

CASE REPORT

Metastatic Lymph Node Impostor in Pancreatic Cystadenocarcinoma

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ABSTRACT

Context Lymph node involvement in pancreatic cancer is a predictor of poor patient long-term survival. The detection of multiple metastatic peri-pancreatic nodes by EUS-FNA may dissuade the surgeon from undertaking a curative pancreatic resection.

Case report We report an interesting case of a man with chronic lymphocytic leukemia, who presented with the diagnostic problem of a pancreatic solid-cystic lesion and multiple malignant-looking peri-pancreatic lymphadenopathy on EUS. EUS-FNA yielded chronic lymphocytic leukaemia involvement in the peri-pancreatic lymph nodes and a markedly elevated CEA in the cystic fluid. The absence of adenocarcinoma involvement of the lymph nodes prompted surgery on the pancreatic lesion with a curative intent. Pancreatic mucinous cystadenocarcinoma was diagnosed and a sub-total pancreatectomy was performed with clear resection margins. All 30 resected peri-pancreatic lymph nodes showed chronic lymphocytic leukemia involvement only.

Conclusions This case illustrates that abnormal lymphadenopathy adjacent to a primary pancreatic lesion may not necessarily be due to the latter. Systemic lymphoproliferative disease, as in this case, can masquerade as metastatic adenocarcinoma lymph nodes on EUS. EUS-FNA is useful in diagnosing lymphoproliferative disease.

INTRODUCTION

Lymph node metastases occur commonly in patients with pancreatic cancer, even in cases with small lesions [1]. The presence of such nodes may sway management away from surgery. Lymphadenopathy (with the criteria of circularity, homogeneity, relative hypoechointensity, size greater than 1 cm, and proximity to the primary lesion) on EUS associated with cystic lesions of the pancreas, in particular may not be a significant predictor of malignancy [2]. The situation is further complicated in the presence of co-pathology. We describe a case of mucinous pancreatic cystadenocarcinoma and peri-pancreatic lymphadenopathy with interesting findings.

CASE REPORT

A 74-year-old man with a history of chronic lymphocytic leukemia and previous squamous cell carcinoma of the tongue, was admitted with the sudden onset of right-sided, lower abdominal pain. The abdominal examination revealed moderate tenderness in the right lower quadrant with no evidence of peritonism. The rectal examination revealed hard feces. The full blood examination which was consistent with chronic lymphocytic leukemia, showed the following results: hemoglobin 12.1 g/dL (reference range: 12.0-16.0 g/dL), white cell 26 x10⁹/L (reference range 4.0-11.0 x10⁹/L), lymphocytes 18 x10⁹/L (reference range: 1.2-3.3 x10⁹/L),

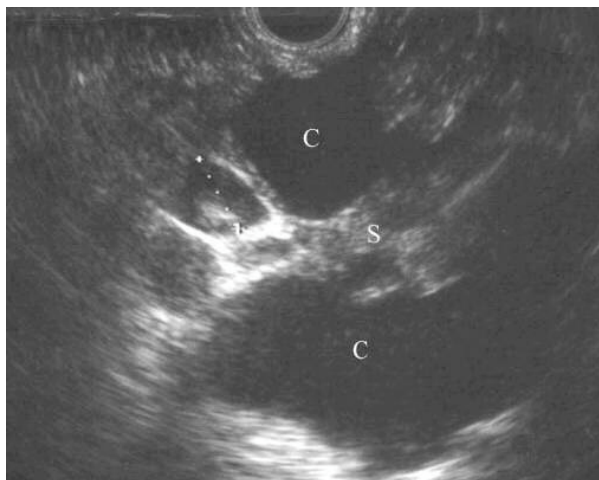


Figure 1. Linear EUS showing the pancreatic cystic (C) lesion with a solid (S) component and a 10 mm adjacent lymph node (dotted line) with a hyperechoic center.

platelet $146 \times 10^9/L$ (reference range: $150-400 \times 10^9/L$), blood film-mature lymphocytosis. Serum amylase was normal. A CT scan of the abdomen showed fecal loading throughout the colon but no other abnormality in the ileocecal region. An incidental 4 cm mass in the tail of the pancreas was noted with no peri-pancreatic lymphadenopathy. He was treated empirically for constipation with phosphate enema, with resolution of symptoms. A colonoscopy was normal.

