further demonstrated in five pediatric patients with recurrent tracheal cicatrix after tracheal reconstruction surgery.\textsuperscript{15}

Topical MC at a relatively low concentration of 0.2 mg/mL was chosen because of its established efficacy and safety in ophthalmic surgery\textsuperscript{16,17} as well as its demonstrable success in preventing laryngotracheal stenosis following airway injury in dogs.\textsuperscript{18} Thus, it was used with analogous intent in our patient to prevent recurrent BS, and this novel method showed good results at 6 weeks.

**CONCLUSION**

Our case lends support to reports in the literature that show that IPA causes significant airway inflammation and BS due to iron deposition in the bronchial wall. As the pill disintegrates in the airway, it is usually not detected on bronchoscopy. Thus, a high degree of suspicion is necessary to make the diagnosis. We propose that a triad of symptoms (ie, aspiration, intense airway inflammation with BS, and iron particles in bronchial biopsy specimens) constitutes the syndrome of IPA, even in the absence of an FB. We would also recommend that the use of iron pills should be avoided in patients with swallowing disorders. However, if BS develops from IPA, it can be managed with BB. The role of MC remains to be studied.

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**Retroperitoneal Bronchogenic Cyst*\**

**A Case Report**

Akira Ingu, MD; Atsushi Watanabe, MD; Yasunori Ichimiya, MD; Tatsuya Saito, MD; and Tomio Abe, MD

A 46-year-old woman presented with a 1-year history of progressive left-arm numbness. A cyst below the left hemidiaphragm was discovered incidentally when a CT scan was performed to examine the thymus for a suspected tumor. A thymic mass was found. MRI indicated that the cyst contained proteinaceous fluid. The thymoma was approached through a median sternotomy and resected, but the cyst was found to be infra-diaphragmatic. A separate, left paraspinal incision was made to access the retroperitoneum, and the cyst was resected. Histologic examination showed that the cyst was bronchogenic in origin. Retroperitoneal bronchogenic cysts are very rare, and only four cases have been reported in the English-language literature.

**(CHEST 2002; 121:1357–1359)**

**Key words:** bronchogenic cyst; MRI

Bronchogenic cysts in the retroperitoneum are rare, and only four cases have been reported in the English-language literature.\textsuperscript{1–4} Making the correct diagnosis of heterotopic bronchogenic cyst preoperatively is very difficult. Previous reports\textsuperscript{6,7} suggest that MRI may be helpful. Bronchogenic cysts in the retroperitoneum can be excised either via a laparotomy incision or a flank incision. We report the case of a retroperitoneal bronchogenic cyst that was located near the aorta and was in contact with the left

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crus of the diaphragm. The cyst was removed uneventfully using a left retroperitoneal approach.

CASE REPORT

A 46-year-old woman presented with a 1-year history of left-arm numbness that had gradually increased in severity. Her medical history was significant only for a hysterectomy for uterine myoma 10 years previously.

On physical examination, the patient was a well-developed Japanese woman with a pulse rate of 88 beats/min and a BP of 110/60 mm Hg. Complete blood counts, liver enzymes, and serum electrolyte levels were within normal limits. Radiologic examinations uncovered two tumors. Enhanced CT revealed a 4-cm mass in the right anterior thymus that enhanced heterogeneously. A second mass was seen that appeared to be below the diaphragm and was to the left of the thoracoabdominal aorta. This 4-cm lesion did not enhance and appeared cystic. On MRI, the second mass had a signal intensity slightly lower than that of fat on T1-weighted images and much higher than that of fat on T2-weighted images. The cyst content was believed to be proteinaceous.

Surgery was performed in December 1999. After the thymus was removed through a median sternotomy, an attempt was made to remove the cyst by entering the left thoracic cavity, but this second mass could not be visualized. The patient’s chest was closed, and the lesion was approached using a left paraspinal incision. After entering the retroperitoneum, the left crus of the diaphragm was partially divided, which provided adequate exposure to the tumor. The tumor was not adherent to any other structures and was resected without difficulty. On gross examination, the cyst was filled with a mucoid material without signs of purulence.

Histologically, the first mass was diagnosed as lymphoid hyperplasia. The retroperitoneal cyst wall was composed of well-differentiated hyaline cartilage, smooth muscle, and mucous glands, which were lined with respiratory epithelium (Fig 1). These findings were consistent with a bronchogenic cyst. Postoperatively, the patient’s left-arm numbness improved, and she was discharged from the hospital on the 14th postoperative day. The etiology of her left-arm numbness was never established unequivocally. The patient continues to be followed closely by her neurologist.

COMMENT

Most bronchogenic cysts originate in the mediastinum, and other locations are rare. Subdiaphragmatic bronchogenic cysts are believed to be the result of bronchopulmonary foregut malformation, and usually are an incidental finding. Most subdiaphragmatic bronchogenic cysts are located in the peritoneal cavity and are attached to, or communicate with, the GI tract. Only four retroperitoneal cysts have been reported in the English-language literature (Table 1).

Coselli et al speculate that a retroperitoneal bronchogenic cyst could result from the pinching off of an abnormal bud of the primitive foregut, with subsequent migration into the abdomen before fusion of the diaphragmatic components occurs. It seems less probable that such cysts represented the aberrant differentiation of a foregut-derived cyst originating intraabdominally.

