Pedunculated Leiomyoma of the Lung
Report of a Case

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Primary solitary leiomyoma of the lung is benign in nature and is one of the rarest tumors of mesodermal origin. Because of the increasing number of routine chest roentgenograms, these lesions are being discovered more frequently. On occasions, this type of tumor has been followed roentgenographically over an interval of several years and definite growth has been observed. Exploratory thoracotomy with removal and definitive diagnosis is certainly advisable. The case to be described illustrates the usual method of discovery of this solitary lesion, its prompt treatment, and good prognosis.

Case Report:
This 54-year-old white woman was admitted to the Ohio State University Hospital in March, 1966 for the treatment of a minor external gynecologic disorder. Pelvic examination showed no intrapelvic pathology. Routine x-ray film brought out solitary density in the left paravertebral position just below the level of the aortic arch (Fig. 1). Left lateral x-ray films showed the mass to be in the middle portion of the left lung lying adjacent to the spine and descending aorta at the level T-7. Cholecystogram, upper and lower gastrointestinal series, and intravenous pyelogram were all within limits of normal. The hemogram and urinalysis were normal. The PPD tuberculin and histoplasmin skin tests were negative. The preoperative diagnosis of hamartoma of the lung was made.

On March 21, an exploratory left thoracotomy was performed and a pedunculated, bilobed mass was found attached to the medial aspect of the left upper lobe, close to the fissure (Fig. 2). It measured 4 x 3 x 1 cm and was attached to the lung by a pedunculated stalk, 2 cm in length and ½ cm in diameter. There were no adhesions to the surrounding pleura and the tumor itself was free and mobile in the pleural cavity. The lesion was recognized as a benign lesion and was removed with a 1 cm rim of normal lung tissue surrounding the base of the stalk. The patient’s postoperative course was quite uneventful and she was discharged on her seventh postoperative day.

![Figure 1a](image1a.png)
![Figure 1b](image1b.png)

Figure 1a: Note the mass located below and slightly lateral to the aortic arch. Figure 1b: The lateral view places the mass at the aortic plane with the larger lobe posteriorly.
The specimen was examined by Dr. Jacob Old of the pathology department who described it as follows: "The specimen consists of a bilobed structure; one of the lobes is larger and the other one is smaller. The entire specimen measures 4.5 x 4.5 x 2.8 cm in maximum dimensions. The external surface is smooth and numerous injected blood vessels are present. The small lobe appears relatively pale and the larger lobe has a pinkish-yellow appearance. Through the sectioned area, the smaller lobe shows a whorled-like surface having a very firm consistency. The larger lobe shows comparatively softer surface being a pale, pinkish, fibrotic consistency. The anterior surface also shows small areas of rather hard, granular, yellowish pale areas suggestive of calcification."

"Microscopically, the tumor is composed of uniform, nonpleomorphic spindle cells with elongated nuclei and fairly abundant cytoplasm which are characteristic of smooth muscle cells (Fig. 3). In occasional areas, an association with cuboidal epithelial cells of bronchial type are noted in papillary arrangement in which the core of the papillary stalks are composed of smooth muscle cells. The tumor is sharply circumscribed by a fibrous tissue sheath. The lesion is a cellular leiomyoma and is histologically benign in appearance."

**DISCUSSION**

Search of the literature shows 14 cases of primary leiomyoma of the lung, seven of which are diagnosed following surgical removal, none being diagnosed as such preoperatively. Three cases were detected on a routine chest roentgenogram as was the case of this report, and four presented with minor symptoms. Leiomyosarcoma, the malignant counterpart of this lesion, usually produces symptoms since this tumor may narrow the bronchus, obstruct the lumen as a ball valve, cause atelectasis, increase in size, or produce fever. Cough, hemoptysis, weight loss, dyspnea, and chest pain are more ominous signs urging fast and efficient treatment. Malignant transformation of a leiomyoma has not been reported.
Neither solitary leiomyoma nor leiomyosarcoma bears a relationship to multiple leiomyotosis of the lung, a lesion which is apparently similar to neurofibromatosis.\(^4\) Leiomyoma stands fourth in frequency of the primary mesodermal tumors of the lungs, being preceded by fibroma, chondroma, and lipoma.\(^4\) They arise from the bronchi, vessels, and heterotrophic islands of smooth muscles. The lesion is firm and is usually encapsulated. Only one of the previously reported cases was attached to the bronchus subepithelially and functioned as a ball valve. It measured 1 cm and intermittently obstructed the left upper lobe bronchus.\(^4\)

On cut section, these tumors uniformly show the white, interlacing whorls of tissue characteristic of leiomyomas located elsewhere in the body. Microscopically, they show smooth muscle in various arrangements. There are areas suggestive of calcification present, but no necrosis.

In summary, this case was presented to illustrate the rarity of primary leiomyoma of the lung. These lesions seldom give symptoms, are benign, and should be surgically removed.

REFERENCES


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Figure 3 (a,b,c): The smooth muscle cells are shown in views from three different areas of tumor.