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An asymptomatic schwannoma originating from an intercostal nerve: A case report

İnterkostal sinir kaynaklı asemptomatik schwannoma: Olgu sunumu

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Schwannomas are usually solitary, encapsulated, and asymptomatic lesions which mostly originate from the nerve sheath or schwann cells. The majority of these lesions of the thoracic cavity are located in the mediastinum. In this article, we report a rare case of an intercostal nerve schwannoma.

Key words: Intercostal nerve; schwannoma; surgery.

Schwannomalar sinir kılıfından veya schwann hücrelerinden köken alan, sıklıkla soliter, kapsüle ve asemptomatik lezyonlardır. Toraks içindeki lezyonların büyük çoğunluğu mediasten içinde yer almaktadır. Bu yazıda, interkostal sinirden kaynaklı nadir bir schwannoma olgusu sunuldu.

Anahtar sözcükler: İnterkostal sinir; schwannoma; cerrahi.

Schwannomas originate from the schwann cells of peripheral nerve sheaths and account for 5% of benign soft tissue tumors. These extramedullary tumors may sometimes exit the intervertebral foramina and, following the spinal nerve roots, may lead to a dumbbell-shaped mass. Complete surgical resection is the main treatment.[1-3] We report a rare case of an asymptomatic schwannoma originating from an intercostal nerve that was treated successfully with surgery.

CASE REPORT

A 33-year-old man was admitted to the hospital with left sided pain. He has no history of tobacco use, and there were no inherited factors or marked diseases in his family. No significant medical history was noted other than a minor trauma as a result of a fall while walking a week prior to his admission. A right-sided, well-shaped opacity with a size of nearly 2 cm in diameter localised at the 5th intercostal space, is detected at his chest X-ray (Figure 1). Computed tomography (CT) of the chest (Figure 2) revealed a well-formed, homogenous, solitary lesion 4.5x3 cm in size with a high liquid density of 39 Hounsfield units (HU) inside. The mass lesion was connected to the chest wall and localized extraparenchymally adjacent to the lateral segment of the middle lobe of the right lung.

Physical examinations and laboratory data revealed no noticeable abnormalities, except for a mild sinus tachycardia. An ultrasonography-guided fine needle aspiration biopsy was not diagnostic, and the patient underwent surgical exploration to determine the final histological diagnosis. A well-encapsulated 5x4.5x3.5 cm tumor of extrapleural origin arising from the intercostal nerve along the fourth and fifth ribs with no intracanalicular extension was isolated with a complete surgical resection. The histological diagnosis was ancient schwannoma. The postoperative course was uneventful, and the patient was discharged on postoperative day eight. As of his first-year follow-up, the patient was symptom-free.

DISCUSSION

Schwannoma is a benign nerve sheath tumor that is the most common neurogenic tumor of the thorax. It is rarely seen in people before the age of 20.[4] The yearly

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Figure 1. Preoperative chest radiograph of the patient.

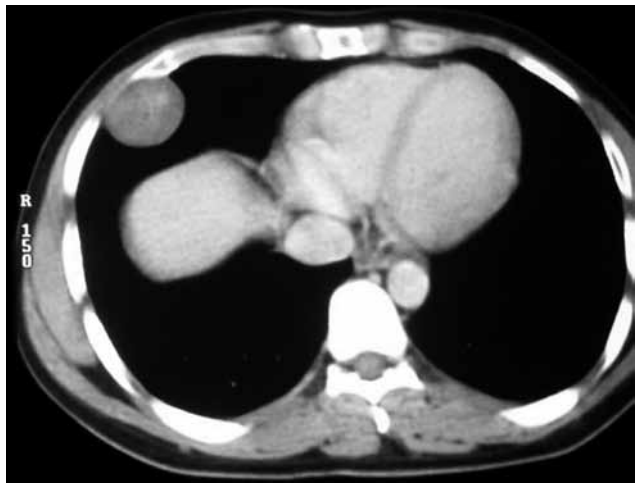

Figure 2. Preoperative computed tomography of the patient.

incidence is 3-4/106. Schwannomas are basically soft-tissue neoplasms usually found in the head and neck, extremities, mediastinum, and retroperitoneum. In 1910, Verocay[5] reported a schwannoma as a true neoplasm originating from the schwann cells which contained no neuroganglion cells. In 1935, schwannoma was defined as arising from the nerve sheaths and was also known as neuroma, neurilemmoma, or perineurofibroblastoma. Since then, schwannomas have been described in almost every location of the body. Fewer than 10% of primary neural tumors of the chest originate peripherally from the intercostal nerves, with most of them originating in the mediastinum. Approximately 16% of these tumors are malignant schwannomas.[6]

Most patients with primary tumors of the intercostal nerve are asymptomatic. Schwannoma is often symptom-free and is usually found incidentally. When symptomatic, these tumors typically cause radicular pain that is distributed along the course of the affected nerve.[6,7]

On gross pathological analysis, schwannomas appear as sharply circumscribed, encapsulated, spherical soft-tissue masses with no nerve fibers passing through them. The neoplasm demonstrates two growth patterns. The predominantly cellular area is composed of spindle-shaped schwann cells with little stromal matrix in the Antoni type A tissue. Classical Verocay bodies are seen in these areas as nuclear-free zones. Antoni type B tissue is also present and is found in areas with less cells with myxoid and microcyst formation. The intercostal ancient schwannoma is a rare variant of a neurilemmoma and shows degenerative histological changes which may lead to a mistaken diagnosis of malignant neoplasm and can mimic pulmonary neoplasm in chest radiographs and thoracic CT. Chest radiography usually shows a smooth round or oval mass, but it also can appear as a well-circumscribed, round mass that is of homogenous soft-tissue density on plain CT images. The mass is rarely calcified, inferior and superior sulci are usually present.[4,8] While bone changes on plain films are generally late manifestations of schwannomas, there are some findings that can help narrow the differential diagnosis. Bone changes, such as erosion of the ribs, may occur as well as neural foraminal enlargement and vertebral body erosion. A definitive diagnosis is possible only after histopathological examination.[9,10]

An intercostal schwannoma should be considered in the differential diagnosis of intercostal neuralgia, and a chest radiograph is often sufficient to demonstrate this rare, but treatable condition. Rib erosion with a sclerotic border is suggestive of a benign lesion; however, erosion which spreads to multiple ribs suggests malignancy. Malignant transformation also has been reported in 10% of schwannomatosis cases.[4]

A simple complete resection is the best choice for the lesions detected radiologically which are thought to be benign. Radiotherapy applied locally may be preferable for technically incomplete, partially resectable malignant schwannomas.

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