INTERNATIONAL JOURNAL OF MEDICAL AND APPLIED SCIENCES
E-ISSN:2320-3137

Case Report

A RARE CASE OF GIANT ENDOBRONCHIAL FIBROEPITHELIAL INFLAMMATORY POLYP IN ELDERY FEMALE

Bhupendra Jain[1], Anand Verma[2], Ashok Bajpai[3], R P Chordiya[4], Satish Motiwale[5], Amit Verma[6]

Assistant Professor[1], Professor[3], Professor and Head[4], Professor[5] Department of Respiratory Disease, Associate Professor Department of Medicine[2] , Professor and Head Department of Pathology[6]

Sri Aurobindo Medical College and PG Institute, Indore-Ujjain State Highway,Near MR10 Crossing Indore, Madhya Pradesh (INDIA) 452004

Corresponding Author: Dr Bhupendra Jain

ABSTRACT

Benign endobronchial mass of tracheobronchial tree is uncommon entity.We report a case of giant fibroepithelial polyp protruding from left main bronchus in a 50 year old eldery female which was clinically mistaken as endobronchial malignancy. We are presenting review literature of inflammatory bronchial polyp including mechanism of polyp formation, diagnosis and various treatment option .

Key words: Giant endobronchial polyp, Electrocautery,

INTRODUCTION

Benign neoplasms made up 5-10% of endobronchial tumour . Endobronchial polyp are generally inflammatory and are possibly due to chronic irritation or reactive response to recurrent infection or foreign body . Benign bronchial polyps need to be differentiated from papillomas histopathologically as the papillomas have neoplastic potential. Benign endobronchial polyp can be treated successfully with Electrocautery or Laser theraphy under bronchoscopic guidance.

A 50 Year old eldery female patient was admitted with complaints of fever, cough with expectoration , shortness of breadth and pain on left side of chest since last 1 month. she has given history of yellowish – brown muco - purulent sputum with no postural or diurnal variation. she also complaints of left side chest pain which increased with coughing and deep inspiration.

There was no past history of childhood asthma ,tuberculosis or cardiac disease. She had no history of smoking or alcohol addiction. There was no lymphadenopathy , but clubbing was present . Her chest examination revealed few crepts and bronchial breadthing on left infrascapular and left infraaxillary region.

Her radiograph of chest was interpreted as pneumonic consolidation of left lower zone with positive silhouette sign and total white blood cell count was increased with Neutrophil predominance .Her sputum examination did not revealed any AFB ,Gmstain

fungus or malignant cell. Patient was treated with ceftriaxone and azithromycin with supportive treatment for one week.Her white blood cell count became normal and fever subsided after one week, but radiograph of chest did not revealed any improvement after antibiotic treatment.

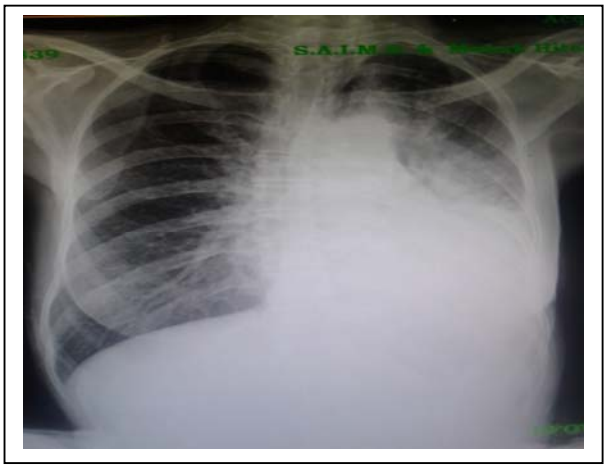

Fig 1 Chest skiagram showing consolidation left lower zone with positive silhouette sign .

On clinical examination bronchial breadth sound disappeared but few crepts still persists on Left infrascapular region and Left infraaxillary region. So Fibreoptic bronchoscopy was planned which revealed irregular fleshy polypoidal pinkish mass of size 2.5cm X 0.5 cm with broad base protruding from left main bronchus over which whitish granulation slough was deposited .The polypoidal mass was occluding 95% of left main bronchus and possibly having origin from left lower lobe bronchus . Clinically impression of endobronchial malignant mass was kept. During bronchoscopy multiple tiny bits of endobronchial biopsy was taken for Histopathological examintion and Broncho- alveolar Lavage was sent for microbiological analysis. Cytological examination of the bronchial aspirate and post- bronchoscopy sputum revealed normal bronchial epithelial cells along with polymorphonuclear and mononuclear leukocytes but no malignant cells.

