

PET/CT Imaging in Fever of Unknown Origin: A Case of Relapsing Polychondritis

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Relapsing polychondritis is a rare disease, and the cases characterized only by fever and restricted airway involvement are extremely rare.

A 44-year-old febrile man without any other symptoms and signs was admitted to Rui'jin Hospital for further investigation, where 18F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG-PET/CT) showed an 18FDG accumulation and indicated local acute inflammation in the trachea and bronchus. Other routine tests for infections, autoimmunological antibodies, and bone marrow biopsy were normal.

Erythrocyte sedimentation rate was 102 mm/h (normal range 0–20 mm/h) and C-reactive protein level was 97 mg/l (normal range 0–10 mg/l). Anticollagen type II antibody was raised to 97 EU/ml (normal < 20 EU/ml). Chest CT showed the circumferential thickening and narrowing of tracheal walls or chondromalacia. PET/CT showed a diffuse FDG accumulation with a SUVmax 4.6 in the broadly thickened trachea and bronchus (Figure 1) with no involvement of the ears.

Relapsing polychondritis has a poor prognosis because it tends to present with obstructive respiratory failure, most frequently expiratory collapse of the tracheobronchial tree. Evaluation of relapsing polychondritis can be complex and should include a variety of diagnostic techniques. PET/CT is an alternative to invasive methods for examination for local inflammation of the involved organs and tissues in patients with relapsing polychondritis^{1,2,3,4}.

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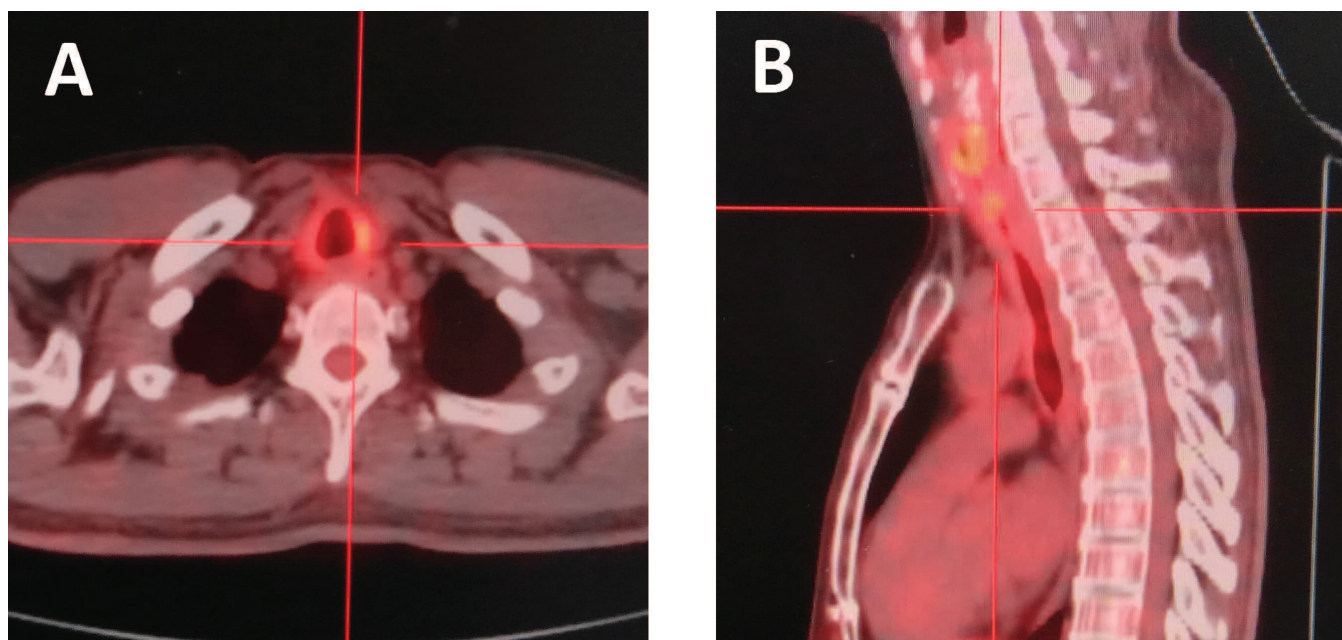


Figure 1. Relapsing polychondritis restricted to airway. A diffuse 18F-fluorodeoxyglucose accumulation in thickened trachea and bronchus on positron emission tomography/computed tomography. (A) Cross-section view. (B) Vertical plane view.