

EDİTÖRE MEKTUP / LETTER TO THE EDITOR

Rare presentation of a posterior mediastinal schwannoma

Posterior mediastinal kistik schwannomun nadir prezentasyonu

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Cukurova Medical Journal 2020;45(2):760-762

To the Editor,

Neurogenic tumors are the common- est posterior mediastinal tumors accounting for 80% of all posterior mediastinal tumors. They originate from the spinal cord, sympathetic ganglia, or peripheral nerve roots¹. A schwannoma is a slow-growing, encapsulated, and benign neurogenic tumor. Fewer than 9% of schwannomas are located in the mediastinum. Posterior mediastinal schwannomas originate from neural crest cells and typically originate from the intercostal nerves¹. Mediastinal schwannomas are often asymptomatic but may present with cough or dyspnea². Although a definitive diagnosis is histopathologically determined, immunohistochemical analysis and electron microscopy can be used to assist diagnosis³. We introduce a case of a benign posterior mediastinal cystic schwannoma incidentally discovered upon computed tomography (CT) imaging in a 48-year-old man who admitted to our hospital with back pain.

A 48-year-old male was applied to our hospital with a history of recurrent left side flank pain for 6-7 years. A physical examination revealed tenderness in the left lumbar area. His respiratory sounds were decreased in the base of the left lung during auscultation. His complete blood count, erythrocyte sedimentation rate, blood urea nitrogen (BUN) level, and creatinine level were normal. A urinalysis showed 115 leukocytes and 98 erythrocytes in his urine. His medical history included urolithiasis approximately 20 years prior. A direct urinary system radiograph showed opacification of the left collecting duct, which was consistent with a staghorn calculus.

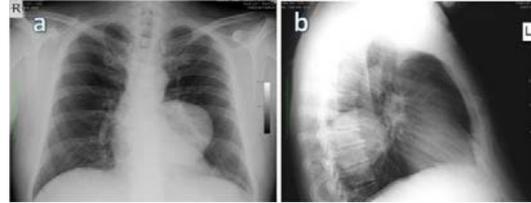


Figure 1 a,b. (A) Posteroanterior graphy shows large well-defined round opacity in the left paracardiac region and left mid zone. (B) Lateral view showing mass in the posterior mediastinum.

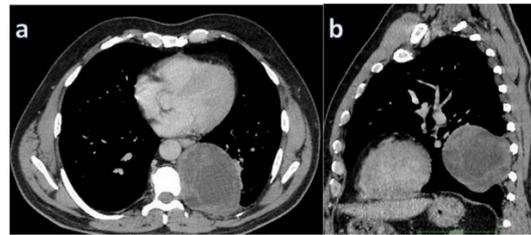


Figure 2 a,b. Axial (A) and sagittal (B) contrast enhanced CT images reveal a well-circumscribed, multiseptated left lower posterior mediastinal paravertebral tumor measuring 8x10 cm in diameter. There were no direct invasion of the tumor to any adjacent structures.

Posteroanterior (PA) and lateral chest radiographs were performed due to the decreased respiratory sounds in the left lung before an operation was conducted for the urolithiasis. The PA chest radiograph (Figure 1a) showed a well-defined 8- to 10-cm paracardiac mass located in the left middle-lower zone. The lateral view (Figure 1b) showed the

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Geliş tarihi/Received: 07.03.2020 Kabul tarihi/Accepted: 07.04.2020 Çevrimçi yayın/Published online: 25.05.2020

mass was located in the posterior mediastinum. Contrast-enhanced thorax CT showed a well-circumscribed, multiseptated, heterogeneous, and contrast-enhanced cystic mass measuring 8x10 cm in the posterior mediastinum in a left paravertebral location without extension into the spinal canal, as can be seen in Figure 2a and b. There was no invasion of the chest wall and main vascular structures. In addition, the CT images ruled out enlarged lymph nodes and pleural effusion. The lesion was considered to be benign due to the characteristics of the lesion. A left posterolateral thoracotomy was performed. The lesion was completely removed without complications. The patient was discharged on the 5th postoperative day. Upon macroscopic examination, hemorrhagic dense viscous fluid was observed in the center of the lesion. Microscopic examination showed spindle cells. An S-100 immunohistochemical stain was positive. The lesion was diagnosed as a schwannoma. The patient did not experience disease recurrence after 1 year of follow-up (Figure 3a and b).

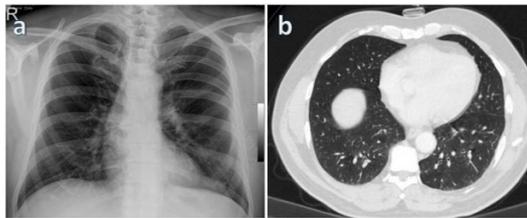


Figure 3 a,b. Post-operative chest radiograph (A) and axial contrast enhanced CT (B) show that there were no residue or recurrent tumor.

