Pictorial Quiz

A rare case of hemoptysis

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ABSTRACT

A 39-year-old nonsmoker male presented with complaints of cough with recurrent mild hemoptysis. Computed tomography of thorax showed nodular lesions on the right lateral wall of trachea. Fiber-optic bronchoscopy revealed multiple nodular lesions on the right lateral wall of lower one-third of trachea. Histopathological examination of biopsy specimen from the nodules was suggestive of tracheobronchopathia osteochondroplastica which is an uncommon airway disorder.

KEY WORDS: Hemoptysis, submucosal nodule, tracheobronchopathia osteochondroplastica

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A 39-year-old nonsmoker male presented with complaints of cough with recurrent mild hemoptysis for 6 months. He denied a past history of any significant medical illness. Physical examination was unremarkable. His complete blood count, coagulation profile, and liver and kidney function tests were within normal range. Chest radiograph revealed no abnormality. Computed tomography (CT) of thorax showed some characteristic lesions that are shown in Figure 1. Sputum microscopy and culture did not reveal any pathogenic microorganism. Fiber-optic bronchoscopy was performed, and the finding is shown in Figure 2. Bronchoscopic biopsy was performed from the lesions which were firm to hard in consistency as perceived by the bronchoscopist during procedure.

Figure 1: Computed tomography of thorax showing nodular lesions on the right lateral wall of trachea

QUESTIONS

1. What is the radiological finding in the CT thorax image?
2. What are the bronchoscopic findings?
3. What may be the tracheal pathology?

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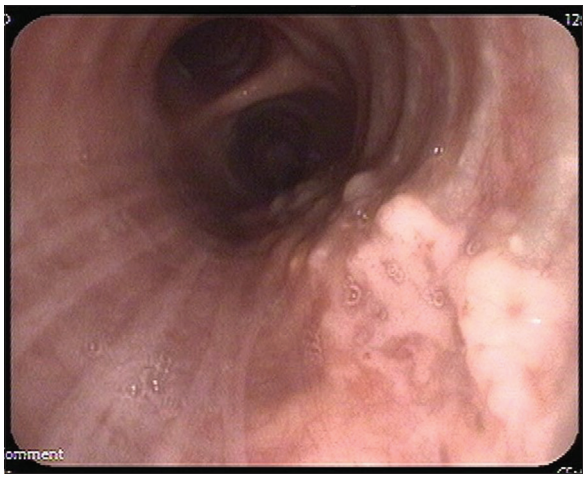

Figure 2: Fiber-optic bronchoscopic image showing nodular lesions on the right lateral wall of lower one-third of trachea

ANSWERS

1. CT thorax image is suggestive of nodular lesions on the right lateral wall of trachea [Figure 1].
2. Bronchoscopy showed multiple nodular lesions on the right lateral wall of lower one-third of trachea sparing the posterior membranous wall [Figure 2].
3. Tracheobronchopathia osteochondroplastica (TBPO).

DISCUSSION

TBPO is a rare benign condition involving the tracheobronchial tree. The characteristic feature is the presence of multiple metaplastic cartilaginous and/or osseous submucosal nodules.[1] Nodules are mainly located in the anterolateral wall of lower two-thirds of the trachea and upper part of the main bronchi, sparing the posterior membranous wall. Involvement of subglottic trachea and larynx has also been reported. The intact mucosa over the nodules is usually lined by normal or metaplastic epithelium.[2] The exact prevalence is not known. In a large Chinese cohort of 41,600 patients who underwent bronchoscopy, the detection rate was 0.05%.[3] The etiology is still unknown. Associations with various factors such as chronic inflammation, chronic infection, chronic irritation, atrophic rhinitis, silicosis, amyloidosis, genetic factor, and malignancy have been proposed.[4] TBPO usually gets detected in the sixth or seventh decade with no gender predilection. Most of the cases with milder form remain asymptomatic, whereas others may present with variable symptoms such as chronic cough, hoarseness of voice, dyspnea, hemoptysis, wheezing, globus sensation, bronchorrhea, and recurrent respiratory infections when larger nodules project inside the tracheal lumen.[1,5] CT chest shows characteristic picture of multiple sessile nodules with or without calcification along the cartilaginous portion of the trachea.[6] Bronchoscopic visualization of multiple isolated or confluent-appearing submucosal bony and cartilaginous nodules is diagnostic of TBPO.[1] These lesions are more profuse and more commonly occur in the distal two-thirds of the trachea and main bronchi.[7] Histopathological examination of the nodules is not necessary because of typical gross appearance. Indeed, it is technically difficult to obtain biopsy specimen of the lesions because of the hardness of nodules.[8] Some authors suggest the need for histopathological examination in view of lack of familiarity, the need for evaluation of associated condition, and to exclude other differential diagnoses such as amyloidosis, neoplasia, papillomatosis, and sarcoidosis.[5,9] Histopathological features include submucosal nodules consisting of variable portion of cartilage and bone along with squamous metaplasia of overlying respiratory epithelium.[10] In our case, nodules were made up of trabecular bone. There is no specific treatment for this condition. Conservative therapy comprising maintenance of airway humidity, avoidance of airway irritation, and prompt treatment of respiratory infections is recommended in symptomatic patients. Successful application of various other therapies such as bronchoscopic forceps removal of nodules, laser ablation, cryotherapy, external beam radiation, and tracheal or laryngeal resection has been reported.[1,11]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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