Capillary Hemangioma of the Lung*

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Cavernous hemangioma of the lung synonymous with arteriovenous fistula or aneurysm of the lung is generally considered to be a congenital abnormality. According to Linskog and Liebow,¹ at least 60 cases are in the literature. Roentgenologically, cavernous hemangioma has the appearance of a lobular shadow of increased density continuous with hilar vascular shadows. Clinically it is usually associated with polycythemia, cyanosis, clubbing of the fingers and dyspnea. A diagnosis is ordinarily made preoperatively and the indications for surgical excision are hemoptysis or dyspnea and, in the asymptomatic patient, the prevention of serious vascular complications.

As distinguished from cavernous hemangioma, capillary hemangioma of the lung presenting itself as a “coin” lesion and unaccompanied by any of the findings characteristic of cavernous hemangioma is an extremely rare lesion.² Three The Chest Tumor Registry of the Armed Forces Institute of Pathology⁴ has in its files only a few true capillary hemangiomas of the lung. Textbooks on pathology and thoracic surgery make no

FIGURE 1A

**From the Mount Sinai Hospital, Los Angeles, California.

FIGURE 1B

*Figures 1A and 1B: Preoperative roentgenograms showing the “coin” lesion within the lower lobe of the right lung adjacent to and immediately posterior to the heart shadow.*

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mention of it and a review of reports dealing with pulmonary "coin" lesions revealed only a single case of unstated size in a 65-year-old female whose symptoms consisted of cough and expectoration and who was treated by lobectomy. One instance without a statement as to the size of the lesion or the coexistence of an arteriovenous fistula was reported in 1944; however, in view of the fact that it was treated by pneumonectomy it is likely that it was a cavernous rather than a capillary hemangioma presenting itself as a coin lesion. Another lesion described as an asymptomatic solitary round lesion was excised and found to be an hemangioma; however, no statement was offered describing the lesion as cavernous or capillary.

The purpose of this communication is to report an instance of capillary hemangioma of the lung occurring as a "coin" lesion and treated by excision in order to obtain a diagnosis as well as relief from symptoms.

Case Report

S. R., a 59 year old white female, was first seen in March 1950 because of cough and expectoration of small quantities of mucoid and occasionally bloody sputum for several months. Significant physical findings included overweight, enlargement of both hands without edema and hypertension of 240/120. Urinalysis, blood count, blood urea nitrogen and electrocardiogram were within normal limits. Sedimentation rate was rapid.

Chest roentgenograms between 1950 and 1952 revealed no change in the calcium-free "coin" lesion within the lower lobe of the right lung at the cardiophrenic angle (Figures 1A, 1B and 2A). Bronchoscopy in 1950 and 1952 was noncontributory and examination of bronchial secretions revealed no tumor cells.

On August 1, 1952 right lower lobectomy was performed.* Recovery was uneventful and she became free from bronchopulmonary symptoms. As of this date (April 1954) there has been no change in postoperative status or chest roentgenogram (Figure 2B).

Gross examination of the resected pulmonary lobe revealed a 2.5 cm. nodule within the substance of the lung. Section of the nodule disclosed it to be fairly well circumscribed and encapsulated and slightly trabeculated with several focal dark reddish areas of discoloration. No connection existed between this lesion and the bronchovascular structures.

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FIGURE 2A

*Figure 2A: Planigram showing the "coin" lesion.—Figure 2B: Roentgenogram seven weeks postoperatively.
TABLE I

Incidence of Bronchogenic Cancer and Pulmonary Capillary Hemangioma in Patients with Circumscribed Solitary Pulmonary Lesions.

<table>
<thead>
<tr>
<th>Author and date</th>
<th>Pulmonary lesion described</th>
<th>Number of patients &amp; method of diagnosis</th>
<th>Sex and age</th>
<th>Incidence of Bronchogenic cancer</th>
<th>Capillary hemangioma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thornton, Adams &amp; Bloch 1944</td>
<td>Solitary circumscribed tumor</td>
<td>23 with &amp; without operation</td>
<td>?</td>
<td>12 (52%)</td>
<td>1*</td>
</tr>
<tr>
<td>Effler, Blades &amp; Marks 1948</td>
<td>Asymptomatic Solitary peripheral mass</td>
<td>24 all operated</td>
<td>Males 19-57 Av. 35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O'Brien, Tuttle &amp; Ferkaney 1948</td>
<td>&quot;Coin&quot; lesions</td>
<td>21 all operated</td>
<td>?</td>
<td>8 (38%)</td>
<td>0</td>
</tr>
<tr>
<td>Johnson, Clagett &amp; Good 1949</td>
<td>Peripheral circumscribed mass</td>
<td>53 all operated</td>
<td>?</td>
<td>35 (66%)</td>
<td>0</td>
</tr>
<tr>
<td>Mahon &amp; Forsee 1950</td>
<td>Round peripheral lesion</td>
<td>55 all operated</td>
<td>?</td>
<td>2 (3 1/2%)</td>
<td>0</td>
</tr>
<tr>
<td>Sharp &amp; Kinsella 1950</td>
<td>Asymptomatic isolated nodule 1-4 cm. in dia.</td>
<td>55 all operated</td>
<td>?</td>
<td>12 (22%)</td>
<td>0</td>
</tr>
<tr>
<td>Harrington 1951</td>
<td>Asymptomatic circumscribed lesions</td>
<td>16 all operated</td>
<td>?</td>
<td>2 (13%)</td>
<td>0</td>
</tr>
<tr>
<td>Abbott, Hopkins, Leigh and Van Fleit 1951</td>
<td>Solitary peripheral mass larger than 1 cm. in dia.</td>
<td>81 all operated</td>
<td>?</td>
<td>31 (38%)</td>
<td>0</td>
</tr>
<tr>
<td>Effler 1951</td>
<td>Asymptomatic solitary tumor</td>
<td>16 all operated</td>
<td>28-66 Av. 50</td>
<td>6 (37%)</td>
<td>0</td>
</tr>
<tr>
<td>Fink 1951</td>
<td>Solitary non-hilar lesion up to 6 cm.</td>
<td>30 with &amp; without operation</td>
<td>?</td>
<td>10 (33%)</td>
<td>0</td>
</tr>
<tr>
<td>Abels &amp; Ehrlich 1951</td>
<td>Asymptomatic single circumscribed density</td>
<td>21 with &amp; without operation</td>
<td>?</td>
<td>5 (24%)</td>
<td>0</td>
</tr>
<tr>
<td>Condon 1952</td>
<td>Asymptomatic round solitary lesion</td>
<td>27 all operated</td>
<td>50-64 17 (63%)</td>
<td></td>
<td>1**</td>
</tr>
<tr>
<td>Hood, Good, Clagett &amp; McDonald 1953</td>
<td>Solitary circumscribed lesion</td>
<td>156 all operated</td>
<td>M 57% F 43% 6-69</td>
<td>25 (16%)</td>
<td>1</td>
</tr>
<tr>
<td>May, Rose and Dugan 1954</td>
<td>Solitary lesion on routine film</td>
<td>36 all operated</td>
<td>Males 21-70</td>
<td>8 (22%)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Not described as capillary; excised by pneumonectomy.  
**Not described as capillary; method of excision not stated.

