Letters to the Editor

Pulmonary adenoma: a variant of sclerosing haemangioma of lung?

A 67 year old, non-smoking, caucasian woman presented with a three week history of productive cough and chest infection, which resolved after antibiotic treatment. Subsequent chest x-ray picture showed a circumscribed lesion in the right mid-zone. There were no other symptoms and the medical history was of no consequence. Routine clinical examination and investigations were otherwise unremarkable. Comparison with films taken three and four years earlier showed that the lesion had been present at that time, with a slight increase in size over that period. Before surgery a percutaneous Nordenstrom needle biopsy specimen showed uniform spindle cells which, together with the radiological appearances, suggested a hamartomatous lesion. At thoracotomy the lesion was easily enucleated from surrounding lung. Recovery was uneventful and she was discharged from outpatient follow up after three months with no further problems and a normal chest x-ray picture.

The resection specimen showed a smooth surfaced mass 2-8 cm in diameter, with uniform pale grey cut surface. Microscopic examination showed (figure) numerous spaces of variable size lined by uniform flat or cuboidal cells with vesicular nuclei and a moderate amount of eosinophilic cytoplasm. This lining was occasionally "hobnail" in appearance and some spaces contained acellular proteinaceous fluid with scattered erythrocytes. The intervening stroma showed focal myxoid change and was composed of uniform spindle cells with eosinophilic cytoplasm and elongated nuclei. Occasional plasma cells, eosinophils, histiocytes, stromal capillary vessels and lymphocytic aggregates, some showing germinal centre formation, were also noted. Histochemical stains for mucin (diastase periodic acid Schiff and alcian blue) were negative.

Immunohistochemical techniques showed strong granular cytoplasmic positivity for epithelial markers CEA and CAM 5.2, which seemed to be limited to those cells lining the spaces. Stromal vessels were positive for factor VIII related antigen while those cells lining spaces were negative. No clinically important staining was seen for neuron specific enolase, bombesin, vimentin, neurofilament, S100 or α1-anti-trypsin. Ultrastructural examination showed spaces lined by polygonal cells with numerous surface microvilli resting on a basement membrane. Although typical osmiophilic bodies were not shown, these cells were considered to be type 2 pneumocytes. The histological appearances were interpreted as those of the so called "benign alveolar adenoma" of lung, with immunohistochemical and ultrastructural features supporting an epithelial (pneumocytic) rather than vascular (endothelial) histogenesis.

Sclerosing haemangiomas of the lung were first described by Liebow and Hubbell in 1956 and there are now several published series. The microscopic features are variable and include solid, papillary, angiomatoid, and sclerotic areas, one of these occasionally dominating. The alveolar adenoma, however, is characterised microscopically by cystic spaces lined by presumed alveolar pneumocytes and a spindle cell intervening matrix, closely resembling the "angiomatoid" areas we have seen in sclerosing haemangioma. This similarity between sclerosing

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**Table**  
Comparison of clinical data from reported alveolar adenomas and three series of sclerosing haemangioma of lung

<table>
<thead>
<tr>
<th>No of cases</th>
<th>Age (years)</th>
<th>F/M ratio</th>
<th>Radiology</th>
<th>Diameter (cm)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benign pulmonary alveolar adenoma:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>45-74 (average 59)</td>
<td>4:2</td>
<td>Solitary nodule</td>
<td>1-2-2.5 (average 1.8)</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>60</td>
<td>1:0</td>
<td>Solitary nodule</td>
<td>1-0 (average 0.8)</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>67</td>
<td>1:0</td>
<td>Solitary nodule</td>
<td>2.8</td>
<td>Current case</td>
</tr>
<tr>
<td><strong>Sclerosing haemangioma:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>15-69 (average 42)</td>
<td>42:8</td>
<td>Solitary nodule</td>
<td>0.4-4.0 (average 3.0)</td>
<td>4</td>
</tr>
<tr>
<td>29</td>
<td>22-83</td>
<td>Not known 1</td>
<td>Multiple nodules</td>
<td>12.7</td>
<td>Not known 19</td>
</tr>
<tr>
<td>14</td>
<td>16-78 (average 51)</td>
<td>14:0</td>
<td>Solitary nodule</td>
<td>1.3-3.5 (average 2.3)</td>
<td>6</td>
</tr>
</tbody>
</table>

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**Figure**  
Pulmonary "adenoma" showing variable sized spaces lined by cells with a "hobnail" appearance and intervening spindle cell stroma.
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haemangioma and alveolar adenoma of lung is supported by clinical as well as histopathological features. Comparison of the clinical data from reports of alveolar adenoma,1 including the above case and three published series of sclerosing haemangioma,2-4 shows clear parallels (table).

Both lesions present predominantly in middle aged women as a solitary, discrete, non-calcified peripheral nodule measuring a few centimetres in diameter and show a benign clinical course. Despite the terms sclerosing "haemangioma" and "angiomatoid" variant, ultrastructural and immunohistochemical evidence again points to an origin from type 2 pneumocytes rather than endothelial cells. "Pneumocytoma" has therefore been suggested as a more appropriate term.6

In conclusion, there is strong evidence that the pulmonary alveolar adenoma represents a histological variant of sclerosing haemangioma in which spaces lined by pneumocytes are either the predominant or exclusive pattern.

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arising from biliary or gastrointestinal primaries.1 We report a case of breast carcinoma metastasising to the gallbladder discovered at routine cholecystectomy.

Case report

A 55 year old woman presented complaining of three episodes of biliary colic during the preceding 12 months. Abdominal ultrasound scan showed stones within the gallbladder and showed no other abnormality. Routine cholecystectomy was performed and the operative cholangiogram was normal. Laparotomy showed no evidence of other intra-abdominal pathology.

Histological examination showed features of chronic cholecystitis with fibrosis of the gallbladder wall and a moderately severe chronic inflammatory infiltrate. There were also carcinoma cells infiltrating singly and in files, mostly in the fibrous tissue deep to the muscularis but in places extending up to the mucosa (figure). The entire gallbladder was sectioned and no evidence of primary carcinoma or epithelial dysplasia was seen. A search for a primary in the biliary tree, stomach, or ovary was suggested.

On clinical review the patient was noted to have bilateral thickening of the breasts, more prominent on the left. Aspiration cytology at this site was inadequate for diagnosis and mammography showed no evidence of malignant disease. A breast biopsy was performed and a fibro-fatty mass 7.5 x 6 x 3.5 cm was removed. Histological examination showed typical invasive lobular carcinoma identical with the tumour seen in the gallbladder.

Breast carcinoma is normally associated with local and lymphatic spread and with blood borne spread to liver, lungs, and bone. Lobular carcinoma in particular has a distinctive metastatic pattern and may affect intra-abdominal and pelvic viscera, peritoneum, and meninges.2 This may lead to the diagnosis of previously unrecognised breast carcinoma on biopsy of stomach, endometrium, or cervix.3 This is only the third reported case of breast carcinoma metastatic to the gallbladder. In one previous case metastasis was discovered three years after mastectomy.4 The type of carcinoma was not specified but the description suggests that it was lobular. In the other case, mentioned in passing in a review of lobular carcinoma, the existence of the primary tumour was not known before cholecystectomy.5

The biliary tree might have been considered the most likely primary in this case as it is the most common source of gallbladder secondaries. Histological appearances suggested breast, stomach, and

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Figure · Gallbladder showing metastatic carcinoma infiltrating through the muscularis.
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