

Endobronchial Myoepithelioma - A Rare Pulmonary Tumour

Divya Dahiya

Abstract

An uncommon case of endobronchial myoepithelioma is being presented. Patient presented with progressively increasing obstructive and irritative respiratory symptoms. A well-circumscribed homogenous endobronchial lesion was detected on computed tomography involving the right main bronchus. Microscopic examination showed no evidence of invasion into bronchial mucosa and surrounding lung tissue. On immuno-staining by PAP method, tumor cells showed positivity for S-100 protein, vimentin and smooth muscle actin. The patient is healthy and free of recurrence four years after right lower lobectomy.

Key Words

Endobronchial myoepithelioma, Myoepithelioma, Pulmonary neoplasm.

Introduction

Myoepithelioma of lung is a low-grade malignant tumour originating from myoepithelial cells of bronchial mucous glands. It is characterised ultrastructurally by the presence of myofilaments and immunologically by the expression of S-100 protein, vimentin and smooth muscle actin. A patient with endobronchial myoepithelioma with review of the literature is being presented.

Case Report

A 40-year female presented with progressively increasing obstructive and irritative respiratory symptoms (breathlessness, wheeze and haemoptysis) of one-year duration. On examination her respiratory rate was 30 per minute, audible wheeze was present and trachea was shifted towards right side. On auscultation there was marked decrease in air entry on right side. Rest of the general physical and systemic examination was essentially normal. Chest X-ray showed collapse of right lower lobe with shift of mediastinum towards right. Computed tomography (Fig 1) revealed a well-circumscribed, homogenous endobronchial lesion involving right main bronchus with atelectasis of right lower lobe and mediastinal shift towards right. There

was no hilar lymphadenopathy or involvement of mediastinal structures. Fiberoptic bronchoscopy showed intraluminal tumour in right main bronchus; biopsy was not taken. Routine laboratory investigations were within normal limits.



Fig. 1: Computed tomography scan showing a well-defined, circumscscribed homogenous endobronchial lesion involving right main bronchus with mediastinal shift towards right.

She was subjected to right posterolateral thoracotomy and right lower lobectomy was done. Grossly, a seven centimetre greyish-yellow, firm, well-circumscribed tumour was present in hyparterial segment of right main bronchus with extension into bronchial tree of lower lobe (Fig.2). Microscopic examination of hematoxylin and

From the Department of Hepatobiliary Unit, Inderprasth Apollo Hospital, New Delhi

Correspondence to : Divya Dahiya, Associate Consultant, Hepatobiliary Unit Inderprasth Apollo Hospital, New Delhi

eosin stained paraffin sections (Fig 3 and Fig 4) revealed a well-circumscribed tumour composed of sheets of cells having spindle to round to oval nuclei with vesiculation and inconspicuous nucleoli. These tumour cells were seen intermingled closely with fine strands of collagen and loose areolar tissue, in which these discrete bundles of spindle cells were present. The bronchial mucosa was lifted up by the tumour with no evidence of invasion into it and surrounding lung tissue. No nuclear pleomorphism, hyperchromatism or atypical mitosis was seen. On immunostaining by PAP method, tumour cells showed positivity for S-100 protein, vimentin and smooth muscle actin.

She had an uneventful recovery and postoperative chest X-ray showed expansion of right lung with correction of mediastinal shift. She is free of disease, four years after her surgical treatment.

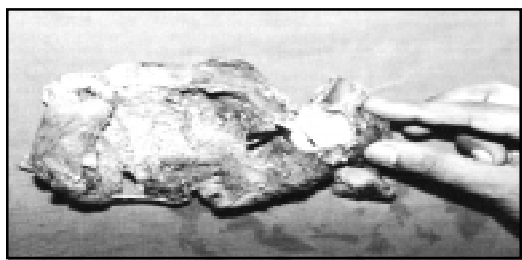


Fig. 2 Operative specimen showing endobronchial lesion

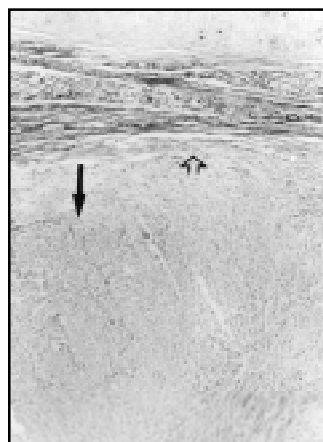


Fig- 3



Fig- 4

Fig. 3 Low power photomicrograph of H&E stained sections to show the well circumscribed mass (arrows) with adjacent bronchial cartilage (arrow head) (H&E, X55)

Fig. 4 High power photomicrograph to show the character of individual tumour cell, round to oval to spindle shaped nuclei with pale moderate to abundant clear cytoplasm and minimal nuclear anaplasia (H&E, X550)

Discussion

Myoepithelial cells are normal components of salivary glands, sweat glands and breast. Although they are frequently distributed in the bronchial mucous glands, a few tumours of myoepithelial origin have been reported in the lung. The first case of myoepithelioma of lung was reported by Strickler et al (1). Sekine et al (2) and Cagirici et al (3) have also reported one case each of myoepithelioma of lung; but all these tumours were peripheral in location. Endobronchial myoepithelioma was first described by Higashiyama et al (4) in two cases. Our patient also had an endobronchial lesion involving right main bronchus.

These tumours are well-circumscribed lesions characterised ultrastructurally by demonstrating myofilaments measuring 6 nm in diameter and immunohistochemically spindle cells show reactivity for S-100 protein, vimentin and smooth muscle actin. (5, 6)

Myoepithelioma is a low grade neoplasm and has been managed by excision of tumour with histologically negative margins.(1,3) Metastasis after surgery, was reported in the forearm and hip muscles in one case and in the liver in another patient with endobronchial myoepithelioma.(4) Malignant potential has also been described in spindle and clear cell variants especially in parotid gland and breast.(6,7) Use of conservative resection may be a satisfactory option for this tumour but its malignant potential necessitate a close follow-up.

References

- 1 Strickler JG, Hegstrom J, Thomas MT, Yousem SA. Myoepithelioma of the lung. *Arch Pathol Lab Med* 1987; 111: 1082-85.
- 2 Sekine I, Kodama T, Yokose T et al Rare pulmonary tumours- a review of 32 cases. *Oncology* 1998;55: 341-42.
- 3 Cagirici U, Sayiner A, Irci I, Veal A. Myoepithelioma of the lung. *Eur J Cardiothorac Surg* 2000; 17(2): 187-89.
- 4 Higashiyama M, Kodama K, Yokouchi H et al. Myoepithelioma of the lung: report of two cases and review of the literature. *Lung Cancer* 1998;20: 47-56.
- 5 Morinaga S, Nakajima T and Shimozato Y. Normal and neoplastic myoepithelial cells in salivary glands: an immunohistochemical study. *Hum Pathol* 1987;18: 1218-26.
- 6 Rosai J. Major and Minor Salivary Glands. In: Starzithi G (editor) *Ackerman's Surgical Pathology*. 7th ed. Mosby, St Louis, Missouri, 1989 pp 655-57.
- 7 Luna MA, Batsakis JG, Ordóñez NG, Mackay B, Tortoledo ME. Salivary gland adenocarcinoma. A clinicopathological analysis of three distinctive types. *Semin Diagn Pathol* 1987; 4: 117-35.