

## Pancreatic pseudocyst owing to a lymph node metastasis: a case report

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### Abstract

A 69-year-old female with recurrent esophageal cancer and multiple lymph node metastases and vomiting was admitted to our hospital. A computed tomography (CT) scan showed a lymph node metastasis that had become cystic and enlarged, and was suggested to be the cause of the vomiting. Endoscopic ultrasound-guided fine-needle aspiration showed squamous cell carcinoma and elevated amylase in the cystic tumor. Although a rare cause of pancreatic pseudocyst, lymph node metastasis from an advanced cancer should be considered.

### Introduction

Pancreatic pseudocysts are best defined as localized fluid collections rich in amylase or other pancreatic enzymes, with a nonepithelialized wall consisting of fibrous and granulation tissue.<sup>1</sup> Pseudocysts usually occur several weeks following the onset of acute pancreatitis. The pathogenesis of pseudocysts is thought to stem from disruptions of the pancreatic duct, mainly owing to pancreatitis and extravasations of enzymatic material. Here we describe a case of a pancreatic pseudocyst as a result of a lymph node metastasis from esophageal cancer and its successful management with endoscopic drainage.

### Case Report

A 69-year-old female with recurrent esophageal squamous cell cancer was referred to our hospital. She underwent an esophagectomy in January 2008 and had a histological diagnosis of International Union Against Cancer (UICC) stage II. After 12 months, a computed tomography (CT) scan revealed a liver metastasis and multiple lymph node metastases. She received two doses of systemic chemotherapy with 5-fluorouracil and cisplatin. However, she experienced left hemi-

plegia for one week in March 2009 and was referred to our hospital. A follow-up CT scan showed multiple metastases of the cervical lymph node (Figure 1A), mediastinal lymph node (Figure 1B), and para-aortic lymph node (Figure 1C), as well as a liver metastasis, all of which were enlarged compared with those observed on the CT scan obtained prior to chemotherapy. Magnetic resonance imaging (MRI) of the brain revealed one brain metastasis. Radiotherapy for the brain metastasis and chemotherapy with weekly paclitaxel were initiated. Her hemiplegia improved with radiotherapy. After six doses of paclitaxel, apparent shrinkage was seen in the cervical and mediastinal lymph node metastases (Figure 1D, E). However, the para-aortic lymph node metastasis became cystic and enlarged (Figure 1F). After 12 doses of chemotherapy, the patient was admitted to the hospital with frequent vomiting and dyspnea. A chest X-ray showed consolidation of the right lower lobe, which was suggestive of aspiration pneumonia. She was treated with antibiotics, and a nasogastric tube was inserted to alleviate her frequent vomiting. A CT scan showed that her stomach was compressed by the further enlarged cystic tumor from the para-aortic lymph node metastasis (Figure 2A). The metastases at the other sites maintained their reduced size. A contrast study showed complete occlusion of the stomach (Figure 2B).

Endoscopic ultrasound-guided fine-needle aspiration was performed, and a total of 300 mL of brownish fluid was aspirated. Results of the fluid analysis were as follows: protein, 2.3 g/dL; sodium, 137 mEq/L; potassium, 4.0 mEq/L; total bilirubin, 1.3 mg/dL; amylase, 11836 U/L; pancreatic isotype of amylase, 11310 U/L; lactate dehydrogenase, 1180 U/L; squamous cell carcinoma antigen, 202.4

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Key words: endoscopic drainage, esophageal cancer, pancreatic pseudocyst.

Contributions: KS was responsible primarily for the care for the patient and discussed her case with KH and YS. They worked closely together in writing this report.

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ng/mL; carcinoembryonic antigen, 161.4 ng/mL; and carbohydrate antigen 19-9, 3840 U/mL. Based on the elevated amylase in the fluid, a pancreatic pseudocyst was suspected. Cytological analysis of the fluid specimen showed the presence of malignant cells that were similar to those in the patient's previous surgical specimen of esophageal cancer. Endoscopic retrograde cholangiopancreatography showed a narrow fistula that connected the cystic lymph node (pseudocyst) and the pancreatic duct (Figure 3).

