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Case Report / Olgu Sunumu

Primary pulmonary meningioma: A case report

Primer pulmoner menenjiyom: Olgu sunumu

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ABSTRACT

Meningioma is a common benign tumor originating in the brain, but primary pulmonary meningioma is very rare. It is usually benign, slow-growing, and responds well to treatment. The most common manifestation is an isolated pulmonary nodule that radiologically resembles a benign primary lung tumor. Herein, we report a case of a complete thoracoscopic resection of a primary pulmonary meningioma.

Keywords: Lung, meningioma, primary pulmonary meningioma.

ÖZ

Menenjiyom beyinden köken alan sık görülen bir benign tümör olup, primer pulmoner menenjiyom çok nadirdir. Genellikle benign olup, yavaş büyür ve tedaviye iyi yanıt verir. En sık görülen bulgusu, radyolojik olarak benign primer akciğer tümörüne benzeyen izole pulmoner nodüldür. Bu yazıda, primer pulmoner menenjiyomun torakoskopi ile tam rezeke edildiği bir olgu sunuldu.

Anahtar sözcükler: Akciğer, meningioma, primer pulmoner meningioma.

Primary pulmonary meningioma (PPM), known as a pulmonary ectopic meningioma, is a rare type of primary extracranial meningioma. In 1982, Erlandson reported the first case of primary pulmonary meningioma, and most of them were reported in the form of individual cases.[1] Since the first report in the literature, most cases have been described in the form of individual cases. In this article, we report a case of PPM in the light of literature data.

CASE REPORT

A 48-year-old male patient was hospitalized for a pulmonary shadow found in physical examination one week ago. Thoracic computed tomography (CT) indicated a right lower lung nodule, like round, with clear boundary and 2.1×1.8 cm in size (Figure 1). The patient had no previous history of any specific respiratory disease, and no abnormalities could be found in the central nervous system examination and on cranial CT scan. Preoperative diagnosis was a right lower lung tumor (benign lesion firstly considered). Preoperative examination showed no contraindications and thoracoscopic resection of right lower lung tumor was performed. Intraoperative exploration revealed that the mass was located in the posterior basal segment of the right lower lung with no surface pleural depression signs. The surrounding type was close to the diaphragm for round and tough with about 2.0 cm in diameter. Wedge resection of the mass was performed in the lower lobe of the right lung. The pathological examination in frozen-section tissue showed a spindle cell tumor in right lower lung with a benign tendency. No enlarged resection was performed. This patient recovered well and was discharged from the hospital. Routine pathology of the resected specimens of right lower lung mass

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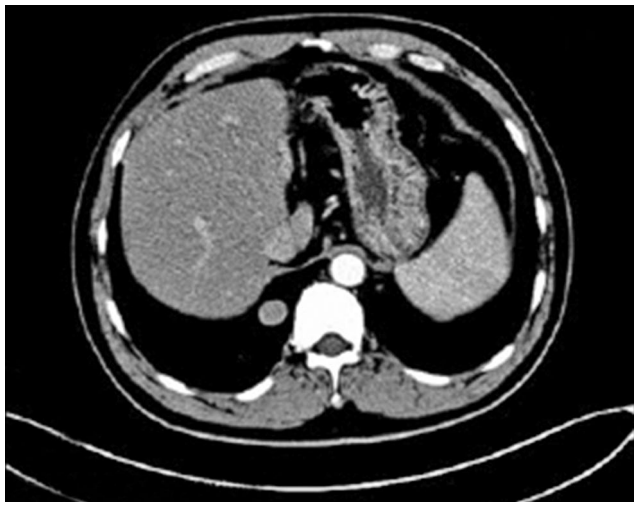

Figure 1. Preoperative thoracic computed tomograph showing high-density regular mass in the right lower lung.

revealed a right lower lung fibrous meningioma with 2.0×2.0×1.8 cm in size and a negative pulmonary resection margin. Immunohistochemical staining revealed glial fibrillary acidic protein (GFAP) (-), epithelial membrane antigen (EMA) (+) oven, creatine kinase (CK) panel (-), neural specific protein-100 (S-100) (+ +) and vimentin (-).

The patient was followed for five years after surgery and no signs of the metastasis or the recurrence for the tumor were found.

DISCUSSION

Meningioma is a common type of intracranial tumor, which accounts for about 20% of the carcinoma cases.[2] Primary extracranial meningiomas are rare and are mainly localized in head and neck, skin, and peripheral nerves. However, PPM is rarer in primary extracranial meningiomas with less than 45 cases found in China and abroad since Erlandson[1] firstly reported.

In general, PPM is a benign tumor with no specific clinical symptoms. On physical examination, the clinical features in most cases include cough, sputum and other discomforts due to the location of the tumor.[2] We believe that the benign tumor may cause local expansion of lung due to its size and location, resulting in certain symptoms of such as dysphagia and chest pain.

There are imaging modalities to be used in the diagnosis of PPM. Chest X-ray, the first-line examination tool for PPM, can show a rounded nodule, while small masses may be overlooked. Computed tomography, the main diagnostic tool currently, can be helpful to determine the size, shape, outline and density of the mass of the tumor, which can also be used to differentiate with other lung diseases. However, PPM cannot be solely confirmed by imaging modalities. Currently, the diagnosis of this disease should meet the following requirements: *(i)* the tumor occur in the lung; *(ii)* no central nervous system lesion can be found by other imaging studies and metastasis in lung should be excluded; and *(iii)* meningioma morphology can be observed in pathology and immunohistochemical characteristics including the positive EMA and vimentin. Moreover, other markers such as CK, S-100 protein, and CD34 are also expressed to different degrees.[3]

Although PPM is mainly benign, morphological examination should be performed using microscope and molecular characteristics should be identified by immunohistochemical staining for definitive diagnosis. Currently, surgery is the preferred treatment for PPM and thoracoscopic wedge-shaped pulmonary resection is the main method.[2,4]

Moreover, the options for further treatment should be determined according to the pathological results by intraoperative frozen-section analysis.[2] In our center, lobectomy is not recommended, unless the tumor is located in the center of the lung with no wedge-shape to reduce the risk of overtreatment. After surgical resection completely, most patients with PPM have good prognosis with no metastasis or recurrence for a long postoperative survival time.[5] However, there are also reports regarding metastatic disease of malignancies including bone, lymph node, and liver,[6] although rare.

In conclusion, due to the rare cases, there has little knowledge about primary pulmonary meningioma currently. Based on the existing literature, most of the patients with primary pulmonary meningioma are benign and surgery is still the first-line treatment for primary pulmonary meningioma. However, we should pay attention to the possibility of malignant tumors and the principle of no tumor during operation to reduce the risk of recurrence. The characteristics of primary pulmonary meningioma need to be continuously summarized in the future to improve the recognition of this disease.

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Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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