Making a preoperative diagnosis of heterotopic bronchogenic cyst is very difficult. Researchers suggest that MRI may be helpful. The bronchogenic cysts in this case

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**Table 1—A Review of Patients With Bronchogenic Cysts Below the Diaphragm in the Retroperitoneal Area**

<table>
<thead>
<tr>
<th>Source (Year)</th>
<th>Age/Gender</th>
<th>Presenting Symptoms</th>
<th>Operative Findings, Size, Location</th>
<th>Diagnostic Tests</th>
<th>Surgical Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miller et al1</td>
<td>10wk/female</td>
<td>Difficult respirations</td>
<td>Unknown, anterior to pancreatic body</td>
<td>RE</td>
<td>Autopsy</td>
</tr>
<tr>
<td>Sumiyashi et al4</td>
<td>59 yr/male</td>
<td>Epigastric pain, nausea, vomiting</td>
<td>7 cm, superior to pancreatic body</td>
<td>UGI, CT, US, ERCP</td>
<td>ML</td>
</tr>
<tr>
<td>Coselli et al2</td>
<td>35 yr/female</td>
<td>Epigastric pain</td>
<td>5 cm, superior to pancreatic tail</td>
<td>CT</td>
<td>ML</td>
</tr>
<tr>
<td>Foerster et al1</td>
<td>35 yr/male</td>
<td>Left-flank pain</td>
<td>10 cm, proximal to left adrenal gland and posterior to pancreatic tail</td>
<td>CT, MRI</td>
<td>Left-flank incision</td>
</tr>
<tr>
<td>Present study</td>
<td>46 yr/female</td>
<td>Asymptomatic</td>
<td>4 cm, left lateral side of aorta, inferior surface of left hemidiaphragm</td>
<td>RE, CT, MRI</td>
<td>Pararectal incision and extraperitoneal approach</td>
</tr>
</tbody>
</table>

*ERCP = endoscopic retrograde pancreatography; ML = median laparotomy; RE = radiographic examination; UGI = upper GI series; US = ultrasonography.*

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demonstrated high signal intensity on T1-weighted pulse sequences. One possible explanation for the high signal intensity is the presence of proteinaceous material within the cyst. Cyst fluid that has a low specific gravity and is mainly serous (a “spring water” cyst), will show very low signal intensity on T1-weighted images and have very high signal intensity on T2-weighted images. Most bronchogenic cysts contain large amounts of proteinaceous material and characteristically have high signal intensity on T1-weighted images.5,6

Enucleation is the procedure of choice, usually through a medial laparotomy for subdiaphragmatic cysts. When the patient has a history of laparotomy, adhesions may make resection hazardous. Bronchogenic cysts located in the retroperitoneum can be excised using either a laparotomy incision or a flank incision.1 Resection of previously infected cysts is more difficult, giving further impetus to early removal of asymptomatic cysts.

The treatment of asymptomatic bronchogenic cysts remains a controversial topic. Most bronchogenic cysts are benign and remain asymptomatic. Therefore, the argument has been made that intervention is not warranted as long as the cyst is not causing problems. However, this philosophy is shortsighted because asymptomatic cysts do not always remain so.6 Infection is a well-known complication in these lesions, and the morbidity and mortality of surgery to remove an infected cyst is higher than that for a purely elective procedure. Furthermore, carcinomas and fibrosarcomas have been reported arising from benign-appearing bronchogenic cysts. Since it usually is not possible to establish an unequivocal diagnosis of bronchogenic cyst preoperatively, and it is impossible to anticipate infection, early surgical resection of bronchogenic cysts is warranted in all good surgical candidates.

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Malignant Ameloblastoma Metastatic to the Lungs 29 Years After Primary Resection*

A Case Report

Lawrence M. Ciment, MD, FCCP; and Ari J. Ciment, MD

We describe a case of a 55-year-old man presenting with a metastatic malignant ameloblastoma 29 years after the primary tumor was resected. This represents the longest period between initial diagnosis and first subsequent metastasis recorded as a case report. This case illustrates distinctions between the terms metastatic and malignant; it also highlights the difficulties derived from the accumulation of data by new diagnostic modalities (electron beam CT and positron emission tomography) and their integration into assessment algorithms.

(CHEST 2002; 121:1359–1361)

Key words: ameloblastoma; electron beam CT; malignant; metastatic; metastatic ameloblastoma; positron emission tomography; recurrent ameloblastoma

Abbreviations: EBCT = electron beam CT; PET = positron emission tomography

We describe a case of a 55-year-old man presenting with a metastatic malignant ameloblastoma 29 years after the primary tumor was resected. This represents the longest period between initial diagnosis and first subsequent metastasis recorded as a case report. This case illustrates distinctions between the terms metastatic and malignant; it also highlights the difficulties derived from the accumulation of data by new diagnostic modalities (electron beam CT [EBCT] and positron emission tomography [PET]) and their integration into assessment algorithms.

Ameloblastomas represent 1% of all jaw tumors. They generally are regarded as benign tumors; however, since over half of resected tumors recur, several authorities consider ameloblastomas locally malignant but not metastasizing.1 Metastases, however, are known to occur in roughly 2 to 5% of cases. Over 80% of such metastases involve the lung.2,3

CASE REPORT

A 55-year-old practicing pulmonologist underwent a screening EBCT because of hypercholesterolemia and strong family history of coronary atherosclerosis. Coincidentally, the pulmonary win-