Case Report

Primary Lung Schwannoma: A Rare Benign Tumour

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Abstract

Schwannoma or neurilemmoma is a benign tumour arising from the nerve-sheath, with spinal nerve roots being the most common primary location. Though neurogenic tumours are common in the mediastinum, primary neurogenic tumours arising from lung parenchyma are very rare. Here we report a case of a primary lung schwannoma and its management. **[Indian J Chest Dis Allied Sci 2018;60:153-154]**

Key words: Lung, Neurogenic tumours, Intrapulmonary lung schwannoma.

Introduction

Schwannoma or neurilemmoma commonly arises from the peripheral nerves. Chest wall, spinal roots, mediastinum are the common sites of its origin. Schwannoma arising from lung parenchyma is very rare. Here, we report a case of a primary lung schwannoma.

Case Report

A 40-year-old healthy, non-smoking male was found to have a lesion in the left lower lobe of lung on chest radiography done during a routine health evaluation. Routine blood investigations, ultrasonography of abdomen and echocardiogram were normal. Contrast-enhanced computed tomography (CECT) of the chest and abdomen showed a well-defined, homogeneous and radio-dense lesion (7.4cm×6.6cm×7.4cm) in the lower lobe of the left lung. There was no significant mediastinal or hilar lymphadenopathy (Figure 1). Liver and adrenals were normal on CECT. Bronchoscopy revealed a peripherally located endobronchial growth in the anterior segment of the left lower lobe at 4cm from the carina and completely obscuring the corresponding segmental bronchus. Endobronchial biopsies, taken from the lesion, revealed elongated and compactly arranged cells with nuclear palisading, set out in a collagen stroma (Figure 2A). Immunohistochemistry of the spindle cells were positive for S-100. Histological features were suggestive of a schwannoma. Based on these investigations, a decision was made to proceed with left postero-lateral thoracotomy and tumour excision or left lower lobectomy. Intra-operatively, the tumour was located in the left lower lobe, abutting oblique fissure and well encapsulated, smooth surfaced and could be easily separated from the adjacent normal lung tissue. Tumour was excised with closure of the segmental bronchus. Rest of the left lower and upper

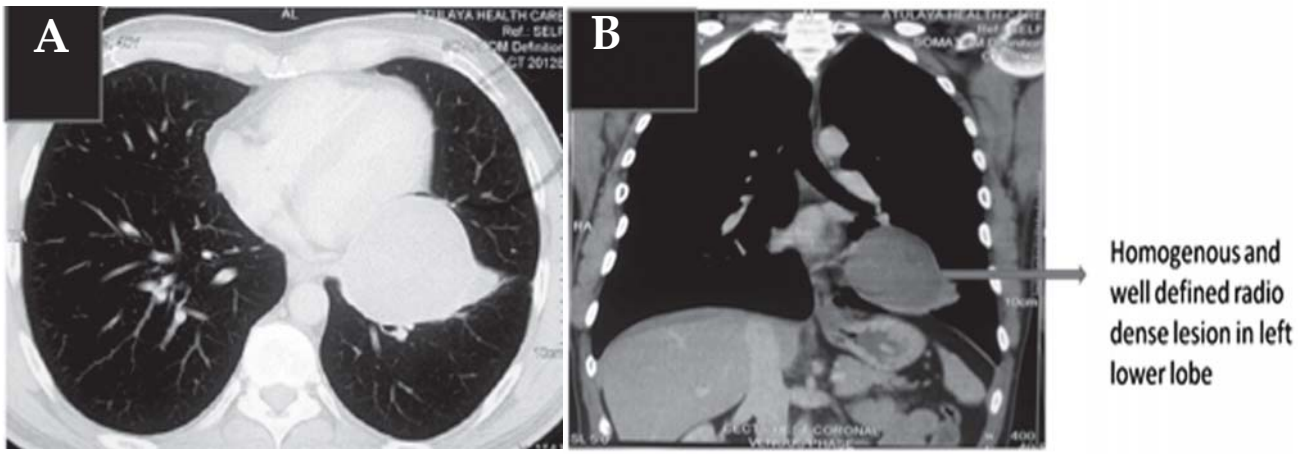

Figure 1. Computerised enhanced computed tomography of chest [A] amd abdomen [B] showing a homogeneous and well-defined radio-dense lesion in the left lower lobe.

