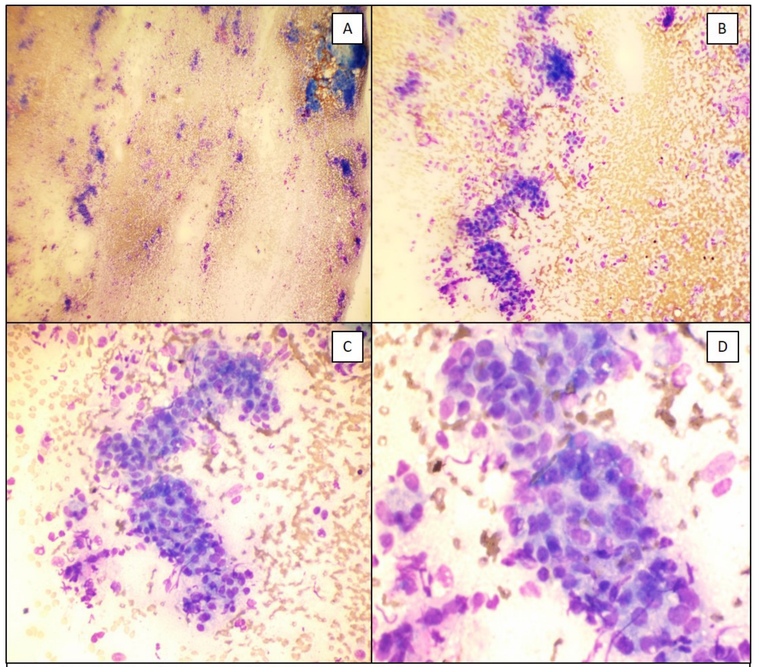

Figure 2: Initial cytopathology from EUS-FNA of pancreatic head mass
A. Diff-Quik staining at low magnification, 4x. **B.** Smear is cellular and well preserved with sheets, clusters and single malignant cells, 10x. **C.** Cells have crowded nuclei, 20x. **D.** Malignant cells exhibit loss of polarity, irregular nuclear contours, finely granular chromatin and some with prominent nucleoli, 40x . Based on cytomorphological features, the mass is a well differentiated ductal adenocarcinoma of pancreatic head.
Note: The review of this cytopathology by a tertiary cancer institution was inconsistent with malignancy. The glandular cells had mild cytologic atypia, and the acinar cells remained lobular in configuration. Although there was some higher nuclear to cytoplasmic ratio, no absolute nuclear enlargement was noticed.

CASE DESCRIPTION

A 13-year-old male was admitted for severe acute intermittent epigastric pain. Labs showed elevated transaminases and gamma-glutamyl transferase. Abdominal ultrasound demonstrated a solid mass-like lesion of 3 cm at the pancreatic head with common bile duct dilatation. Magnetic resonance cholangiopancreatography confirmed this finding.

On hospital day 3, the patient underwent EUS and a fine needle biopsy was performed from the pancreatic head mass. Cytology diagnosis was well differentiated ductal adenocarcinoma. Serum carcinoembryonic antigen, carbohydrate antigen 19-9, and alpha-fetoprotein were all normal.

The patient underwent elective Whipple procedure. Surprisingly, no malignancy was identified on the surgical specimen. The histology supported a diagnosis of localized fibrosing pancreatitis with high background of immunoglobulin G4 with interlobular pattern. EUS cytology was reviewed at a tertiary cancer center. It was then reported as acute on chronic inflammation without malignancy.

DISCUSSION/CONCLUSION

The false positive rate for diagnosing PDA using EUS of solid pancreatic lesions is less than 1% in adults. It may be higher in pediatrics due to the very low prevalence of PDA. Surgical specimens are often diagnosed as chronic fibrosing pancreatitis, chronic pancreatitis, or focal active pancreatitis after Whipple procedure.

Our case highlights the importance of additional review of cytology at a more specialized cancer institution before surgical resection of a pediatric pancreatic head mass.

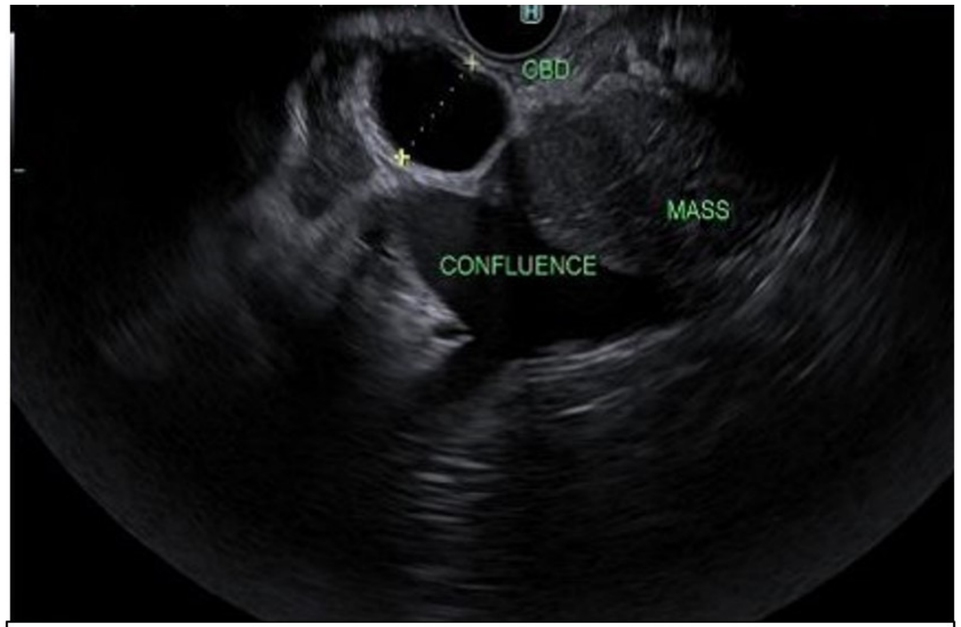

Figure 1: A parenchymal mass (2.2 x 1.8 cm) was noted in the head of the pancreas by endoscopic ultrasound (EUS) adjacent to the portal confluence, and the common bile duct was dilated to 12.8 mm (marked by yellow cross signs).