Microscopic examination (Figures 3 and 4) of multiple sections thru the tumor nodule revealed an essentially similar appearance. The tumor is apparently well encapsulated and demarcated from the adjacent pulmonary tissue. There are foci of round cell infiltration and hemorrhage in the capsule. The tumor itself, in places, is made up of broad strands of somewhat oval to polyhedral cells having a generally uniform appearance and interspersed with scattered leucocytes. In most areas of the tumor, however, there is a papillary proliferation resulting in many vascular spaces lined by endothelial cells covering the papillary projections. The stroma in many of these proliferations has an almost hyaline appearance. A few small multi-nucleated cells are scattered among the others. The pulmonary parenchyma and the bronchial tree are not remarkable.
While there is some variability in the histological appearance of the tumor from somewhat solid to more papillary vesicular areas it is thought that, in view of the gross and microscopic appearance with complete encapsulation, this is a benign tumor showing moderately active intrinsic proliferation. Diagnosis: capillary hemangioma of the lung.

Discussion

Due to the extremely low apparent incidence of capillary hemangioma in the lung as well as to its benign nature, it obviously does not present a serious diagnostic or therapeutic problem; however, for the sake of completeness of the differential diagnosis of pulmonary "coin" lesions, capillary hemangioma must be included along with other benign though more common lesions.

The increasing popularity enjoyed by chest roentgenography in modern times is resulting in the discovery of more instances of "coin" lesions. Due to the lack of uniformity in what constitutes a pulmonary "coin" lesion, an isolated pulmonary nodule, a solitary peripheral pulmonary mass or a peripheral circumscribed pulmonary tumor, it is difficult to compare statistical data found in the literature. However, because these same sources (Table I) reveal that the incidence of primary lung carcinoma in patients with solitary spherical intrapulmonary non-hilar masses can be as high as 66 per cent depending on sex and age, it becomes essential to determine the nature of such lesions as soon as discovered. As a more aggressive attitude toward these lesions of unknown nature becomes prevalent more inflammatory as well as benign neoplastic lesions will be resected with possible discovery that the lesion which constitutes the subject of this report is perhaps not as rare as it appeared to be.

SUMMARY

This case of benign capillary hemangioma of the lung radiologically described as a solitary spherical intrapulmonary non-hilar density ("coin" lesion) was treated by excision because of inability to exclude neoplasm.

RESUMEN

Este caso de hemangioma capilar benigno descrito como una densidad solitaria, esférica intrapulmonar no hilar (lesión "en moneda"), se trató por la excisión a causa de imposibilidad de excluir la neoplasia.

RESUME

L'auteur présente un cas d'angiome capillaire du re poumon qui se présente radiologiquement comme une ombre arrondie intra-pulmonaire. L'exérèse en fut pratiquée, parce qu'il était impossible d'affirmer qu'il ne s'agissait pas d'un cancer.

REFERENCES
4 Armed Forces Institute of Pathology, personal communication, 1952.

*By Irving Madoff, M.D.
Primary Chondroma of the Lung*

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Reports in the literature are confusing in regard to differentiation between chondroma of the lung and hamartoma of the lung. According to Hochberg and Pernikoff1, these tumors are distinct and different forms of neoplastic disease. Bragg and Levene2 feel that in several articles in the literature dealing with pulmonary hamartoma these are incorrectly referred to as chondroma. The confusion dates from Albrecht (1904), when his differentiation of hamartoma as a benign mixed tumor occurring in various organs, including the lung, was made. According to him, hamartomata are not true tumors, but rather tumor-like mal-formations due to abnormal mixing or development of the normal components of that organ. The abnormality may take the form of a change in quality, arrangement, or degree of differentiation, or comprise variations of all three phases. Hochberg and Pernikoff consider chondroma of the lung a rare tumor, whereas in contrast, Bragg and Levene claim that hamartoma is not a rare tumor.

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