

## Cystic Lymphoepithelial Lesions of the Pancreas and Peripancreatic Region: Report of Two Cases

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**Abstract:** Two cases of an extremely rare cystic lymphoepithelial lesion of a lymph node associated with the pancreas are presented herein. The first patient was a 57-year-old woman with a serous cystadenoma who underwent resection of the body and tail of pancreas, and the other patient was a 75-year-old woman with cancer of the papilla of Vater who underwent pylorus-preserving pancreatoduodenectomy. Both lesions were incidentally found during pathologic examination of lymph nodes from the peripancreatic region. Histologically, there were many scattered nests of the lymphoepithelial lesion in the lymphoid stroma, each of which was lined with stratified squamous epithelium. The pathological structure was found to resemble the lymphoepithelial lesion of the pancreas. Although the histogenesis is unknown, we hypothesize that the lesion might have arisen from squamous metaplasia of a benign epithelial inclusion such as the pancreatic duct of an ectopic pancreas in a peripancreatic lymph node. Therefore, a cystic lesion formed as a result of keratinization of the squamous epithelium with invasion into the pancreas could become a lymphoepithelial cyst of the pancreas.

**Key Words:** lymphoepithelial lesion, pancreas cyst

### Introduction

Lymphoepithelial cysts rarely develop in the lateral cervical region, and only 23 cases of similar lesions in the pancreatic tissue or peripancreatic lymph nodes have been documented. In this report we describe two cases of a lymphoepithelial lesion without cyst formation in a peripancreatic lymph node, followed by a review of the literature.

Reprint requests to: S. Sako  
(Received for publication on Oct. 6, 1997; accepted on Sept. 11, 1998)