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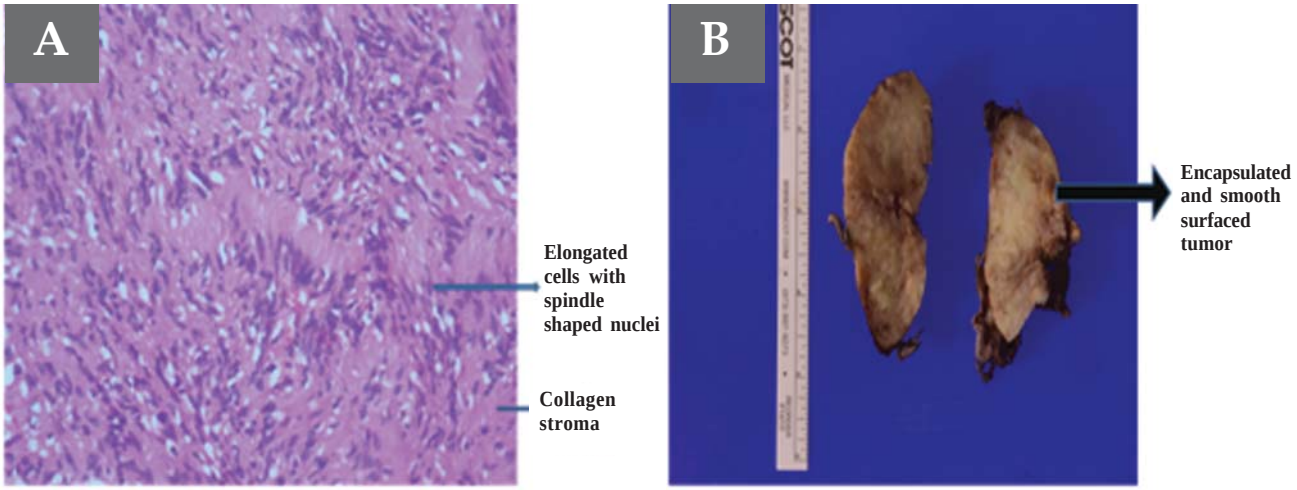

Figure 2. Microscopic appearance of the tumour showing [A] elongated cells with spindle-shaped nuclei in collagen stroma and [B] macroscopic appearance of the tumour.

lobes were normal, and no hilar lymphadenopathy was observed intra-operatively. On cut-section, the specimen appeared solid, greyish-white, well-encapsulated, homogeneous, measuring 6cm×6cm×5cm (Figure 2B). Post-operative period was uneventful and the patient was discharged on 8th post-operative day. Final histopathology of the operative specimen was consistent with schwannoma.

Discussion

Schwannoma or neurilemmoma is a benign tumour arising from nerve-sheath and spinal nerve roots are the most common primary location. Though neurogenic tumours are common in the mediastinum, primary neurogenic tumours arising from lung parenchyma are very rare.[1] Schwannoma accounts for only 0.2% of all primary lung neoplasms.[2] Though lung schwannomas can occur in any age group, these are extremely rare in pediatric population. These tumours arise from the peripheral nerves located within the bronchial wall.[3] Malignant transformation is rarely seen in schwannomas. The level of expression of Ki67, a marker for tumour cell proliferation, has been reported to be useful in determining the malignant potential of these tumours.[2]

Although it is a benign tumour, schwannoma may show high level of fluorodeoxyglucose (FDG) uptake, making it difficult to differentiate it from malignant tumours on positron emission tomography (PET). Bronchoscopy and transbronchial biopsy is useful to achieve a pre-operative diagnosis. Endobronchial ultrasound-guided transbronchial needle aspiration is useful to evaluate the tumours located peripherally, those are beyond the reach of regular bronchoscopy.[4]

Histologically, a typical schwannoma is sharply circumscribed by a thin fibrous capsule which is formed by compression of perineurial tissue. Two types of tissue (Antoni A and B) are found. Antoni type A (cellular pattern) composed of compactly arranged spindle cells with elongated nuclei disposed in parallel rows, creating a pattern of palisades. Admixed with this or in separate areas, the tumour has a less cellular Antoni type B pattern with elongated cells arranged in an irregular fashion and separated from one another by a matrix that stains poorly. Identification of S-100 protein on immunohistochemistry helps delineate the cells of schwannian origin.

Surgical resection, endobronchial resection and Yttrium Aluminum Garnet (YAG) laser resection are the treatment of choice for primary intra-pulmonary schwannomas. However, surgery is the preferred treatment modality in lung schwannoma.[5] As these tumours have low malignant potential, tumour excision or partial lung resection is considered adequate. Lobectomy or pneumonectomy may be required for centrally located tumours and in cases where malignancy could not be ruled out pre-operatively.

References

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