A 68-year-old patient with a history of unexplained fatigue, weight loss, and episodes of low-grade fever for several months was referred to our hospital for high-grade fever, malaise, and presyncope. There were no clear clinical foci of infection. Laboratory results showed an elevated sedimentation rate (119 mm/h) and C-reactive protein level (32 mg/L). A transoesophageal echocardiogram excluded endocarditis, but detected a distinctive circumferential thickening of the descending aorta, with a clear intramural hypoechogenic halo (Panel A). The ascending aorta and aortic valve showed no abnormality. Although temporal artery biopsies in the referring hospital showed no signs of giant cell arteritis (GCA), in the clinical setting of protracted unexplained fever, weight loss, and fatigue, we judged this image compatible with GCA. Whole-body positron emission tomography (PET) confirmed a distinct image of vasculitis in the thoracic and upper abdominal aorta, expanding to the subclavian and carotid arteries (Panel B). Whole-body contrast-enhanced computed tomography scan showed slight thickening of the aortic wall (Panel C). PET/CT correlation images showed a clear focus of inflammation in the descending aorta (Panel D), which was detected earlier with transoesophageal echocardiography.

The patient was diagnosed with GCA and was treated successfully with methylprednisone and methotrexate. At 2-month follow up, a positive clinical response and a reduction of inflammatory parameters were noted.

The presence of a hypoechogenic halo around the lumen of temporal arteries ‘halo sign’ is a common finding in GCA, but to our knowledge, it has never been described in the descending aorta. In this case, circumferential thickening of the descending aorta, with a clear intramural hypoechogenic halo, noted on a standard transoesophageal echocardiography led to the diagnosis GCA, confirmed on PET/CT.