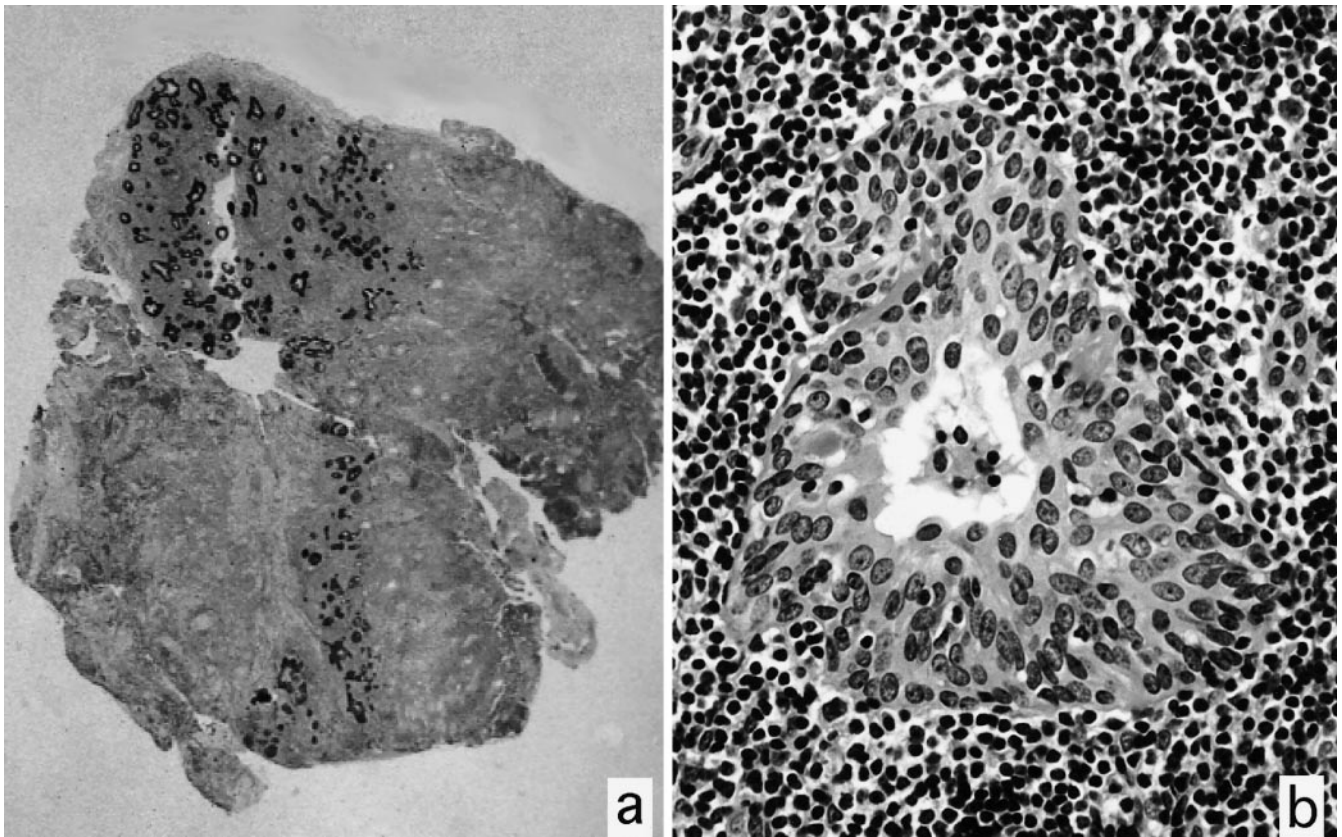
### Case Reports

#### Case 1

A 57-year-old woman presented to our hospital with a 1-year history of frequent back pain. The results of a physical examination and laboratory studies were unremarkable; however, abdominal ultrasonographic studies suggested the presence of a mass in the pancreatic body. A computed tomographic (CT) scan of the abdomen disclosed a round low-density mass measuring 2.0 cm in diameter located in the pancreatic body. She was admitted to our department to undergo more detailed examinations. Abdominal angiography revealed no marked arterial changes and no tumor shadow was seen. As a malignancy could not be excluded, a laparotomy was performed on May 21, 1990, which revealed a mass measuring about 1.5 × 1.5 cm, encapsulated by pancreatic tissue and located in the pancreatic body. We resected the pancreatic body and tail together with the mass including the peripancreatic lymph nodes. The patient is now asymptomatic 7 years after her operation.

#### Case 2

A 75-year-old woman with cancer of the papilla of Vater was admitted to our department on February 20, 1995. Fiber gastroscopic examination disclosed Borrmann type II changes in the papilla of Vater, and examination of the biopsy specimen revealed findings consistent with adenocarcinoma. An abdominal ultrasonographic study and CT scan did not demonstrate a mass in the pancreas or peripancreatic region. She underwent laparotomy on March 17, 1995, which disclosed a mass measuring about 2 × 2 cm in the papilla of Vater. We performed pylorus-preserving pancreatoduodenectomy with dissection of the peripancreatic lymph nodes. The patient has been free from cancer for 2 years since her operation.



**Fig. 1a,b.** Case 1. **a** Numerous epithelial cell nests scattered within the lymph node showed diffuse cytoplasmic staining for cytokeratin ( $\times 20$ ). **b** Higher magnification of **a** showing lym-

phoid tissue surrounding the cell nest of stratified squamous epithelium with duct-like lumen (H&E stain,  $\times 200$ )

## Pathologic Findings

### Case 1

The tumor measured  $1.7 \times 1.4 \times 1.2$  cm and was encapsulated by a thin layer of gray fibrous tissue. Histologically, it presented the features of a serous cystadenoma, but lymphoepithelial lesions were found incidentally in a posterior lymph node along the common hepatic artery. The lymph node was 0.8 cm in diameter and had elastic soft consistency. There were many scattered cell nests of this lymphoepithelial lesion in the lymphoid tissue (Fig. 1a), each of which was lined with a layer of stratified squamous epithelium between five and ten cells in thickness. Eosinophilic secretions were present within the lumen. Nuclear pleomorphism and mitotic figures were absent (Fig. 1b). The lymph node was examined by the immunoperoxidase method using monoclonal antibody, and immunostaining for keratin (DAKO; LP34) yielded a positive reaction in the epithelial component. It was negative for carcinoembryonic antigen (Kyowa; TP07) and carbohydrate antigen 19-9 (DAKO; 116-NS-19-9).