Posterior mediastinal masses can be categorized as neurogenic, esophageal, cystic, extramedullary hematopoiesis, or lymphoma according to their origin and morphology. Neurogenic tumors account for 80% of posterior mediastinal masses⁴. Lesions are malignant in about 10- 20% of patients. Posterior mediastinal neurogenic tumors can originate from peripheral nerve roots (e.g., neurofibroma, schwannoma, neurogenic sarcoma), from sympathetic ganglia (e.g., ganglioneuroma, ganglioneuroblastoma, and neuroblastoma), from aorticosympathetic paraganglia (e.g., paravertebral paraganglioma), or rarely, from the intrathoracic spinal canal (e.g., meningocele or meningomyelocele)⁵. Among mediastinal neurogenic tumors, schwannomas and neurofibromas arise from peripheral nerves and are more common in adults, whereas ganglioneuromas and neuroblastomas arise

from sympathetic ganglia and are more common in children.

Schwannomas are often asymptomatic and incidentally detected during imaging. Symptoms may occur due to the compression of adjacent mediastinal structures, such as the airway, esophagus, heart, and great vessels. Although they are rarely malignant, they may cause respiratory symptoms, such as stridor, dyspnea, hemoptysis, and cough, or gastrointestinal symptoms, such as dysphagia, in the case of invasion to local structures⁴.

Schwannomas are mostly solid tumors, some of which may contain cystic degenerations or hemorrhages. Rarely are they completely cystic. Schwannomas originating from the nerve roots are located in the paravertebral area, and those originating from the sympathetic ganglion are located in the anterior vertebral corpus and neural foramen. PA and lateral chest x-rays are usually the first test performed, but a CT scan with intravenous contrast is the most valuable test for mediastinal lesions. Posterior masses usually have an interface with lung and therefore typically have sharp, well-defined margins. In addition, enlargement of the neural foramina, scalloping of posterior vertebral bodies, erosion of the ribs, pleural effusion, and scoliosis can be seen with PA and lateral radiographs. A CT scan is the most commonly used imaging technique for determining the exact location and margins of the tumor and the relationship of the tumor with adjacent structures⁶. In addition, a CT scan can show enlarged intervertebral foramen or the presence of intraspinal extension of a lesion⁵. These tumors are generally sharply margined with homogenous soft tissue density on a CT scan (+25 to +50 HU or sometimes lower because of high amounts of lipids in these neurogenic tumors⁵.

Magnetic resonance imaging (MRI) is not routinely performed for mediastinal masses. However, MRI is better than CT for evaluating the intraspinal extension of these lesions⁷. The signal intensity of the lesion varies depending on the lesion content on T1- and T2-weighted images. Contrast enhancement can change due to the presence of cystic and hemorrhagic areas of the lesion. Rarely, a schwannoma is associated with pleural effusion, which is mostly a reaction to the presence of a pleural tumor or hemorrhage due to the rupture of the tumor. In our case, a paracardiac lesion was incidentally detected by chest X-ray, and CT was performed for differential diagnosis. Contrast-enhanced thorax CT showed a

well-defined, multiseptated, hypodense, heterogeneous, and large lesion in the posterior mediastinum in a paravertebral location without extension into the spinal canal. There was no invasion of the chest wall and main vascular structures. The lesion was considered as benign. A definitive diagnosis was made histopathologically.

Fine needle aspiration biopsies may be inconclusive, as in our patient, and as a result, surgical resection is necessary both for diagnosis and for treatment. Upon histopathological examination, they contain areas of dense spindle cells (Antoni A) and hypocellular stromal areas (Antoni B) and are positive for protein S-100, as in our patient. The prognosis of benign schwannomas is excellent, and surgical treatment is sufficient⁴. Untreated schwannomas that can continue to grow and can affect nearby structures. Also, they start to compress the structures nearby. Rarely, they may show malignant transformation¹. In malignant schwannomas, radiotherapy may be required in addition to surgical treatment⁴. In our case, the lesion was surgically excised without any complication, and the patient did not experience disease recurrence after 1 year of follow-up.

Posterior mediastinal schwannomas are benign, slow-growing neurogenic tumors and are usually asymptomatic. They are usually incidentally detected by imaging methods. The treatment for a schwannoma is surgical excision. Malignant transformation is rarely observed. We presented a case of a large, benign posterior mediastinal cystic schwannoma that was incidentally detected in a 48-year-old male with clinical and imaging findings.

Yazar Katkıları: Çalışma konsepti/Tasarımı: ATS, ME; Veri toplama: ATS, ME; Veri analizi ve yorumlama: ATS, ME; Yazı taslağı: ATS, ME; İçeriğin eleştirel incelenmesi: ATS, ME; Son onay ve sorumluluk: ATS,

ME; Teknik ve malzeme desteği: ATS, ME; Süpervizyon: ATS, ME; Fon sağlama (mevcut ise): yok.

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazarlar çıkar çatışması beyan etmemişlerdir.

Finansal Destek: Yazarlar finansal destek beyan etmemişlerdir.

Author Contributions: Concept/Design : ATS, ME; Data acquisition: ATS, ME; Data analysis and interpretation: ATS, ME; Drafting manuscript: ATS, ME; Critical revision of manuscript: ATS, ME; Final approval and accountability: ATS, ME; Technical or material support: ATS, ME; Supervision: ATS, ME; Securing funding (if available): n/a.

Peer-review: Externally peer-reviewed.

Conflict of Interest: Authors declared no conflict of interest.

Financial Disclosure: Authors declared no financial support

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