Prior to presentation, he was on regular follow-up after resection of a squamous cell carcinoma of the tongue eight years ago. There had been no history of recurrence. Chronic lymphocytic leukemia was diagnosed six years before and he had finished a course of treatment with chlorambucil and prednisolone four months preceding admission. He had enjoyed relatively good health and had not lost any weight prior to this presentation.

The patient underwent a linear EUS for further evaluation of the pancreatic mass. A 4 cm cyst with a solid component and adjacent lymph nodes were noted in the tail of the pancreas (Figures 1 and 2). There was no discernible cyst wall and no vascular invasion. Of six peri-cystic lymph nodes seen (sizes ranging from 9 to 11 mm), all were rounded, had sharp borders and were generally hypoechoic apart from two with

distinct hyperechoic linear centres. Two lymph nodes with hypoechoic centers were aspirated using a 22-gauge needle (EchoTip Ultrasound Needle, Wilson-Cook Medical Inc., Winston-Salem, NC, USA) for cytological analysis under EUS guidance. Two needle passes were made into the center of each of the two lymph nodes with 10 mL of syringe suction. EUS-FNA of the cyst was also performed with a separate 19-gauge needle (EchoTip Ultrasound Needle, Wilson-Cook Medical Inc., Winston-Salem, NC, USA) under antibiotic prophylaxis. A single pass was initially made into the center of the cyst for fluid aspiration and later, the solid component of the cyst was targeted. Eleven mL of mildly viscous clear fluid was aspirated and sent for CEA and amylase level quantification. Cytological smears and washings in formalin (for cell block and cytopsin analysis) were prepared. The cyst FNA showed amorphous proteinaceous material consistent with mucin and a few slightly atypical epithelial cells, but the latter were deemed non-diagnostic. The lymph node FNA showed closely packed lymphocytes which looked normal morphologically under microscopy, but the immunohistochemistry stained strongly for B-cells (CD79a and CD20) as well as CD5 and CD23 (Figure 3), consistent with chronic lymphocytic leukemia. There was no definite cytopathological evidence of adenocarcinoma in either the cyst or lymph node on FNA.



Figure 2. Linear EUS showing the close proximity of the lymph nodes (arrowheads) to the cyst (C).

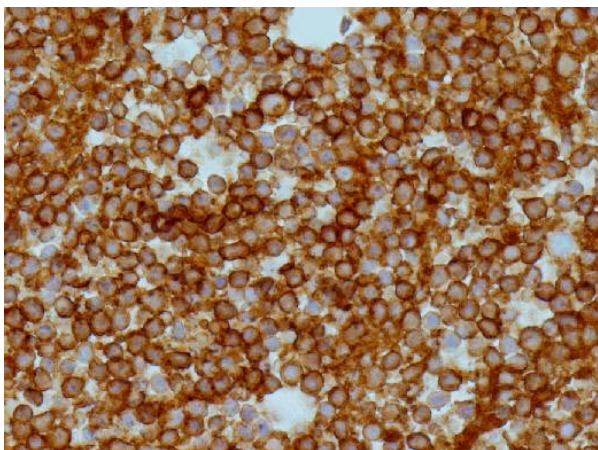


Figure 3. Section of the cell-block from a lymph node FNA showing a monotonous population of positive CD23 staining lymphocytes (Immunostain, magnification x40).

The biochemical analysis of the cyst fluid was as follows: CEA 4,147 $\mu\text{g/L}$, amylase 10,278 U/L. The high CEA, suspicious EUS morphology, the presence of mucin on FNA, and FNA-negative nodes prompted surgical exploration.

A sub-total pancreatectomy with removal of the pancreatic tail lesion and the adjacent lymph nodes was performed. Histological analysis revealed a 4 cm mucinous cystadenocarcinoma (Figure 4) with clear margins of resection. All 30 resected lymph nodes (18 superior pancreatic, 6 inferior pancreatic, 5 perihilar and 1 omental) showed abnormal architecture with replacement by a monotonous population of small lymphoid cells, consistent with chronic lymphocytic leukemia. Immunochemical staining of the resected nodes was similar to that of the FNA nodes. The final pathological diagnosis was R0 resection of a T2 N0 M0 (TNM classification, UICC) [3] mucinous cystadenocarcinoma of the pancreas with co-existing chronic lymphocytic leukemia lymph nodes.

