A 74-year-old man presented with a 4-month history of dry cough. Physical examination was unremarkable. Auscultation and chest radiograph were normal. Blood test results revealed elevation of erythrocyte sedimentation rate. Neck and chest contrast-enhanced computed tomography (CT) showed no abnormalities of the lung, thoracic aorta, its branches or pulmonary arteries. Subsequent positron emission tomography/computed tomography (PET/CT) was performed based on strong clinical suspicion for giant cell arteritis, which rarely causes a cough. It demonstrated intense fluorodeoxyglucose uptake in the thoracic aorta, subclavian, axillary, brachial, common carotid, external carotid and temporal arteries (Figure 1). Biopsy of the right temporal artery identified giant cell arteritis (GCA). The patient received treatment with prednisolone, and his cough rapidly resolved.

Clinical manifestations of GCA were generally subtle and various. GCA almost never affects the lung. However, cough has been reported to be a rare initial manifestation of GCA. Because dry cough was reported found at initial presentation in 13.6% of patients with GCA, it may be overlooked.¹ Although mechanism of its cough formation is not completely clear, inflammation of the artery in contiguity with the cough reflex pathway is thought to cause cough. Inflammation of the ascending pharyngeal artery, a branch of the external carotid artery, was introduced to explain a cause of cough.² The diagnosis of GCA greatly depends on findings of contrast-enhanced CT, CT angiography or magnetic resonance imaging. They can not directly estimate inflammation of the vessels though they measure inflammation-induced stenosis and wall-thickening of the vessels. On the other hand, PET/CT, which metabolically confirms inflammation of the affected vessels, is more useful in assessing GCA without morphological arterial abnormalities. Giant cell arteritis should be considered in patients with prolonged cough with high inflammatory markers and no pulmonary changes on radiological imaging, and appropriate choice of imaging procedure is required for early diagnosis.

Contributors
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Figure 1. PET/CT demonstrated intense fluorodeoxyglucose accumulation in the thoracic aorta, axillary (a), subclavian, and common carotid arteries (b).
Patient's consent and permission to publish

Written consent to publish this case report was obtained from the patient and guardian.

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References