Based on these data, we diagnosed the patient with a pancreatic pseudocyst as a

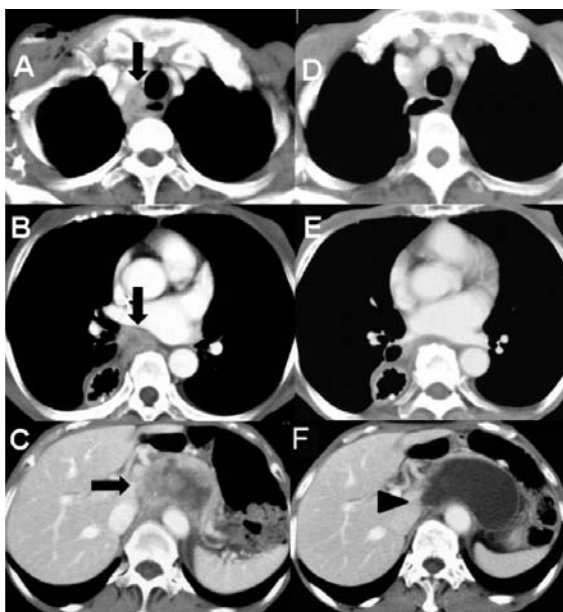


Figure 1. A computed tomography scan before chemotherapy showed multiple metastases of the cervical lymph node (A, arrow), mediastinal lymph node (B, arrow), and para-aortic lymph node (C, arrow). A computed tomography scan after chemotherapy showed apparent shrinkage in the cervical lymph node metastases (D), and mediastinal lymph node (E). However, the para-aortic lymph node metastasis became cystic and enlarged (F, arrowhead).

result of a lymph node metastasis that was connected to the pancreatic duct. Fluid re-accumulation was detected by abdominal ultrasonography one week later, and endoscopic cystoduodenostomy was performed successfully (Figure 4). Re-accumulation of fluid was not observed, and sufficient oral intake was preserved for the next three months. However, the patient was re-admitted with a decreased level of consciousness owing to multiple brain metastases. Whole brain irradiation was performed, but she passed away in October 2009.

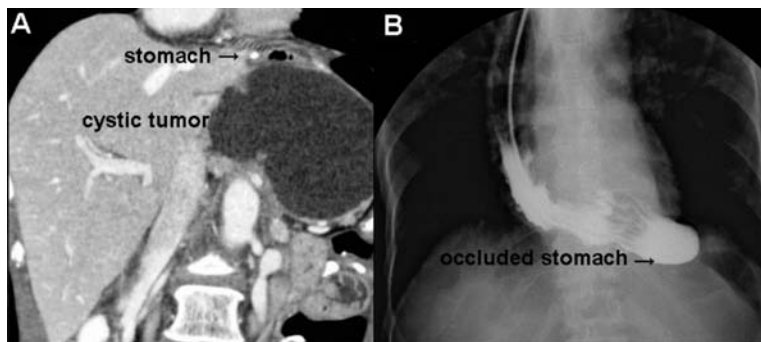


Figure 2. (A) A computed tomography scan showed that the stomach of the patient was compressed by the enlarged cystic tumor. (B) A contrast study showed complete occlusion of the stomach.

## Discussion

To the best of our knowledge this is the first report of a patient with a complication of a pancreatic pseudocyst owing to a lymph node metastasis from advanced gastrointestinal cancer. Our case suggests that a pancreatic pseudocyst may occur not only following pancreatitis but also as a result of other mechanisms that cause disruption of the pancreatic duct. Endoscopic retrograde cholangiopancreatography and fluid analysis might be important for the diagnosis of a pancreatic pseudocyst, as performed in our case. The pancreatic cyst in our patient had a high amylase level, which is an indication of pancreatic pseudocysts. However, malignant cells should not be present in a pancreatic pseudocyst. The presence of malignant cells in the aspirated fluid from the cyst in our patient is a result of the malignant lymph node involvement.

Several treatment options are available for symptomatic pseudocysts, although optimal management is controversial still.<sup>2,4</sup> Surgical internal drainage remains an option and is the procedure of choice for pseudocysts that are infected or complicated or that have a mature wall. However, since this patient had advanced esophageal cancer with multiple lymph node and brain metastases, we did not choose surgery. Endoscopic cystogastrostomy or cystoduodenostomy is reported to be safe and effective in the management of symptomatic pancreatic pseudocysts.<sup>4</sup> The endoscopic approach was feasible even in our patient with advanced cancer and poor performance status.

In summary, this case was informative because it demonstrated the following: (i) pancreatic pseudocysts may occur as a result of lymph node metastases from advanced cancer;

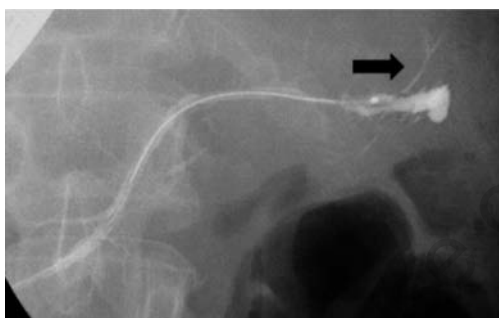


Figure 3. Endoscopic retrograde cholangiopancreatography showed a narrow fistula that connected the cystic lymph node (pseudocyst) and the pancreatic duct (arrow).



Figure 4. A computed tomography scan after endoscopic cystoduodenostomy. The cystic tumor was reduced in size successfully.

(ii) endoscopic drainage was feasible and effective for achieving an apparent symptomatic improvement, even in this patient with advanced cancer and poor performance status.

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