The patient recovered uneventfully from the operation and was referred back to the hematological unit for follow-up of the chronic lymphocytic leukemia.

DISCUSSION

Although the possibility of squamous cell carcinoma metastasis (in view of the patient's past history) was entertained, this was thought unlikely because of the cystic nature of the pancreatic mass and its location in the tail of the pancreas. Metastasis to the pancreas is generally uncommon, with renal cell carcinoma amongst the commonest primaries [4, 5].

Chronic lymphocytic leukemia is a systemic disease that may affect any lymphatic organ in the body. The index patient did not have any palpable cutaneous lymphadenopathy. Chronic lymphocytic leukemia had selectively involved the bone marrow and retroperitoneal nodes, with the latter masquerading as metastatic pancreatic cancer nodes.

The usefulness of FNA in the diagnosis of lymphoproliferative disease is well recognized [6, 7]. Recent developments in flow cytometry and immunocytochemistry may have increased the diagnostic yield of FNA after initial doubts regarding the ability of FNA in subclassifying certain types of lymphoproliferative disease [8]. The success rate of percutaneous FNA cytology ranges

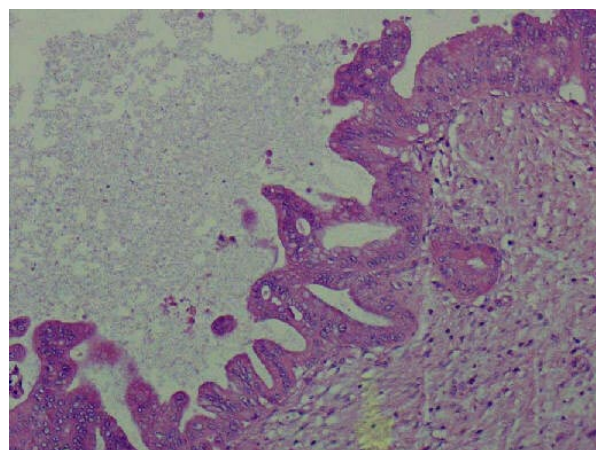


Figure 4. Pancreatic mucinous cystadenocarcinoma with atypical glandular epithelium and mucin in the cystic lumen (hematoxylin and eosin stain, magnification X10).

from 80-90% in the diagnosis of non-Hodgkin's lymphoma and from 67.5-86% in its subtyping [6].

EUS-FNA is a safe and an effective way of obtaining cytological specimen from otherwise difficult-to-access peri-intestinal lymph nodes [9, 10]. It is usually done as part of the staging process, a classic example being esophageal cancer and celiac nodes. Studies have also shown EUS-FNA to be superior to EUS alone in diagnosing malignant lymph nodes [11, 12]. The use of EUS-FNA in diagnosing metastatic lymph nodes from lymphoproliferative disease is not as extensive as for adenocarcinoma. In a study of 38 patients with suspected gastrointestinal lymphoma and enlarged lymph nodes, the overall sensitivity, specificity and accuracy of EUS-FNA cytology with cytometry/immunocytochemistry were 74%, 93%, and 81%, respectively [13]. The same study also concluded that the yield of EUS-FNA was improved by the selective use of cytometry/immunocytochemistry compared to those done without.

Vascular invasion is the commonest factor used in determining the resectability of pancreatic malignancy. Lymph node involvement in pancreatic cancer is a predictor of poor patient long-term survival [14, 15, 16]. Controversy persists in the Western medical literature as to whether radical lymphadenectomy improves patient survival. The detection of multiple metastatic peri-pancreatic nodes by EUS-FNA may dissuade the surgeon from undertaking a curative pancreatic resection.

CONCLUSION

This case illustrates that lymphadenopathy, despite being "malignant"-looking and in close proximity, may not necessarily be due to metastatic spread from the primary lesion. Concomitant lymphoproliferative disease may masquerade as metastatic lymphadenopathy.

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