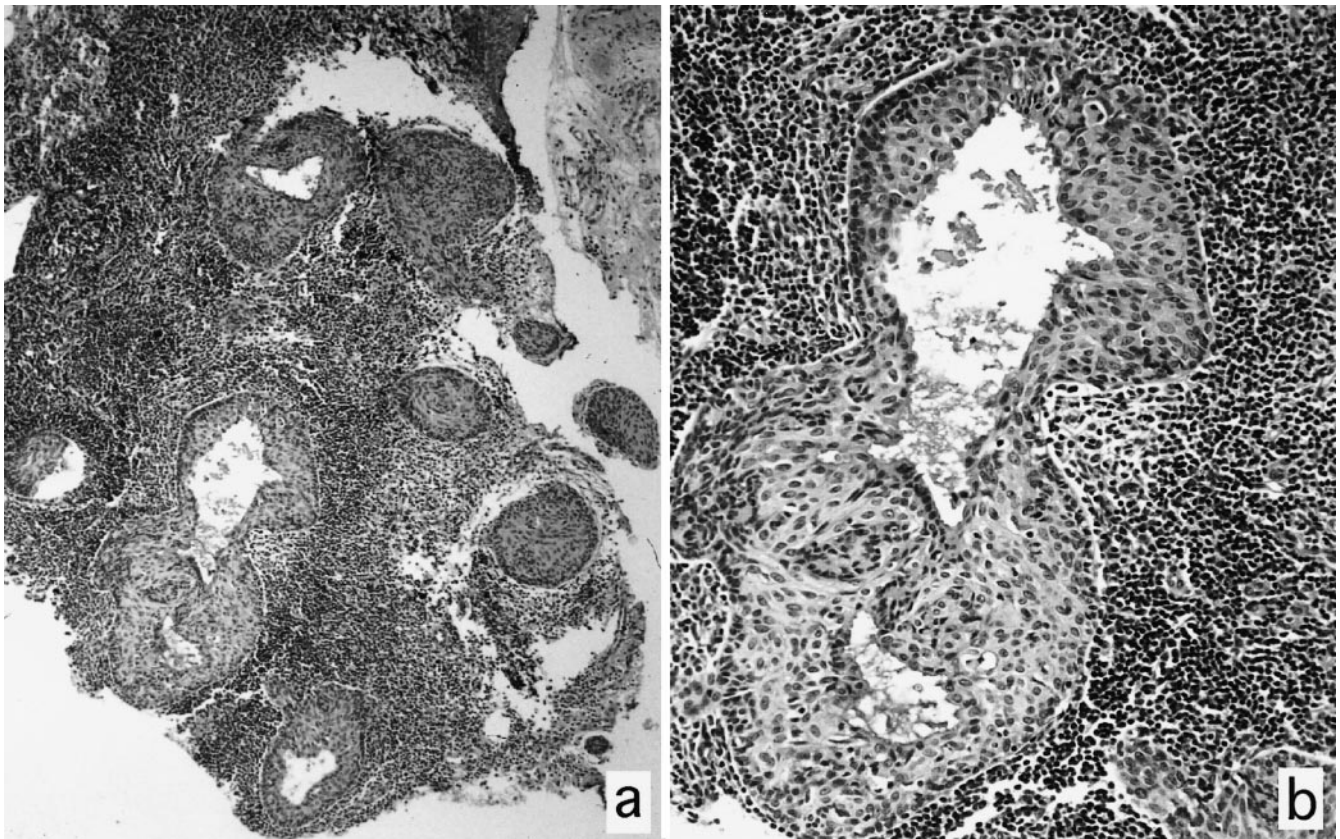
### Case 2

The tumor from the papilla of Vater measured  $1.8 \times 1.0 \times 0.8$  cm. Histologically, it was confirmed to be well differentiated adenocarcinoma, and no metastasis was found in the peripancreatic lymph nodes; however, a lymph node 0.5 cm in diameter, located in the posterior surface of the pancreatic head, contained lymphoepithelial lesions. There were some scattered cell nests of lymphoepithelial lesion in the lymphoid tissue, each of which was lined with a layer of stratified squamous epithelium between four and ten cells in thickness. Nuclear pleomorphism and mitotic figures were absent (Fig. 2). The specimen was too small to be examined by the immunoperoxidase method using monoclonal antibody.

## Discussion

The majority of benign lymphoepithelial lesions have been described in the salivary glands,<sup>1</sup> thyroid glands,<sup>2</sup> or cervical lymph nodes. These lesions are rarely associ-





**Fig. 2a,b.** Case 2. **a** Several epithelial cell nests within the lymph node (H&E stain,  $\times 40$ ). **b** Some of the epithelial cell nests show a central microcystic space (H&E stain,  $\times 100$ )

ated closely with the pancreas, the first such case having been reported by Luchtrath and Schriefer<sup>3</sup> in 1985. Our review of the world literature revealed only 25 cases, including our two, reported between 1985 and 1995 (Table 1).<sup>3-23</sup> The ages of the patients ranged from 35 to 75 years, with an average age of 58 years and a male to female ratio of 19:6. Most of the lymphoepithelial lesions associated with the pancreas had formed a cyst, and only four patients did not have a cyst, although there were some cystic glandular patterns in their pathologic findings. Among the 21 patients who had a lymphoepithelial lesion with a cyst, 8 presented with abdominal pain, 1 with back pain, 1 with abdominal discomfort, 1 with weight loss, and 1 with fatigue; however, 9 patients were asymptomatic. All of the cysts in the patients with symptoms were more than 3 cm in diameter, and all of those in the patients without symptoms were less than 6 cm in diameter. The cyst was located in the head and/or body of the pancreas in 11 of the patients with symptoms. A lymphoepithelial cyst was incidentally found during operations for other disorders in the two patients without symptoms, by ultrasonography or CT for other disorders in five patients, and at autopsy in two patients. Of the five

