TPM Vol. 32, No. S2, 2025
ISSN: 1972-6325
https://www.tpmap.org/

UNCOMMON PRESENTATION OF FIBROEPITHELIAL POLYP IN THE RIGHT MIDDLE LOBE: A RARE CASE REPORT

DR. SAKTHI BHALAN PANDIARAJAN
DR. PRASANTH GURURAJ
DR. SWETHA SASIKUMAR
SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES

DR. RAMYA CHELLAMMAL .M
SENIOR LECTURER, DEPARTMENT OF PEDIATRIC DENTISTRY, SREE BALAJI DENTAL COLLEGE & HOSPITAL, CHENNAI, INDIA

Abstract
Fibroepithelial polyps (FEPs) are benign mesenchymal lesions that are exceptionally rare within the bronchial tree, with very few cases documented worldwide. This case report describes a 55-year-old male with chronic respiratory symptoms, including progressive breathlessness and productive cough, who was found to have a polypoidal lesion in the lateral segment of the right middle lobe bronchus. High-resolution computed tomography revealed secondary changes such as ground-glass opacities and bronchiectasis, but failed to clearly identify the lesion. Bronchoscopic evaluation led to the detection and successful removal of the mass using snare forceps. Histopathological analysis confirmed the diagnosis of a fibroepithelial polyp, showing a benign respiratory epithelium with fibrovascular stroma and chronic inflammatory infiltrates. The patient recovered uneventfully with complete symptom resolution and no recurrence on follow-up. This case highlights the importance of considering rare benign endobronchial lesions in differential diagnoses and demonstrates the diagnostic and therapeutic value of bronchoscopy in managing such uncommon presentations.

Keywords: Fibroepithelial polyp, Endobronchial lesion, Bronchoscopy, Chronic airway obstruction, Snare excision

INTRODUCTION

Fibroepithelial polyps (FEPs) are benign mesenchymal growths that originate from the subepithelial stroma and are most commonly encountered in the skin, oral cavity, and genitourinary tract. Their presence in the bronchial tree is extremely rare, with fewer than five cases reported in the global literature [1,2]. These lesions typically consist of fibrous connective tissue covered by respiratory squamous epithelium. Although histologically benign, their anatomical location within the airways can lead to significant morbidity due to mechanical obstruction.
Clinically, bronchial FEPs may present with non-specific respiratory symptoms, including chronic cough, breathlessness, wheezing, or, less commonly, hemoptysis. These symptoms mimic those of more prevalent pulmonary conditions such as chronic bronchitis, bronchiectasis, or asthma, often leading to misdiagnosis or delayed detection. Imaging studies are generally non-diagnostic, and bronchoscopy followed by histopathology remains the cornerstone of diagnosis [3,4]. In this report, we present a rare case of a fibroepithelial polyp arising from the lateral segment of the right middle lobe bronchus, which was successfully excised via fiberoptic bronchoscopy.

Case Report

A 55-year-old male with a longstanding history of tobacco smoking (smoking index of 300) and regular alcohol consumption presented to the pulmonary outpatient clinic with complaints of progressive shortness of breath over a six-month duration. The breathlessness, initially exertional, had gradually intensified. He also reported a productive cough for one month with scanty, mucoid, non-bloody sputum. Two days prior to presentation, he developed low-grade fever without chills, right-sided chest discomfort, palpitations, and worsening wheeze. The patient had no past history of tuberculosis exposure, weight loss, appetite changes, or seasonal allergic symptoms. There was no prior history of inhaler or nebulizer use. On examination, he was hemodynamically stable and afebrile. Auscultation of the chest revealed bilateral polyphonic wheezes. Other systemic examinations were unremarkable.

Initial investigations included a normal ECG and echocardiogram were normal. Plain chest radiograph PA (Figure 1) showed right lower zone opacity. High-resolution computed tomography (HRCT) (Figure 2) of the chest showed focal patchy ground-glass opacities in the apical and posterior segments of the right upper lobe, with subpleural and paraseptal atelectasis and traction bronchiectasis in the lateral segment of the right middle lobe. These findings suggested chronic airway obstruction but did not clearly delineate an intraluminal lesion.

Figure 1: Plain Chest Radiograph PA with Right Lower Zone Opacity

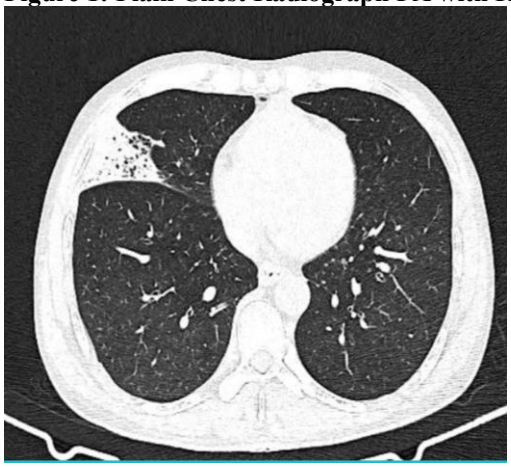

Figure 2: Axial HRCT Thorax Showing Right Middle Lobe, Lateral Segment Wedge Shaped Opacity

A fiberoptic bronchoscopy (Figure 3) was subsequently performed for further evaluation. The vocal cords appeared normal and mobile, the carina was central and sharp. A mobile, polypoidal lesion was identified in the lateral segmental bronchus of the right middle lobe. The lesion was excised in toto using bronchoscopy guided snare forceps (Figure 4) and sent for histopathological analysis.

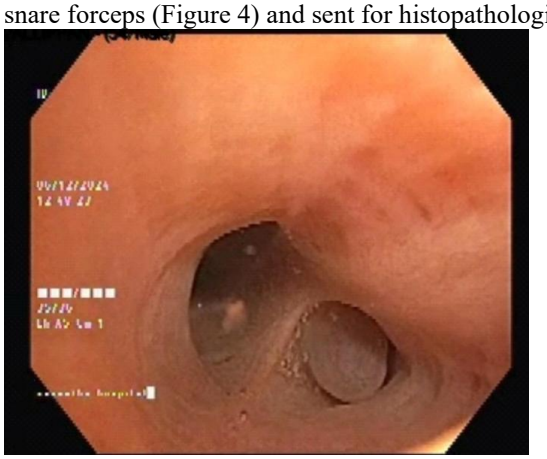

Figure 3: Bronchoscopic View of Right Middle Lobe Showing Polypoidal Growth from Lateral Segment

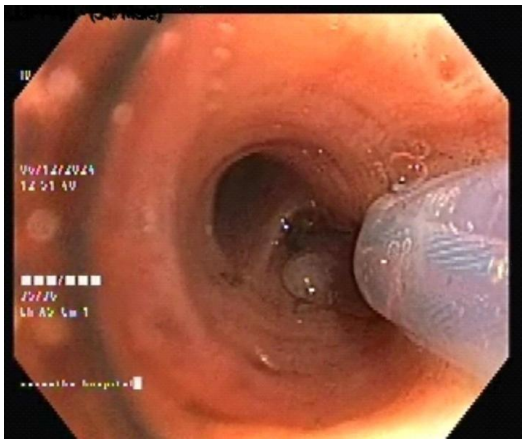

Figure 4: Bronchoscopy Guided Snare Removal of Polypoidal Growth

Gross examination (Figure 5) revealed a polypoid structure lined by benign respiratory epithelium, with focal areas of squamous metaplasia. Histopathological analysis (Figure 6) demonstrated a fibrous stroma with edema, thin-walled capillaries, and a mild chronic inflammatory infiltrate predominantly composed of lymphocytes and plasma cells. Importantly, there was no evidence of epithelial dysplasia or malignancy. These findings were consistent with a diagnosis of fibroepithelial polyp [3].

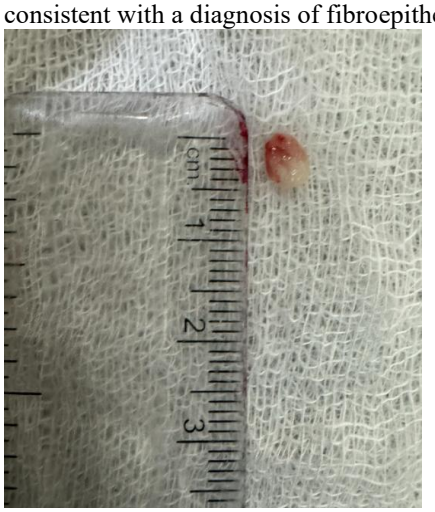

Figure 5: Gross Specimen of Fibroepetheloid Polyp

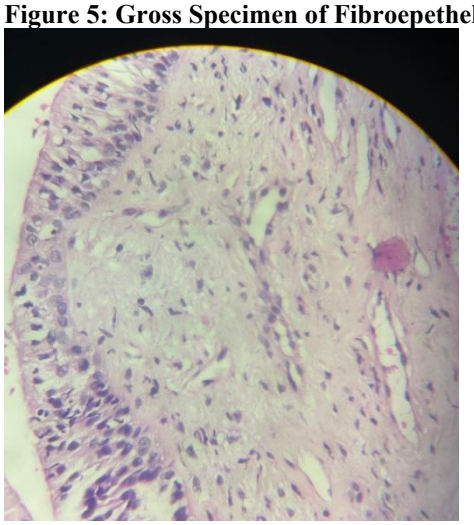

Figure 6: Histological sections showed a polyp covered by a normal respiratory epithelium and fibrovascular stroma with mild chronic inflammatory infiltrate composed of lymphocytes and plasma cells , H & E stain, magnification ×10

The patient's postoperative course was uneventful, with resolution of symptoms at two-week and three-month follow-ups. Repeat bronchoscopy and imaging showed no recurrence. He was counseled on smoking cessation and enrolled in a pulmonary rehabilitation program.

DISCUSSION

Fibroepithelial polyps within the bronchial tree are exceptionally rare entities. The majority of published cases report FEPs in the genitourinary tract, particularly the ureter and renal pelvis, and in cutaneous locations. Endobronchial FEPs are seldom reported and often underrecognized due to their clinical overlap with more prevalent respiratory conditions [1,2]. Patients may present with chronic or intermittent respiratory symptoms that reflect partial bronchial obstruction, including wheeze, breathlessness, and productive or dry cough. Occasionally, hemoptysis or recurrent respiratory infections may be reported if the lesion leads to significant airway blockage [1]. Our patient's symptoms were initially attributed to chronic bronchitis or early-stage COPD, particularly given his smoking history. However, a lack of response to standard bronchodilator therapy necessitated further investigation.

CT imaging, although helpful in identifying structural lung changes such as atelectasis or bronchiectasis, is not sensitive for detecting intrabronchial polyps unless accompanied by contrast or 3D reconstruction [4]. In our case, HRCT findings raised suspicion for airway obstruction but did not identify the intraluminal lesion. This highlights the indispensable role of bronchoscopy in evaluating persistent or unexplained respiratory symptoms.

Bronchoscopic examination offers both diagnostic visualization and therapeutic intervention. Complete excision via snare or cryoprobe can often be achieved in a single sitting. Histopathology remains essential for definitive diagnosis, differentiating FEPs from other benign and malignant endobronchial tumors such as hamartomas, papillomas, or carcinoid tumors [3,5].

Histologically, fibroepithelial polyps exhibit a fibrovascular core covered by benign epithelium. The stroma usually displays variable degrees of edema, inflammation, and vascular proliferation, as seen in our patient. Absence of cellular atypia and mitotic activity supports the benign nature of the lesion [3,5]. Complete endoscopic excision is typically curative, and recurrence is rare. Nevertheless, clinical follow-up is warranted, particularly in cases where excision margins are uncertain or underlying inflammation persists [2,5].

CONCLUSION

This case adds to the limited body of literature on fibroepithelial polyps arising from the bronchial tree. It emphasizes the importance of considering such benign lesions in the differential diagnosis of persistent or unexplained respiratory symptoms, especially in patients with a history of smoking. The case also underscores the utility of bronchoscopy as both a diagnostic and therapeutic modality. Early identification and excision of such lesions can result in complete symptomatic relief and prevent complications associated with chronic airway obstruction.

REFERENCES

1. Li M, Zhang G, Peng A, Wang C. Bronchial fibroepithelial polyp: a case report and review of the literature. Intern Med. 2013;52(3):373–6. doi:10.2169/internalmedicine.52.8864
2. Thimmesch M, Corhay JL, Mutijima E, Piérart F, Schifflers S, Chantrain CF. Fibroepithelial polyp as a rare cause of bronchial obstruction in a child. J Bronchology Interv Pulmonol. 2022;29(4):e55–e57. doi:10.1097/LBR.0000000000000814
3. Kang H, Kim TS, Han J, Kim H. Fibroepithelial polyp of the bronchus: CT and histopathologic findings. Korean J Radiol. 2012;13(3):355–7. doi:10.3348/kjr.2012.13.3.355
4. Amin PB, Baciewicz F. Benign fibroepithelial polyp arising in the bronchus: a case report and review of the literature. Arch Surg. 2009;144(11):1081–3. doi:10.1001/archsurg.2009.198
5. Casalini E, Cavazza A, Andreani A, Marchioni A, Montanari G, Cappiello FG, et al. Bronchial fibroepithelial polyp: a clinico-radiologic, bronchoscopic, histopathological and in-situ hybridisation study of 15 cases of a poorly recognised lesion. Clin Respir J. 2017;11(1):43–8. doi:10.1111/crj.12300