

Imaging diagnosis

Case 420

1. Relapsing polychondritis

【Progress】

He was given steroid pulse treatment. During steroid therapy, bronchiolitis occurred. Antibiotics with decreasing volume of steroid, were administered, inducing relief of respiratory symptoms.

【Discussion】

Bronchial stenosis arises from various diseases: malignancy, inflammation, auto-immune diseases. As malignancy, bronchial cancer, compression from malignant swollen lymph nodes of small cell carcinoma, malignant lymphoma. As inflammation, intrabronchial tuberculosis, bronchial pneumonia, and bronchial aspergillosis are listed. Others include auto-immune diseases, trachea-bronchopathy osteo-chondro-plastics, relapsing chondritis, trachea-bronchus-malacia, and amyloidosis (1-3).

Trachea and bronchus are composed of ciliary epithelium, mucosal proximal layer, submucosal layer, chondritic layer, tunica adventitia. Chondritic layers exist in anterior and lateral side murals of trachea and bronchus, but not in posterior murals. In trachea-bronchopathy osteo-chondro-plastics, chondritic layers at anterior and lateral murals contain multiple calcified cartilages, inducing stenosis of trachea and bronchus. In relapsing chondritis, thickening of anterior and lateral murals are found in CT (4, 5). Patients with relapsing chondritis are often associated with other chondritis such as ear chondritis and/or joint arthritis. Then, illness history might be useful for evaluating diagnosis. Trachea-bronchus malacia is categorized into two types: crescent type and saber-sheath type (6-8). Crescent type of trachea-bronchus malacia occurs thin-walled membrane of posterior mural of trachea probably because of atrophy of elastic fiber, while saber-sheath type occurs by injuries of lateral or anterior cartilage. It might be difficult to differentiate relapsing chondritis from trachea-bronchus malacia because their images are mere stenosis of trachea and bronchus. Meanwhile, in amyloidosis and granulomatosis with polyangiitis, bronchial stenosis with bronchial wall thickening is reported to be found at the whole murals, irrespective of anterior, lateral and posterior (7-11).

Relapsing chondritis occurs various cartilage parts: auricular cartilage, nasal cartilage, joint cartilage and tracheal and/or bronchus cartilage. Diagnostic criteria of relapsing polychondritis is as follows: three of the five symptoms are positive of relapsing polychondritis; inflammation of bilateral auricular cartilage, inflammation of nasal cartilage, inflammation of joint cartilage, inflammation of trachea or bronchus, and inflammation of peri-eye ball (4, 5).

In our case, he suffered from joint rheumatoid arthritis, bronchial stenosis, suspicious poly relapsing chondritis. He was given pulse-steroid therapy that induced him to bronchiolitis infected by mycotic infection. He was recovering to reduce gradual decrease of steroid volume and proper antibiotics.

【Summary】

We presented a fifty-year-old male with cough and dyspnea. He suffered from rheumatoid joint arthritis. Right main bronchus stenosis was depicted on chest CT, diagnosed as probable relapsed chondritis. It is borne in mind that bronchial stenosis occurs in various diseases such as malignancy, organisms' infection, autoimmune disease that includes relapsing chondritis, trachea-bronchial-malacia, trachea-bronchopathy osteo-chondro-plastics, amyloidosis and granulomatosis with polyangiitis. When bronchial stenosis is not associated with bronchial wall thickening, relapsing chondritis and trachea-bronchial-malacia are listed since other lesions are associated with bronchial mural thickening.

【References】

1. Marom E, et al. Diffuse Abnormalities of the Trachea and Main Bronchi. *AJR Am J Roentgenol.* 2001;176(3):713-7.
2. Prince J, et al. Nonneoplastic Lesions of the Tracheobronchial Wall: Radiologic Findings with Bronchoscopic Correlation. *Radiographics.* 2002;22 Spec No(suppl_1):S215-30.
3. Webb E, et al. Using CT to Diagnose Nonneoplastic Tracheal Abnormalities: Appearance of the Tracheal Wall. *AJR Am J Roentgenol.* 2000;174(5):1315-21.
4. Williams S & Jones E. General Case of the Day. *Tracheobronchopathia Osteochondroplastica.* *Radiographics.* 1997;17(3):797-9.
5. Zhang X, et al. *Tracheobronchopathia Osteochondroplastica: A Case Report and Literature Review.* *J Thorac Dis.* 2013;5(5):E182-4.
6. Pearson CM, et al: Relapsing polychondritis. *N Engl J Med* 263: 51-58, 1960.
7. Saliba WR, et-al. Syncope in a patient with relapsing polychondritis. *Ann. Rheum. Dis.* 2003;62 (12): 1244-5.
8. Lee KS, et-al. Relapsing polychondritis: prevalence of expiratory CT airway abnormalities. *Radiology.* 2006;240 (2): 565-73
9. Faix LE, Branstetter BF. Uncommon CT findings in relapsing polychondritis. *AJNR Am J Neuroradiol.* 2005;26 (8): 2134-6.
10. Grenier PA, Beigelman-Aubry C, Brillet PY. Nonneoplastic tracheal and bronchial stenoses. (2009) *Radiologic clinics of North America.*2009 :47 : 243-60.
11. Ingegnoli A, Corsi A, Verardo E, De Filippo M, Sverzellati N, Zompatori M. Uncommon causes of tracheobronchial stenosis and wall thickening: MDCT imaging. (2007) *La Radiologia medica.* 112 (8): 1132-41.

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