Figure2. Endobronchial Irregular Fleshy Pinkish growth protruding from Left main bronchus with whitish granulation slough deposition

Histopathological examination revealed Inflammatory polypoidal mass composed of mixed inflammatory cell infiltrate and fibrovascular core which is lined by stratified squamous epithelium. The lesion was lined by slightly thickened squamous mucosa and the underlying fibrovascular stroma contained prominent vessels. Diagnosis of Benign fibroepithelial inflammatory polyp was kept . In view of unexpected biopsy report suggesting a benign nature of the lesion, a rigid bronchoscopy was performed and the entire endobronchial mass was removed piece by piece with help of electocautery forcep.

The post-bronchoscopy period was uneventful and aeration was restored successfully in the affected area . The biopsy report again confirmed an endobronchial benign inflammatory polyp and no malignant cells were seen. A subsequent X-ray chest after four weeks revealed complete resolution of the pulmonary parenchymal infiltrates on left lower zone. The patient was then discharged from hospital 30 days after admission.Three months after the discharge, she was still well and free of respiratory symptoms.

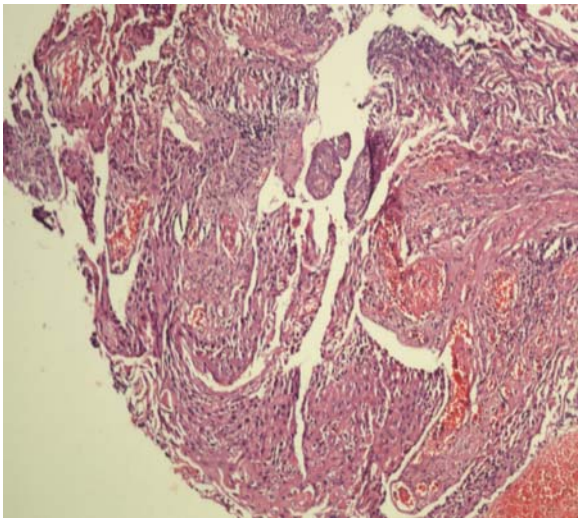

Figure 3 (10X view) Polypoidal Mass With fibrovascular core lined with Stratified squamous epithelium

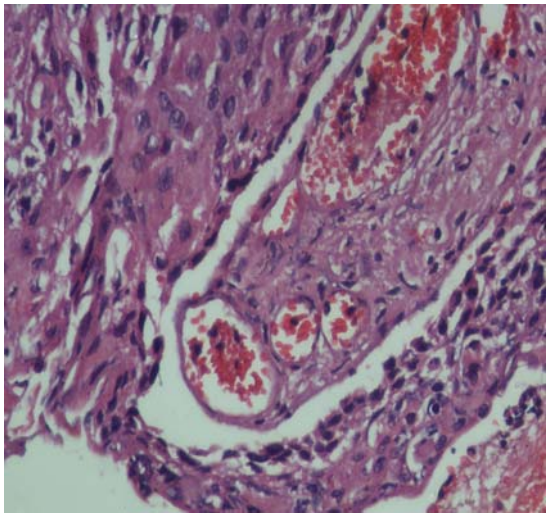

Figure 4 40X view of endobronchial mass showing Fibrovascular core with congested vessels and stratified squamous epithelial lining.

DISCUSSION:

Tumour that most commonly arise in the trachea or major bronchial tree are Papilloma ,Granular cell myoblastoma ,Lipoma ,Fibroma ,Miscellaneous tracheal tumors, Polyps ,Hemangioma ,Lymphangioma ,Tracheopathia osteoplastic. Tumors arising with equal frequency in the trachea or major bronchial tree and distal bronchial tree or lung parenchyma are Leiomyoma and Neurogenic tumors[1] In a series of 63 benign tracheobronchial tumours, only seven (11%) were due to inflammatory polyps [2]

Inflammatory polyps are solitary benign endobronchial lesions whose stromal configuration consists of well-formed fibrous connective tissue with or without inflammatory cell infiltration, covered with stratified squamous epithelium or normal bronchial mucosa[3].Benign bronchial polyps need to be differentiated from papillomas as the latter having neoplastic potential. Endobronchial squamous papillomas may be solitary or multiple and consist of marked fingerlike proliferations of squamous epithelium supported by a relatively avascular, delicate fibrous tissue stroma[3].
Inflammatory bronchial polyps in the respiratory system are classified as tumor-like lesions (8.11) according to the WHO classification which was published in 1999 [4].

