Symptomatic lower limb large vessel vasculitis presenting as fever of unknown origin diagnosed on FDG-PET/CT

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DESCRIPTION

A 75-year-old man with a 6-month history of unexplained weight loss and malaise presented with fever and rigours, severe thigh pain and proximal myopathy. C-reactive protein and erythrocyte sedimentation rate were raised (373 mg/dL and 58 mm/hour, respectively) with a normal creatine kinase. A diagnosis of giant cell arteritis (GCA) was considered despite the absence of typical cranial symptoms and a temporal artery biopsy (TAB) was performed. TAB showed an unusual perivascular inflammatory pattern felt to be in keeping with the clinical picture of vasculitis but did not demonstrate the classical transmural inflammation typically seen in GCA.

In view of the lower limb symptoms, fluoro-deoxyglucose-positron emission tomography/CT imaging was performed which showed increased tracer uptake, compatible with vasculitis, predominantly affecting the peripheral lower limb vessels (figure 1) with relative sparing of larger vessels in the lower extremities. Axillary and subclavian artery involvement, more typical

Figure 1 Axial image through the thighs shows increased activity within vessels and a relative paucity of muscular uptake on fluorodeoxyglucose-positron emission tomography (FDG-PET)/CT.

Figure 2 Whole-body maximum intensity projection (MIP) demonstrates increased tracer uptake in the larger vessels of the lower limbs with sparing of the aorta, iliac and femoral arteries. Increased uptake is also displayed in the axillary and subclavian arteries.

for GCA, was clearly demonstrated on imaging (figure 2).

Commencement of high-dose oral prednisolone (60 mg daily) resulted in the complete resolution of symptoms within 24 hours and symptoms have remained quiescent following a gradual steroid taper.

GCA is the most common form of large vessel vasculitis affecting around 1 in 5000 people over the age of 50.¹ Predominant lower extremity involvement is an unusual pattern in GCA, which more typically involves the aorta, aortic arch and branches thereof with the temporal vessels most commonly symptomatic. Patients with lower extremity involvement may not exhibit cranial symptoms such as headache despite the presence of positive TAB.² While symptomatic lower limb

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vasculitis is rare, it can be associated with significant morbidity due to the potential for critical limb ischaemia.³

Learning points

- ▶ Giant cell arteritis is a recognised cause of fever of unknown origin and can present with predominant lower limb involvement in the absence of typical cranial symptoms.
- ▶ Fluorodeoxyglucose-positron emission tomography/CT scanning can be helpful in identifying vascular inflammation that is not clinically evident, enabling prompt treatment to prevent ischaemic complications.

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REFERENCES

- 1 Smeeth L, Cook C, Hall AJ, *et al*. Incidence of diagnosed polymyalgia rheumatica and temporal arteritis in the United Kingdom, 1990-2001. *Ann Rheum Dis* 2006;65:1093-8.
- 2 Assie C, Janvresse A, Plissonnier D, *et al*. Long-term follow-up of upper and lower extremity vasculitis related to giant cell arteritis: a series of 36 patients. *Medicine* 2011;90:40-51.
- 3 Kermani TA, Matteson EL, Hunder GG, *et al*. Symptomatic lower extremity vasculitis in giant cell arteritis: a case series. *J Rheumatol* 2009;36:2277-83.

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