CASE REPORT

A popliteal aneurysm with upper thigh extension: a tip of the iceberg finding

Sufian S Ahmad,¹ Dimitrios Stergios Evangelopoulos,^{1,2} Sandro Kohl¹

¹Department of Orthopaedic Surgery, University of Bern, Bern, Switzerland

²Department of Orthopaedic Surgery, University of Athens, Athens, Greece

Correspondence to

Dr Dimitrios Stergios Evangelopoulos,
ds.evangelopoulos@gmail.com

SUMMARY

A 75-year-old male patient was referred to our orthopaedic department due to progressive weakening of the left leg, noticed while going up and down stairs, and swelling of the thigh. An increase in swelling was noted in association with spicy food. Clinical examination showed a palm-sized non-pulsatile soft mass in the popliteal region and swelling in the posterior-lateral thigh. MRI revealed a space-occupying 40×15×10 cm mass extending into the upper thigh without infiltrating character. Angiography was negative. Open surgical biopsy was performed to rule out a soft tissue tumour, during which, connection to the popliteal artery was identified. The patient underwent excision of the aneurismal sac and a prosthetic graft was interplaced. On follow-up, the patient noticed a rapid increase in muscle strength; stairs were no longer a problem.

BACKGROUND

This is a case of muscle weakening in the thigh caused by a palpable popliteal mass that turned out to be a large space-occupying popliteal aneurysm extending into the upper thigh.

CASE PRESENTATION

A 75-year-old male patient was referred to our orthopaedic department due to an 8-month history of progressive leg weakening, noticed mainly while going up and down stairs and swelling in the popliteal region and posterior-lateral thigh that increased after eating chilly food.

The patient was initially seen by a rheumatologist and vascular surgeon who suspected a Baker's cyst, due to which he was referred to our department.

History of the patient revealed only a mild osteoarthritis of the knee, otherwise there was no injury or trauma.

Clinical examination showed a palm-sized non-pulsatile soft mass in the lateral popliteal region and swelling of the posterior-lateral thigh, slightly painful full extension and weak active flexion of the left knee. Distal pulses were intact on both sides.

INVESTIGATIONS

Initial blood tests were unsuspicious with infection parameters within normal range.

Ultrasonography of the popliteal fossa showed a homogeneous mass extending upwards into the upper thigh.

MRI showed a hyperintense, space-occupying 40 cm×15 cm×10 cm mass without infiltrating character (figures 1 and 2).

Figure 1 MRI showing the coronal view of the lesion, demonstrating the extension to the lateral thigh.

Angiography demonstrated continuous flow through the popliteal artery with no aneurysmal dilation (figure 3).

The patient underwent open surgical biopsy to rule out a soft tissue tumour, during which, after puncture of the mass, 3 L of light brown fluid had to be evacuated and inspection was continued with an arthroscope, showing a lobulated cavity containing a mixture of blood clots, solid red tissue and macroscopic insular haemosiderin spots (figure 4). Connection of the cavity to the popliteal artery was identified during exploration and several

Figure 2 MRI showing the axial view of the lesion, demonstrating the extension to the lateral thigh.

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Figure 3 Angiography of the distal femur showing no connection to the tumour.

intralesional and cavity wall biopsies were obtained and histologically evaluated to rule out malignancy, showing hyaline connective tissue and erythrocyte remains.

DIFFERENTIAL DIAGNOSIS

The reason for which the patient was referred by the general practitioner was the suspicion of a giant Baker's cyst. In this case, even after ultrasonography and MRI were performed, it was difficult to identify the tumour; a soft tissue tumour had to be ruled out by open biopsy.

A popliteal aneurysm was initially considered unlikely, primarily due to the size of the tumour and secondarily due to the absence of vascular symptoms.

TREATMENT

Together with the vascular surgeons, the aneurysm was excised, the sac was removed and a prosthetic graft interposition was performed.

Figure 4 Arthroscope view of the cavity during surgical exploration.

OUTCOME AND FOLLOW-UP

One year postoperatively, the patient noticed a regain in muscle strength; stairs were no longer a problem. On clinical examination, knee flexion was equally strong on both sides.

DISCUSSION

The most common cystic lesion in the popliteal fossa is the Baker's cyst, usually presenting as a posterior bulge that does not necessarily cause symptoms.¹ Interestingly, an intramuscular extension of a Baker's cyst has been recently described in the literature,² justifying the initial suspicion of a Baker's cyst in our patient.

A second important identity of a popliteal mass is the popliteal artery aneurysm (PAA). It accounts for 70% of peripheral artery aneurysms,^{3–4} usually associated with atherosclerosis. Clinical symptoms of PAA include pain, intermittent claudication, thrombosis, distal embolisation, compression symptoms and severe acute limb ischaemia.^{5–8} However, up to 80% of patients are asymptomatic on diagnosis.⁹ Diagnosis of PAA is usually made by duplex sonography,^{5–10} although in our case, disconnection of the saccular aneurysm from blood flow during the investigation hindered a definitive diagnosis.

We present a case of a large space-occupying saccular popliteal aneurysm progressively enlarging in size and presenting as a posterior popliteal bulge extending into the upper thigh causing weakness of the muscles. Interestingly, the increase in swelling realised by the patient in association with spicy food could be caused by the known vasorelaxative effects.¹¹

We highlight that a popliteal aneurysm could occupy a large size without causing vascular symptoms; enlarge in a compressing manner causing muscle hypotrophy and weakness as a primary symptom, and that a palpable mass in the popliteal fossa could have a large extension into the soft tissue.

Learning points

- ▶ A popliteal artery aneurysm can enlarge in a compressing manner causing muscle weakness as a primary symptom.
- ▶ A palpable bulge in the popliteal fossa could have a large extension into the soft tissue—tip of the iceberg.
- ▶ Not even in the presence of a massive popliteal aneurysm are vascular symptoms mandatory.

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Competing interests None.

Patient consent Obtained.

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