OPEN ACCESS

CASE REPORT

Persistent sciatic artery resembles a soft-tissue sarcoma in presentation

Hana Kamal Almadani

General Surgery, Dubai Hospital,
Dubai, United Arab Emirates

Correspondence to

Dr Hana Kamal Almadani,
drhamadani23@yahoo.co.uk

Accepted 7 December 2018

SUMMARY

Persistent sciatic artery (PSA) is a rare vascular anomaly with estimated incidence of 0.03%–0.06%. It has high incidence of complications including aneurysmal formation and ischaemia that may lead to amputation. During early embryonic development, the sciatic artery (which usually supply fetal lower buds and caudal part) disappears when the superficial femoral artery develops properly and the lower limbs grow. On clinical examination, usually a pulsating gluteal mass (the aneurysm) is appreciated with weak or absent femoral artery (Cowie's sign). However, our patient had presented in a different way. She was referred from peripheral clinic as a case of possible liposarcoma in the gluteal region. On examination, there was obvious asymmetry between both buttocks. The affected side was hard, firm in consistency with no appreciable pulsation. Nevertheless, on auscultation there was a bruit of low grade. Peripheral pulses were palpable. Our clinical impression was towards a sarcoma namely a liposarcoma. MRI was requested to evaluate the mass. The radiology report suggested that most probably it is an angiosarcoma with slim possibility of being a cavernous haemangioma. The trucut biopsy was deferred, in view of the high vascular nature of the lesion. The plan was as follow: To do angiography and embolisation of the main feeding vessels, with the possibility of biopsy in a second incident if indicated. During the conventional angiography, the pathology revealed itself. The patient was type 3 according to Pillet-Gauffre classification (PSA is limited to gluteal area and the popliteal artery arising from the femoral artery) associated with huge arteriovenous malformation. Embolisation with different materials including coils, beads and foam was ineffective. Finally, the radiologist excluded the root of the sciatic artery by a stent bridging from common iliac to external iliac artery. This successfully occluded the PSA.

BACKGROUND

To start with, this disease is rare; the treatment was endovascular stenting, which is relatively a new approach, so it is important to know about the efficacy of this procedure in such scarce cases. After all, case reporting may be the only way to have an evidence-based approach for such rare cases.

CASE PRESENTATION

A 38-year-old, otherwise healthy, woman presented with increasing mass of her right glutei for the last 3 months.

The patient reported a mild asymmetry between the two glutei since childhood, but after a moderate trauma (the patient fell on her buttocks), she noticed marked increase and mild discomfort of the affected side. No neural or sciatic nerve neuro-pathic symptoms.

INVESTIGATIONS

Ultrasound study showed heterogeneous mass which is high in vascularity possible liposarcoma.

MRI pelvis suggested cavernous haemangiosarcoma versus haemangioma (figures 1–4).

Angiogram (figures 5–9).

DIFFERENTIAL DIAGNOSIS

Soft-tissue sarcoma.

TREATMENT

Endovascular intervention.

Coils (figures 10 and 11) and stenting images (figures 12–14).

OUTCOME AND FOLLOW-UP

The patient had immediate relieve of her discomfort. Within 1 week, she noticed around 50% reduction in the size of the mass. She shall have MRI film follow-up in 3 months.

DISCUSSION

Persistent sciatic artery (PSA) is a rare vascular anomaly with estimated incidence of 0.03%–0.06%.

During early embryonic development, the sciatic artery (which usually supply fetal lower buds and caudal part) disappears when the superficial femoral artery develops properly and the lower limbs grow.

There are very few cases reported in literature around 45 cases from 1977 to 1994.¹ Most of these cases presented with catastrophic events such as acute limb ischaemia or gangrenous glutei. A systemic review reported 122 published patients collected in 43 years for the period 1964–2007. Ten cases in total had been treated by minimal endovascular techniques, all for stenotic lesions. Three to five cases were treated conservatively, one case with oral anticoagulant, less than 10% had regular surveillance for ischaemia and embolic manifestations. In total the amputation rate reached up to 22%.² In the Japanese literature, one case of PSA presented by gangrenous glutei.³

© BMJ Publishing Group Limited 2019. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Almadani HK. *BMJ Case Rep* 2019;**12**:e227250. doi:10.1136/bcr-2018-227250

Figure 1 MRI pelvis showing sciatic notch with the lesion extending to gluteal region.

Figure 2 MRI pelvis showing the discrimination between the two sides. RHP, right hip posterior view.

Figure 3 MRI angiography showing the vascular bed of the P.S.A.

Figure 4 MRI angiography showing the loops of arterioles branching from P.S.A.

Figure 5 Right persistent sciatic artery in a conventional angiography in relation to common iliac vessels.

Figure 6 Arterial angiography catheter introduced in the P.S.A. The arrow pointing to PSA root.

One may question the need for treatment for our case altogether. They may argue that femoral artery is present and it supplies the lower limb by popliteal artery. Nevertheless,

we decided to intervene because: the sudden increase of the size, the discomfort feeling the patient experienced, the huge asymmetry which disfiguring, not to forget the big venous

Figure 7 Arterial angiography showing the vascular bed of the lesion.

Figure 10 A coil was introduced at the neck of the malformation in an attempt to occlude it.

Figure 8 The angiography showing the venous bed.

Figure 11 The failure of the coil to occlude the blood flow from pooling to the arteriovenous anomaly.

Figure 9 The angiography showing the venous plexus of P.S.A.

Figure 12 Introducing a stent to bridge between superficial femoral and common iliac artery and to bypass the origin of the persistent sciatic artery.

Figure 13 The moment when the stent was deployed to bridge between superficial femoral and common iliac artery and to bypass the origin of the persistent sciatic artery.

pool that may harbour clots (that may dislodge and endanger her life). Besides, the MRI showed the destruction of the fascia of the gluteus medius and maximus that may point on a pending rupture.

Figure 14 Successful exclusion of the anomaly.

Patient's perspective

I was very pleased by both the diagnosis and how it was treated.

They told me in the beginning that this may be a type of cancer.

It turns to be related to a defect in my vessels since I was in the womb of my mom.

The treatment was with wires and needles introduced through my groin. They gave me local anaesthesia so I don't feel pain. I stayed overnight in the hospital.

Next morning I could notice the relief of the discomfort I used to have.

Within one week the mass regressed to less than half.

Learning points

- ▶ Interestingly the diagnosis was overlooked by MRI but easily picked up by conventional angiography.
- ▶ Endovascular procedures are proving their superiority on daily bases.
- ▶ Deferring the biopsy was a wise decision as it could have complicated the case and the diagnosis as well.
- ▶ This case questions if aneurysmal changes in persistent sciatic artery particularly are congenital or due to repeated trauma as it was thought earlier.

Contributors HKA is the sole author of this manuscript.

Funding The author has not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

REFERENCES

- 1 Victoria santaolalla angioand vascular surgery, hospital general yague. 2010. Burgo < Spain Plum x metrics online April05.
- 2 Van Hooft IM, Zeebregts CJ, van Sterkenburg SMM, *et al.* Reijnen European journal of vascular & Endovascular Surgery. *The Persistent Sciatic Arter* 2009;37:585–91.
- 3 Ito H, Okadome K, Odashiro T, *et al.* Kyushu University, Fukuoka, Japan persistent sciatic artery two cases report and review of literature *cardiovasc. Surg* 1994;2:275–80.

Copyright 2019 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow