

A bronchial fibroepithelial polyp with abnormal findings on auto-fluorescence imaging

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Introduction

Bronchial fibroepithelial polyps represent a rare type of benign pseudoneoplastic lesion with endobronchial growth [1,2]. At bronchoscopy, bronchial fibroepithelial polyps are reported to appear as rounded, whitish polypoid lesions with a firm consistency and a glistening, fleshy, smooth surface [1,2]. However, the findings of these lesions on auto-fluorescence imaging (AFI) bronchoscopy have not been reported, despite the usefulness of AFI in detecting early lung cancer and bronchial dysplasia [3]. We report a case of bronchial fibroepithelial polyp that displayed AFI positivity (magenta colour).

Case Report

A 65-year-old man, who was an ex-smoker (95 pack years) with severe right pneumonia and pleuritis 6 years previously, was diagnosed with an endobronchial polypoid lesion of the right basal bronchus by non-contrast chest computed tomography (CT). Although the lesion was 10 mm in diameter, the patient had no respiratory

Abstract

Bronchial fibroepithelial polyps represent a rare type of tumour that displays endobronchial growth. The findings of these lesions on auto-fluorescence imaging (AFI) bronchoscopy have not been reported, despite the usefulness of AFI in detecting early lung cancer. We report the case of a patient with a bronchial fibroepithelial polyp that displayed positivity (magenta colour) on AFI. The patient was a 65-year-old man, in whom an endobronchial polypoid lesion of 10 mm diameter had been detected in the right basal bronchus by chest computed tomography (CT). On bronchoscopic examination, we found a whitish, smooth polypoid lesion. The lesion appeared magenta on AFI. On CT, however, the lesion had been almost stable for 4 years and 4 months. Bronchial fibroepithelial polyps may show AFI positivity, even when the lesion displays benign behaviour. The diagnosis of the lesion should not be confused by AFI positivity, and unnecessary surgical intervention should be avoided.

symptoms. On contrast-enhanced CT of the chest, the lesion showed poor enhancement (Fig. 1A).

In a subsequent bronchoscopic examination, we used a BF TYPE F260 (Olympus Corporation, Tokyo, Japan), which is a videobronchoscope that incorporates two devices for white-light (WL) mode and AFI. Bronchoscopy under WL mode revealed a rounded, whitish, smooth, and glistening polypoid lesion with a lobulated surface (Fig. 2A). On AFI, the lesion appeared magenta (Fig. 2B).

We obtained a specimen of the lesion for diagnostic purposes using biopsy forceps; however, the lesion was very firm and was extremely difficult to detach from the tissue. Histopathological examination revealed that the biopsy specimen consisted of dense fibro-collagenous tissue and a few, scattered chronic inflammatory cells; the surface was lined by a normal respiratory mucosa (Fig. 2C). The lesion was definitively diagnosed as a bronchial fibroepithelial polyp.

Three years and 10 months previously, the patient had been examined by chest CT. We compared the patient's most recent CT images with the previous images, and found that the endobronchial lesion showed minimal

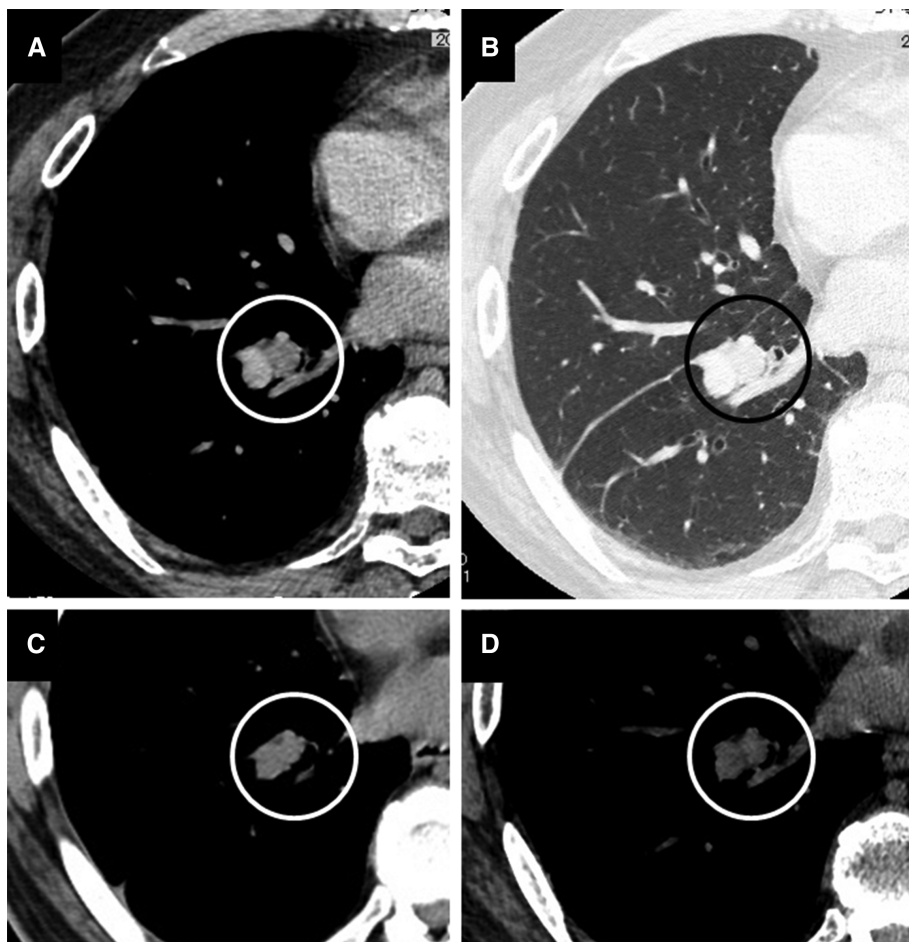


Figure 1. The chest CT scans of the present case. (A) Chest CT at the initial examination shows a polypoid lesion with poor contrast enhancement in the right lower lobe branch. (B) The background of the lung shows no significant change. (C) Chest CT performed 3 years and 10 months previously. The endobronchial lesion showed minimal enlargement over 3 years and 10 months. (D) The chest CT scan after 6 months. The size of the lesion is stable for 6 months.

enlargement (Fig. 1A, C). The patient refused to undergo endobronchial resection. Six months later, he underwent a follow-up chest CT examination, and the lesion was found to be stable (Fig. 1D).

Discussion

In the present case report, we showed two important clinical observations: The bronchial fibroepithelial polyp in the present case showed AFI positivity. The lesion in the present case showed very slow progression.

First, the bronchial fibroepithelial polyp in the present case showed AFI positivity. This is the first report to describe the findings of a bronchial fibroepithelial polyp on AFI. It has been demonstrated that AFI has superior sensitivity to WL bronchoscopy in diagnosing lung cancer; however, the specificity of AFI and WL bronchoscopy was inferior to that of WL bronchoscopy [3]. AFI positivity has also been observed in cases involving benign lesions, including inflammation of the bronchial mucosa, scar tissue, and mucosal injury [3]. We should recognize that a

“benign” bronchial fibroepithelial polyp might display AFI positivity.

Second, the lesion in the present case showed very slow progression. Bronchial fibroepithelial polyps have been recognized as a benign lesion. The lesion of the present case also had been almost stable for 4 years and 4 months. The diagnosis of the lesion should not be confused by AFI positivity, and unnecessary surgical intervention should be prevented.

The reason for the AFI positivity of the bronchial fibroepithelial polyp is unclear. The pathogenesis of bronchial fibroepithelial polyps has been hypothesized to involve chronic bronchial stimulation by various agents, such as smoke and infections, as in the present case [1,2]. Supporting this notion, the histopathological findings of bronchial fibroepithelial polyps have revealed dense fibro-collagenous stroma and the presence of a few scattered chronic inflammatory cells—scar-like structures. AFI positivity has been reported in cases of scar tissue [3]. The histopathological structure of bronchial fibroepithelial polyps might explain the AFI positivity.

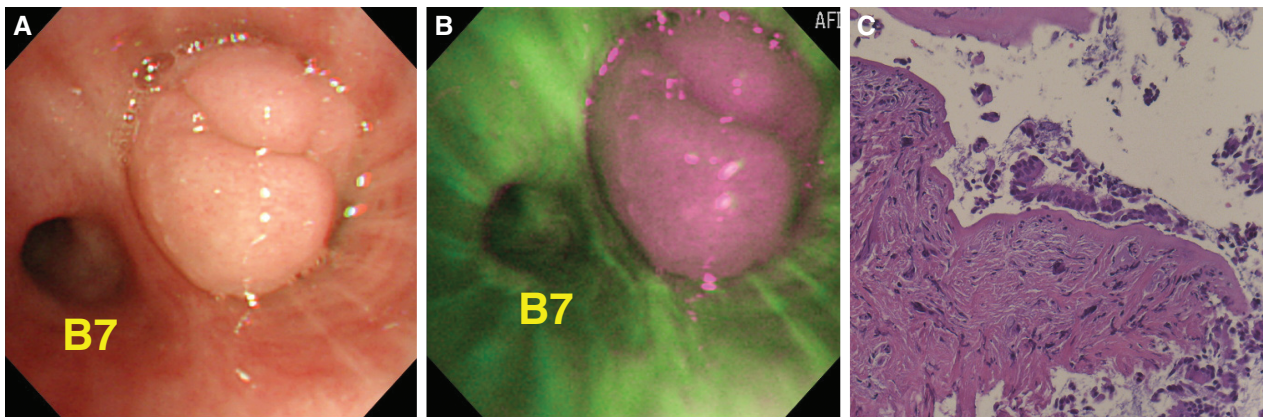


Figure 2. The bronchoscopic findings and microscopic findings of the lesion. (A) The bronchoscopic findings under white-light mode revealed a rounded, whitish, smooth, and glistening polypoid lesion with a lobulated surface. (B) The bronchoscopic findings were positive under autofluorescence imaging (magenta colour). (C) The microscopic findings of the transbronchial biopsy specimen of the lesion (haematoxylin–eosin stain, 200 \times). The lesion consisted of dense fibro-collagenous tissue and only a few, scattered chronic inflammatory cells, and the surface was lined by a normal respiratory mucosa.

Very few reports have described the findings of other benign tumours of the tracheobronchial tree under AFI, as these lesions are quite rare; they reportedly account for 1.9% of all lung tumours [4]. The lesions include several histological types, including papilloma, hamartoma, lipoma, leiomyoma, fibroma, and schwannoma. There was only one report of the AFI findings in benign tumours of the tracheobronchial tree: a case report of schwannoma with negative auto-fluorescence findings [5]. The accumulation of AFI findings in cases involving endobronchial benign tumours will be useful for deciding on appropriate examinations and treatments for several endobronchial tumours.

In conclusion, bronchial fibroepithelial polyps may display AFI positivity; however, the lesion displays benign behaviour. The diagnosis of bronchial fibroepithelial polyps should not be confused by AFI positivity, and unnecessary surgical intervention should be avoided.

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Disclosure Statements

No conflict of interest declared.

Appropriate written informed consent was obtained for publication of this case report and accompanying images.

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