patients with a lymphoepithelial lesion located in a peripancreatic lymph node, four, including our two patients, did not have a cyst and the lesion was incidentally found during pathologic examination of resected lymph nodes (Fig. 3). Twelve of the cysts in these 21 patients were obviously located in the surface of the pancreas.

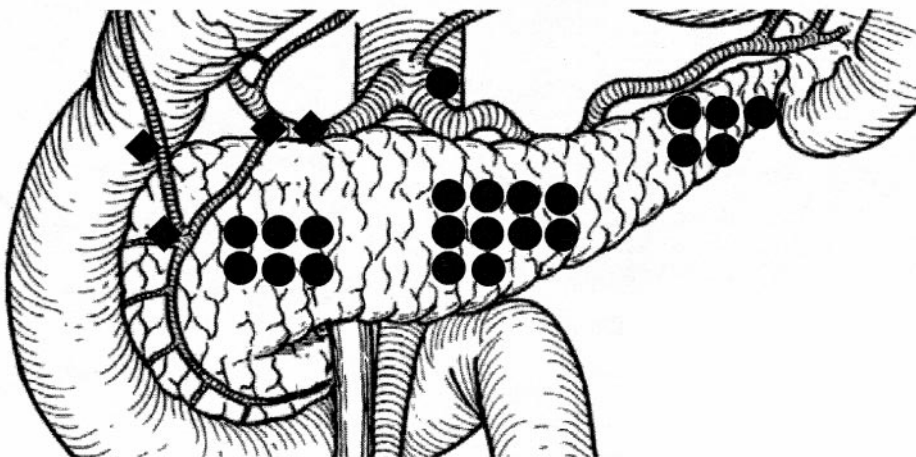
Seifert<sup>24</sup> reported that a characteristic pathologic feature of benign lymphoepithelial lesions of the parotid gland was diffuse interstitial lymphocytic infiltration of the gland with the inclusion of epimyoeplithelial cell islands. The distinctive pathologic findings of the lymphoepithelial lesions of pancreas were scattered cell nests of an epithelial lesion in lymphoid tissue. These nests were lined by stratified squamous epithelium several cell layers thick without any myoeplithelial cells. The cysts were lined by a keratinizing stratified squamous epithelium that was also several cell layers thick, and filled with keratin. Therefore, lymphoepithelial lesions of the pancreas are histopathologically different from benign lymphoepithelial lesions of the parotid gland.

Karp and Czernobilsky<sup>25</sup> found glandular inclusions in the pelvic lymph nodes removed at autopsy in 50 women; however, no glandular inclusions were found in

