18. AN UNUSUAL PET PROJECT: LARGE VESSEL VASCULITIS PRESENTING AS LOWER LIMB CLAUDICATION IN THE ABSENCE OF AORTITIS

Neil Morton¹, Yik Long Man¹, and David D'Cruz¹

¹Rheumatology, Guy’s and St Thomas’ Hospital, London, United Kingdom

Introduction: Rheumatologists are increasingly aware of extracranial giant cell arteritis (GCA), namely large vessel vasculitis (LVV) involving the aorta and its branches. It is uncommon for patients to present with claudication as their initial complaint. We present an unusual case of femoral arteritis presenting with lower limb claudication. PET-CT demonstrated increased uptake bilaterally in the femoral arteries with typical hypoechoic haloes on Doppler ultrasound. There was no evidence of aortitis. We also illustrate the diagnostic challenge differentiating between vasculitis and atherosclerosis on PET-CT and how steroid-therapy reduces the sensitivity.PET imaging.

Case description: A 57-year-old lady with known hypertension presented to her local hospital with a 3-year history of worsening tongue claudication. Her vision was not compromised and patient denied any jaw and scalp pain. Examination revealed a pulsatile mass with a length of 1 cm along the superficial temporal artery. Temporal artery ultrasound showed choic haloes on Doppler ultrasound. There was no evidence of aortitis. The headaches recurred. The symptoms improved with topical tacroline. PET-CT scan suggested inflammation of the superficial temporal artery. MRI head scan suggested inflammation of the superficial temporal artery. PET imaging showed increased uptake bilaterally in the femoral arteries with typical hypoechoic haloes on Doppler ultrasound. There was no evidence of aortitis. We also illustrate the diagnostic challenge differentiating between vasculitis and atherosclerosis on PET-CT and how steroid-therapy reduces the sensitivity.PET imaging.

Key learning points:
- Large vessel vasculitis may present with lower limb claudication.
- PET-CT can be useful in diagnosing large vessel vasculitis.
- Steroid therapy can reduce the sensitivity of PET imaging.

Discussion:
- PET-CT can be useful in diagnosing large vessel vasculitis.
- Steroid therapy can reduce the sensitivity of PET imaging.
- We also illustrate the diagnostic challenge differentiating between vasculitis and atherosclerosis on PET-CT and how steroid-therapy reduces the sensitivity.PET imaging.
claudication in her lower limbs. Her exercise tolerance was limited to 50
metres over the past 2 months and she had rest pain. Other symptoms
included widespread musculoskeletal pain, chest pain, headaches and
jaw pain on mastication. Lower limb Doppler ultrasound demonstrated
significant stenosis of the distal femoral arteries bilaterally with hypo-
echoic haloes typical for vasculitis. Immunology tests were all negative
but inflammatory markers were raised (ESR 43 mm/h, CRP 14 mg/L). In
view of the Doppler findings and GCA symptoms she was started on pre-
dnisolone 60mg. The prednisolone was held 2 days before a PET-CT
which demonstrated mild uptake in both femoral arteries with no evi-
dence of aortitis. Her CT angiogram showed significant diffuse atheroma-
tous disease in the superficial femoral and popliteal arteries bilaterally. In
view of this, the PET-CT uptake was thought to be in keeping with athero-
sclerosis rather than vasculitis. Her prednisolone was therefore stopped
and she was transferred to a tertiary vascular centre for further
management.

The vascular team at our hospital were still concerned about the possibility
of vasculitis and a second rheumatology opinion was sought. Her
inflammatory markers continued to rise (ESR 76 mm/h, CRP 29 mg/L). It
was felt that the PET-CT results may have been affected by high-dose
prednisolone which was temporarily held. The PET-CT was therefore
repeated having been off steroids for 4 weeks. This demonstrated
increased uptake in the superficial femoral and profunda arteries when
compared to her previous scan. All her images were reviewed and the
diagnosis was felt to be in keeping with LVV. Furthermore, she had a good
clinical response to 40mg prednisolone and methotrexate was subse-
quently added.

Discussion: Classical GCA typically presents with cranial symptoms.
Extracranial symptoms such claudication can occur although only 4% of
patients fall into this category. In our patient, femoral arteritis presented
with lower limb claudication. Peripheral limb ischaemia and/or aorta
involvement is associated with a slightly younger demographic of LVV
(<60 years).

Initially, there was diagnostic uncertainty given her raised inflammatory
markers and hypoechoic femoral artery haloes on Doppler ultrasound,
yet diffuse atherosclerosis on the CT angiogram. Hypoechoic haloes and
multiple short segment occlusions are more typically seen in vasculitis
rather than atherosclerotic disease. Accelerated atherosclerosis is com-
mon in primary vasculitides. Despite establishing the diagnosis of LVV by
ultrasound in this case, the sensitivity for this in the common femoral
artery is < 17%, and PET-CT is preferred. EULAR recommendations for
LVV diagnosis include ultrasound and PET-CT. PET-CT was performed
twice in this patient because the initial scan was performed following tem-
porary cessation of high-dose steroids, which can decrease the sensiti-
ity of PET-CT. The first PET-CT showed only mild uptake in the femoral
arteries which could be consistent with atherosclerosis. Interestingly,
PET-CT has been used to identify plaques vulnerable to rupture bed on
FDG-avidity. Recent studies have utilised PET-CT to quantify the burden
of atherosclerotic disease to help risk stratify patients accurately. This
potential diagnostic ambiguity between vasculitis and atherosclerosis on
PET-CT reinforces the importance of remaining off steroids around the
time of PET imaging where possible.

Key learning points: This case sheds light on LVV through several inter-
esting perspectives. Firstly, it is unusual for LVV to present with claudica-
tion in the lower limbs in the absence of aortitis, demonstrating the variety
of ways in which the same pathophysiological mechanism can present
clinically. We also highlight the initial diagnostic challenge, as mild uptake
in the femoral arteries on PET-CT can be consistent with atherosclerosis.
However, with typical findings of hypoechoic haloes on Doppler ultra-
sound and raised inflammatory markers, clinically this was in keeping
with LVV. Interestingly, a repeat PET-CT off steroids demonstrated
increased FDG-avidity in the affected areas. This is important as even
holding steroids for 2 days before a PET-CT affected the results of the
study. This case adds to the growing number of atypical extracranial pre-
sentations of LVV and provides useful insight for future possible cases.

Conflict of interest: The authors declare no conflicts of interest.