Bronchial polyps are more or less reddish, fleshy, velvety tumors with prominent superficial vessels, and this appearance explains the frequent occurrence of hemoptysis as a major symptom. These tumors are often pedunculated, but at times they are sessile. They are characteristically located in the main bronchi or in their principal branches close to their origin or bifurcation.[5]
The etiology of inflammatory polyps is still obscure but it has been postulated that polyp could be inflammatory reaction to various reactive stimuli. When a break in the mucosa occurs, granulation tissue may develop with subsequent replacement by fibrous tissue and epithelialization to form the polyp[6,7]. Whether the polyp is pedunculated or sessile depends upon the nature of the fibrous connective tissue stroma of polyp attached to bronchial wall .

Some polyps are inflammatory and are possibly due to chronic irritation or foreign body reaction.[8] There are reports of bronchial polyps being associated with asthma [9,10] chronic smoke inhalation[11], thermal injury[12], bronchiectasis[13] and titanium tetrachloride injury[14].
Clinical presentation is varied and partly depends on the etiology or associated condition. Presenting symptoms can include cough, sputum production, fever , hemoptysis, wheezing, and dyspnea. Patients can be misdiagnosed with asthma, or present with recurrent lower respiratory tract infections in the same lobe due to localized obstruction. Endobronchial polyps can block the lumen and complicate the drainage by localized obstruction leading to collapse , secondary pneumonia, abscess, and bronchiectasis
Chest radiograph is non specific and may demonstrate a pneumonic consolidation or collapse of involved lobe of lung.
Bronchoscopy is the gold standard in evaluating tracheobronchial lesions. It is an invasive method which allows direct visualization of the lumen with the option of resecting endobronchial polyp for biopsy and therapeutic removal with Electocautery or Laser

Another modality that is now increasingly being explored is virtual bronchoscopy (VB). It is a non-invasive modality constructing a three-dimensional view of the airways by overlapping helical CT scan images[15] Lacasse *et al.* concluded that VB alone cannot be reliable in detecting an endobronchial lesion, especially beyond the main stem bronchi. Therefore, the usage of fiberoptic bronchoscopy cannot be replaced[16].
Multidetecter Computed Tomography Technique (MDCT) technology has completely modified the diagnostic approach and the noninvasive planning of treatment in patients who present with central airway neoplasms and benign inflammatory endobronchial mass. Currently, (MDCT) enables acquisition of overlapped (30%–50%) thin section (<

1 mm) images with voxels of almost cubic dimensions (isotropic resolution) of the entire airways in a single apnea of few seconds. Fast gantry rotation (< 0.5 seconds) increases the temporal resolution of CT images. Contrast media administration is usually needed to analyze the relationships of tumors of the central airways with the surrounding anatomy and evaluate the contrast enhancement of the tumor[17].
There are different approaches that may be taken for a patient diagnosed with a benign inflammatory polyp. The first option is a simple observation when the patient is asymptomatic and adequate biopsy specimen is judged as benign lesion by the pathologist.

The second approach may require a rigid bronchoscopy with biopsy using larger cup forceps; the polyp may end up being removed endoscopically in the process. Endoscopic removal of a polyp can often be performed with the mechanical energy of the bronchoscope and forceps, particularly if a rigid bronchoscope is used[18]. The removal of the polyp by endoscopic means could be facilitated by the use of a laser or by electrocautery. In our case also, we have used electrocautery to remove polyp keeping in mind vasculature nature of polyp so that bleeding may be minimized and we will get better view for resection of polyp.

The most frequent indication for bronchoplastic resection is the presence of a lesion in the main bronchus or lobar bronchus[19-20]. In the surgical treatment of endobronchial benign lesions, tissue-sparing techniques must be accomplished [19,20].
Another approach is surgical resection of the affected lobe would likely relieve the symptoms and result in the removal of the offending polyp if that if symptoms of chronic but localized infection cannot be adequately controlled by the use of steroid and/or antibiotic therapy [21].

