

Diagnostic positron emission tomography-computed tomography in clinically elusive giant cell arteritis

Ryian Mohamed, Deyl Djama¹, Tariq Ayoub²

Key words: Diagnosis, giant cell arteritis, positron emission tomography-computed tomography

Giant cell arteritis (GCA) is one of the handful of true ophthalmological emergencies, and the difficulty of biopsy confirmation (biopsy false negative rate = 15%–70%^[1]) means that treatment is often started on clinical grounds alone. This means that a small number of patients will be started on years of steroid treatment unnecessarily and subsequently find themselves exposed to all the complications of steroid use. It is therefore imperative that a definitive diagnosis is established, since most patients will require urgent and long-term steroid use exposing them to their attendant complications.

A recent case of a 75-year-old Caucasian woman with a 4-day history of pains around the temple regions and eyes highlighted to the authors the increasingly important role of positron emission tomography-computed tomography (PET-CT) in clinically elusive GCA. The patient had a completely normal examination with visual acuities of 6/6 in the right eye and 6/9 in the left eye. Her temporal arteries were nonrigid and nontender with a borderline elevated erythrocyte sedimentation rate (ESR) of 50 mm/h. The rest of her blood workup was within normal limits.

Despite the nontender arteries, the presence of temporal headaches (which may be present in GCA despite nontender temporal arteries and is likely due to intracranial vascular ischemia^[2]), and given her age and ethnicity, a PET-CT was arranged. This showed intense hypermetabolism within the thoracic aorta [Fig. 1]. This finding is in keeping with active

large-vessel vasculitis, thus confirming her diagnosis as GCA.^[3] Changes in the cervical and temporal arteries were not found as these vessels are often too small for hypermetabolism to be radiologically detectable.^[4] Due to the radiological diagnosis and the patient's rapid response to steroid treatment, temporal artery biopsy was not undertaken.

Discussion

It is important to note that PET-CT picks up inflammation alone and is not specific for etiology.^[3] Clinical correlation and response to steroid treatment is therefore a must, especially as other pathologies may cause a similar radiological picture, for instance, infective vasculitides^[3] which can be clinically disastrous if steroids are started.

PET-CT has several advantages over other imaging modalities. For example, there is less operator variability that with ultrasonography/Doppler. Furthermore, although magnetic resonance imaging (MRI) is an alternative in certain health-care settings, MRI provides a limited area of coverage, which may increase false-negative rates since temporal arteries need not necessarily show signs of inflammation in all cases of GCA. PET-CT on the other hand allows head to toe coverage.

Conclusion

In suspected GCA, PET-CT is a useful and noninvasive diagnostic imaging modality and a promising addition in the armamentarium of investigations, especially in atypical presentations or when ESR elevation is borderline.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published

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Department of Head & Neck, University College London Hospitals NHS Trust, ¹Undergraduate Student, Kings College London, ²Department of Ophthalmology, Royal Free Hospitals NHS Foundation Trust, London, UK

Correspondence to: Dr. Ryian Mohamed, University College London Hospitals NHS Foundation Trust, London, UK. E-mail: m0601207@gmail.com

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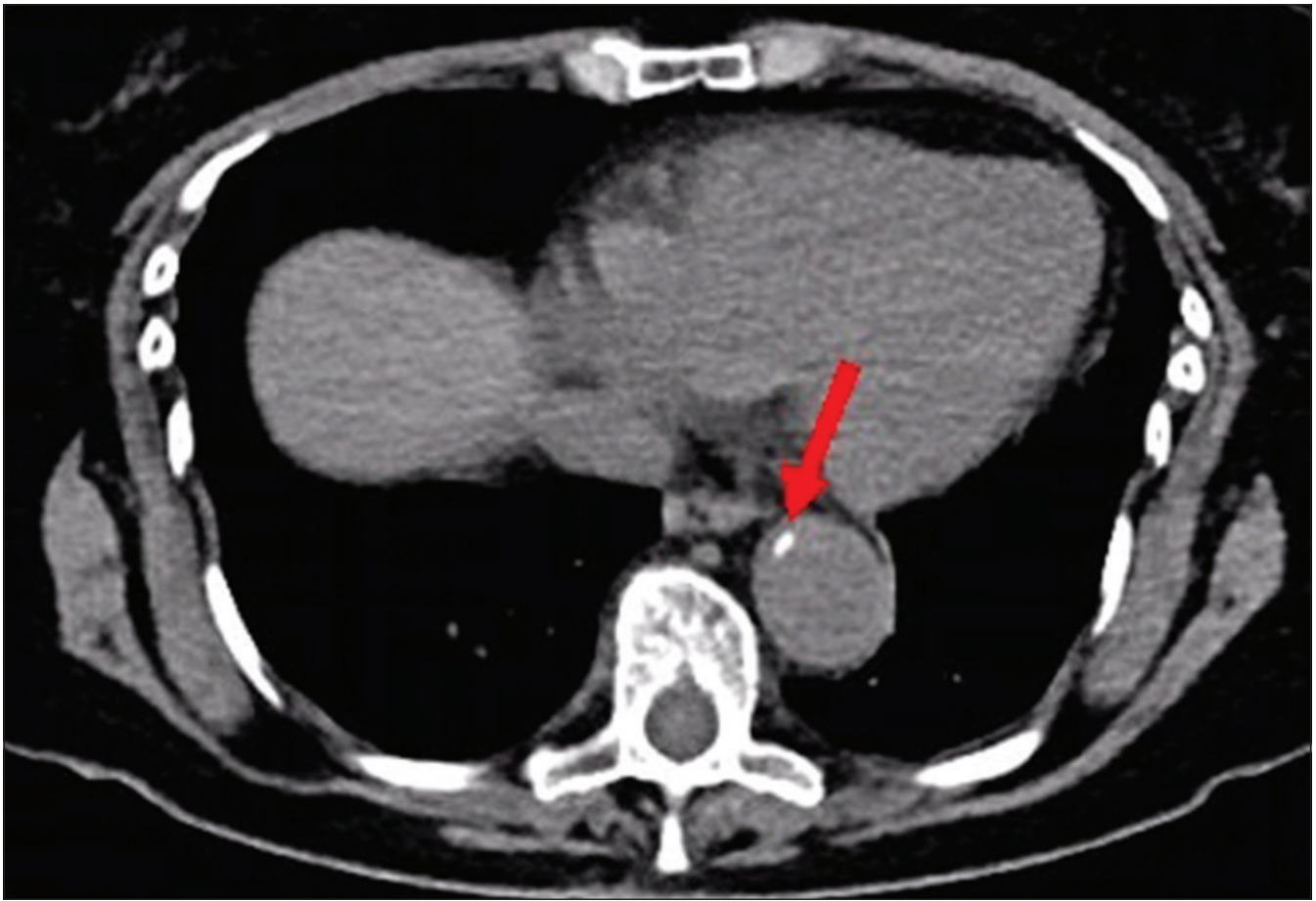


Figure 1: Positron emission tomography-computed tomography: Computed tomography component showing intense hypermetabolism within the thoracic aorta

and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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