

## 흉부 자기 공명 영상에서 악성 소견을 보인 종격동 신경집종의 수술적 치료 : 1예 보고

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=Abstract=

### Surgical Treatment of Mediastinal Schwannoma Showing Malignant Potentiality on Chest Magnetic Resonance Imaging Study : A Case Report

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Neurogenic tumor of various histologic types may arise in the posterior mediastinum. Mediastinal schwannoma is a frequent paraspinal neurogenic tumor, but malignant mediastinal schwannoma is rare tumor which is derived from Schwann cells. Although there are some reports dealing with approach for screening patients with symptoms suggesting malignancy and the imaging criteria for distinguishing malignant from benign schwannoma but the results are not clearly defined. We present a case of high mediastinal schwannoma which was taken for malignancy in imaging studies because of its invasiveness.

**Key Words** : Schwannoma

### 1. Case Report

A 56-year-old male patient was referred to our department because of a left high mediastinal mass on a chest roentgenogram. Both chest computed tomographic scan and magnetic resonance imaging showed a solid, inhomogeneous left posterior mediastinal mass that was 8 cm in diameter, accompanying by irregular 7,8,9th ribs and 8th thoracic vertebrae body erosion.

The mass showed inhomogeneous intermediate signal intensity on T<sub>1</sub>-weighted images(Fig. 1), high intensity on T<sub>2</sub>-weighted images, and necrotic foci within it(Fig. 2). Despite the fact that a histologic examination using percutaneous needle biopsy did not reveal malignant cells, we suspected the tumor to be malignant according to its definitely invasive characteristics revealed on radiologic examinations. Because there was no evidence of metastasis, we performed surgery to confirm the diagnosis. At endoscopic first look, the tumor was well encapsulated and firmly adherent to the chest wall. The tumor was excised en bloc with left 7,8,9th ribs. The intercostal nerve was ligated and resected in the intervertebral foramen between 8th and

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Fig. 1. T1-weighted axial MR image shows a mass lesion with intermediate signal intensity in paraspinal region. Central portion(white arrow) of mass has a somewhat lower intensity than does peripheral portion (black arrow). The mass erodes vertebral body and rib(black arrow heads).



Fig. 2. T2-weighted axial MR image shows a signal intensity of central portion(white arrow) of mass lesion is higher than that of peripheral portion(black arrow). Peripheral portion includes a high signal intensity lesion.

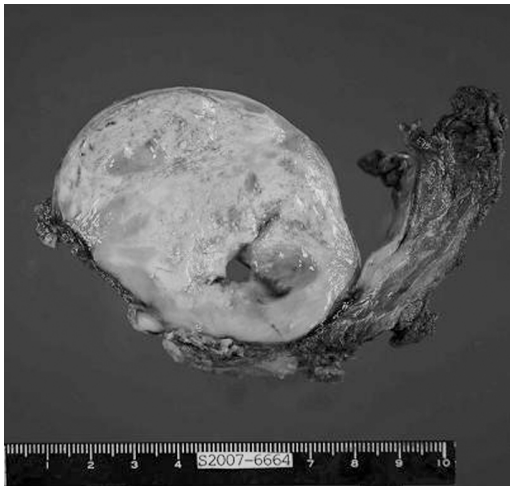


Fig. 3. Specimen is three ribs with attached round mass. The 9x8x5cm sized mass is located in the internal surface of ribs. It is encapsulated and glistening. Cut surface of the mass shows myxoid appearance, necrosis and cystic change.

9th thoracic vertebrae. Chest wall was reconstructed using 2mm GORE-TEX® soft tissue patch securely.

The cut surface of the resected specimen were yellow-brown myxoid appearance with necrotic foci and had the consistency of rubber with a thick capsule(Fig. 3). Histologic examination and Immunocytochemistry revealed benign schwannoma. There was no tumor extension to the margin of resected ribs. The postoperative course was uneventful and the patient was discharged 17days after surgery

## II. Review

Intrathoracic neurogenic tumors were reported to represent 75% to 95% of tumors in the posterior mediastinum.<sup>1, 2)</sup> Schwannoma is a frequent paraspinal neurogenic tumor but malignant schwannoma is an aggressive rare neoplasm and its incidence is about 10% of soft tissue sarcoma. Malignant schwannoma may manifest as a solitary tumor or may be one manifestation of neurofibromatosis. The reported incidences about the latter ranges from 2% to 29%.<sup>3-6)</sup>

The prognosis of malignant schwannoma is stern. The 5 year survival of malignant schwannoma combined with neurofibromatosis is as low as 23%, 47% in malignant schwannoma alone by contrast.<sup>7)</sup> At present, surgical indications may be carefully determined in cases with no evidence of metastasis and with imaging that indicate the possibility of malignancy. However, the problem is how to make an accurate preoperative diagnosis of malignant schwannoma. MRI findings have been reported to enable histological comparison of intrathoracic neurogenic tumors. Sakai et al. reported that typical MRI findings among frequent intrathoracic neurogenic tumors<sup>8)</sup> but it is still questionable that MRI has been useful to distinguish benign intrathoracic neurogenic tumor from malignant variant histologically. In our case, en bloc excision seemed feasible as a curative resection because the tumor revealed aggressive behavior with typical MRI findings of schwannoma.

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