**Table 1.** Clinicopathologic features of lymphoepithelial lesions of the pancreas

Case	First author <sup>Ref.</sup>	Age (years)	Sex	Associated symptoms	Method of detection	Location in pancreas	Size of cyst (cm)	Treatment
1	Luchtrath <sup>3</sup>	36	M	Weight loss	CT	Body	9 × 5 × 2	Distal pancreatectomy
2	Truong <sup>4</sup>	35	M	Upper abdominal pain	CT	Surface of body	4 × 6 × 6	Enucleation
3	Carr <sup>5</sup>	50	F	None	Op.	L.N. around celiac artery	3 × 2 × 1.7	Extirpation
4	Horie <sup>6</sup>	58	M	Abdominal pain	CT	Surface of head	4.5 × 3.1 × 3.0	Enucleation
5	Mockli <sup>7</sup>	72	M	None	Autopsy	Anterior tail	4	—
6	Mitchell <sup>8</sup>	42	M	R.U.Q. Abdominal pain	CT	Superior head	6	Choledochoduodenostomy with cyst resection
7	Yamamoto <sup>9</sup>	64	M	None	US	Anterior body	4 × 3 × 3	Enucleation
8	Kaiserling <sup>10</sup>	53	M	Fatigue	US, CT	Surface of tail	8 × 3 × 2	distal pancreatectomy and splenectomy
9	Hisaoka <sup>11</sup>	65	M	None	US, CT	Superior body	2.5 × 3 × 5	Distal pancreatectomy and splenectomy
10	Ramsden <sup>12</sup>	73	M	None	Autopsy	Body	2	—
11	DiCorato <sup>13</sup>	43	M	None	CT	Tail	3 × 3 × 1.5	Distal pancreatectomy
12	Arai <sup>14</sup>	48	M	None	Pathol. Ex.	Peripancreatic L.N.	—	(Total gastrectomy)
13	Arai <sup>14</sup>	62	M	None	Pathol. Ex.	Infrapyloric L.N.	—	(Partial gastrectomy)
14	Yamaguchi <sup>15</sup>	57	F	None	US or CT	Superior pancreas	3 × 3 × 2	Enucleation
15	Bastens <sup>16</sup>	66	F	Abdominal pain	US, CT	Head	4 × 2.5 × 2	Enucleation
16	Hausegger <sup>17</sup>	66	F	None	Op	Tail	5	No description
17	Cappellari <sup>18</sup>	44	M	Epigastric pain	CT	Head	6 × 4.2 × 1.3	Enucleation
18	Goodman <sup>19</sup>	68	M	Abdominal pain	CT	Body	13	Enucleation
19	Ueno <sup>20</sup>	69	M	Abdominal discomfort	CT	Body	3 × 3 × 2	Extirpation
20	Ueno <sup>20</sup>	58	M	Abdominal pain	CT	Body	8	Extirpation
21	Fitoko <sup>21</sup>	60	M	Abdominal pain	CT	Body	4	Extirpation
22	Koga <sup>22</sup>	62	M	None	US, CT	Head	5.3 × 5.2	Pancreatoduodenectomy
23	Shigemori <sup>23</sup>	63	M	Back pain	CT	Superior head, inferior tail	10 × 10, 5 × 5	Enucleation, distal pancreatectomy and splenectomy
24	Present case	57	F	None	Pathol. Ex.	Posterior L.N. along C.H.A.	—	(Distal pancreatectomy and splenectomy)
25	Present case	75	F	None	Pathol. Ex.	Posterior L.N. of pancreas head	—	(Pylorus-preserving pancreatoduodenectomy)

CT, Computed tomography; US, ultrasonography; Op., operation; R.U.Q., right upper quadrant; L.N., lymph node; C.H.A., common hepatic artery; Pathol. Ex., Pathologic examination. Treatments in parentheses indicate operation for other disease



**Fig. 3.** Locations of the 26 lymphoepithelial lesions (LEL) in 25 patients. Circles, LEL with cyst; diamonds, LEL without cyst



any of the lymph nodes from the men examined. They concluded that these inclusions were the result of a metaplastic proliferation of peritoneal mesothelium in pelvic inflammatory disease. Conversely, the histogenesis of lymphoepithelial lesions of the pancreas remains unknown. A lymphoepithelial lesion without a cyst, as observed in our patients, supports the hypothesis to explain the histogenesis of a lymphoepithelial cyst that a benign epithelial inclusion or a duct of ectopic pancreas undergoes squamous metaplasia, and the cystic lesion formed invades the pancreas. It is unknown whether the ectopic pancreas migrates into the lymph node or if the lymphocytes infiltrate around it. Truong et al.<sup>4</sup> and Hisaoka et al.<sup>11</sup> also proposed the possibility that the cyst arose from a benign epithelial inclusion of an ectopic pancreas in a peripancreatic lymph node. Truong et al.<sup>4</sup> speculated this hypothesis and Hisaoka et al.<sup>11</sup> observed the benign inclusion of squamous epithelium in an excised retropyloric lymph node from a patient with early gastric cancer. However, if a lymphoepithelial cyst arises from a peripancreatic accessory spleen with lymphoid tissue, it should be located around the spleen and the lymphoid tissue should resemble the structure of the spleen. Moreover, no matter whether the origin of these lesions is the bronchial cleft epithelium, no such remnant has ever been demonstrated in the pancreas. Vermeulen et al.<sup>26</sup> reported on dermoid cysts of the pancreas, but no hair or teeth were found in these cysts.

In conclusion, physicians should bear in mind the possibility of a lymphoepithelial lesion when they detect a cystic lesion located on the surface of and associated with the pancreas. Nevertheless, it is difficult to distinguish a lymphoepithelial lesion with a cyst from a cystic lesion of the pancreas and therefore, care should be taken not to misidentify metastasis from cancer in a lymph node as a lymphoepithelial lesion lacking a cyst.

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