In summary it is necessary to differentiate a benign endobronchial mass from malignant tumour histopathologically as treatment approach is entirely different in two case. Now most of benign endobronchial lesion can be treated with bronchoscopy with guided laser or Electrocautery. Surgical resection is needed in few cases specially with lung fibrosis or bronchiectasis along with benign endobronchial lesion.

REFERENCES

[1] Don R. Miller, M.D., Benign Tumors of Lung and Tracheobronchial Tree. The annals of thoracic surgery vol. 8, no. 6, december, 1969 :542-560

[2] Caldarola VT, Harrison, EG Jr, Clagett OT et al. Benign tumours and tumour-like conditions of the trachea and bronchi. Ann Otol Rhinol Laryngol 1964; 73: 1042-61

[3]Lawrence J. Freant, M.D., and John L. Sawyers. M.D Benign Bronchial Polyps and Papillomas. The annals of thoracic surgery vol. 11, no. 5, may, 1971 page 460-467

[4]. E. Brambilla, W.D. Travis, T.V. Colby, B. Corrin, Y. Shimosato The new World Health Organization classification of lung tumours Eur Respir J 2001; 18: 1059–1068

[5]. Saini VK, Wake PL. Inflammatory polyp of the bronchus. Ann Thorac Surg 1968; 5: 141.

[6]. Peroni, A. Inflammatory tumors of the bronchi: Experimental and pathologic considerations. Arch. Otolaryng. (Chicago) 19: 1, 1934.

[7]. Rosenberg, J. C. Bronchial polyps of inflammatory origin. J. Thoruc. Cardiovasc. Surg. 57:848, 1969

[8]. Berman D, Wright E, Edstrom H. Endobronchial inflammatory polyp associated with a foreign body. Chest. 1984;86:483–484.

[9]. Shale D, Lane D, Fisher C, et al. Endobronchial polyp in an asthmatic subject. Thorax. 1983;38:75–76.

[10]. Niimi A, Amitani R, Ikeda T, et al. Inflammatory bronchial polyp associated with asthma: resolution with inhaled corticosteroids. Eur Resp J. 1995;8:1237–1239.

[11]. Smith R. Endobronchial polyp and chronic smoke injury. Postgrad Med J. 1989;65:785– 787.

[12]. Adams C, Moisan T, Chandrasekhar A, et al. Endobronchial polyposis secondary to thermal inhalation injury. Chest. 1979; 75:643–645.

[13] Schnader J, Harrell J, Mathur P, et al. Clinical conference on management dilemmas: bronchiectasis and endobronchial polyps.Chest. 2002;121:637–643.

[14]. Park T, Di Benedetto R, Morgan K, et al. Diffuse endobronchial polyposis following a titanium tetrachloride inhalation injury.Am Rev Respir Dis. 1984;130:315–317.

[15] Adali F, Uysal A, Bayramoglu S, Guner NT, Yilmaz G, Cimilli T. Virtual and fiber-optic bronchoscopy in patients with indication for tracheobronchial evaluation. Ann Thorac Med 2010; **5**:104-9.

[16]. Lacasse Y, Martel S, Hébert A, Carrier G, Raby B. Accuracy of virtual bronchoscopy to detect endobronchial lesions.Ann Thorac Surg 2004; **77**:1774-80

[17] .Imaging of Tumors of theTrachea and Central Bronchi.G.R. Ferretti, MD, C. Bithigoffer, MD, C.A. Righini, MD, Arbib, MD,S. Lantuejoul, MD, A. Jankowski, MD. Radiol Clin N Am 2009;47 227–241

[18]. Dinçer et al. endobronchial polyps ann thorac surg 2005;80:2353–6

[19]. Ölçmen A, Sayar A, Metin M, Bekar B, Kaya E, Demir A, et al. Surgery of endobronchial benign tumors. Tuberculosis and Thorax 2000;48:345– 8.

[20]. Arrigoni MG, Woolner LB, Bernatz PE, et al. Benign tumors of the lung. J Thorac Cardiovasc Surg 1970;60:589 –98.

[21]. Schnader J, Harrell J, Mathur P, Joseph C, Koduri J, Kvale P. Bronchiectasis and endobronchial polyps. Chest 2002;121: 637–43