

Lower limb ischaemia due to occlusion of a persistent sciatic artery aneurysm – a case report

*Isquemia crítica do membro inferior por trombose
de aneurisma de uma artéria ciática persistente
– caso clínico*

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| R e s u m o | | A B S T R A C T |

A persistência da artéria ciática é uma anomalia embriológica rara. Os autores relatam o caso clínico de um homem de 81 anos de idade, que se apresentou com sinais de isquemia do membro inferior direito associado a uma massa pulsátil na região glútea. Foi realizada uma angiografia por TC que mostrou a presença de uma artéria ciática completa e unilateral no membro inferior direito, com degenerescência aneurismática no seu terço proximal. Durante a avaliação pré-operatória, o doente desenvolveu um quadro de isquemia crítica por oclusão espontânea do aneurisma da artéria ciática, pelo que foi submetido com sucesso a um bypass femoro-poplíteo infra-genicular.

A revisão da literatura confirma a raridade desta entidade, assim como a tendência da artéria ciática para alterações degenerativas precoces. A correção cirúrgica deve ser expedita para prevenir complicações decorrentes das alterações degenerativas.

Persistent sciatic artery is a rare embryological anomaly. The authors report the clinical case of a 81-year-old man presenting with a right lower limb ischaemia and a pulsatile mass in the buttock. Computed tomographic angiography demonstrated a complete and unilateral persistent sciatic artery, with an aneurysmal degeneration on its, proximal third. During the pre-operative workup, spontaneous aneurysmal occlusion occurred, worsening the condition to a critical ischaemia. The patient underwent, successfully, a distal femoro-popliteal bypass.

Review of the literature confirms the rarity of this anomaly, which is frequently associated to degenerative changes. Surgical repair is prompt recommended to prevent complications.

| **Key words** | PERSISTENT SCIATIC ARTERY | LIMB ISCHAEMIA

| **Palavras-chave** | ARTÉRIA CIÁTICA PERSISTENTE |

| ISQUEMIA DOS MEMBROS INFERIORES |

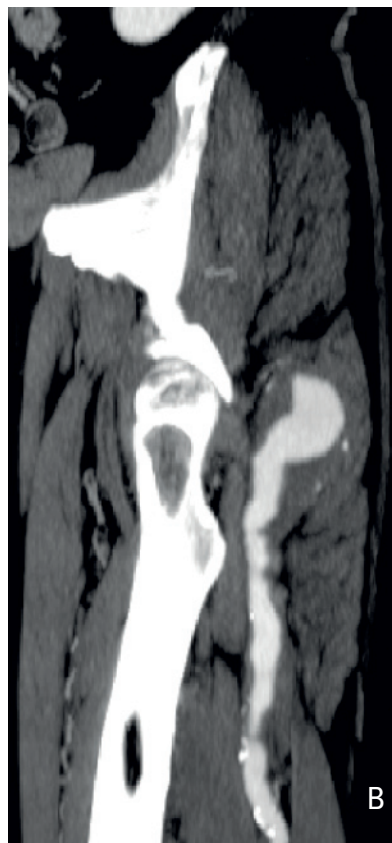
INTRODUCTION

Despite rare, persistent sciatic artery continues to be a challenge in vascular surgery. Due to its embryological origin is more prone to degenerative processes like occlusive atherosclerosis or aneurysmal degeneration. These complications may threaten limb viability.

REPORT

A 81-year-old man, with no previous history of external trauma, presented to our Emergency Department with a right lower limb ischaemia for the last two months and a pulsatile mass in the buttock. At the initial evaluation he presented all pulses in his left limb; in the right limb, the femoral and popliteal pulses were patent, with normal patterns, but no pedal and posterior tibial pulses were palpable. In the right buttock the patient presented a large and pulsatile mass with 6 cm of maximum size, with no associated skin changes.

| FIGURE 1 | *Right persistent sciatic artery with aneurysm degeneration on its origin, CT Angiogram (A) and Sagittal view (B).*



Computed tomographic angiography revealed hypoplasia of the right superficial femoral artery, which size was small, coursing medially and ending at the middle thigh in some muscular branches. CT also showed a dilation of the right internal iliac artery, and a posterior circulation to the lower limb supplied by a persistent sciatic artery, with a fusiform aneurysm located in the gluteal region. The artery courses along the thigh until the Hunterís channel, than continuing as popliteal artery. There were no vascular alterations or persistent sciatic artery in the opposite limb | FIGURE 1 |.

The patient was admitted to our department for more detailed evaluation. During the pre-operative workup he developed a critical limb ischaemia with

| FIGURE 2 | *Infra-genicular femoro-popliteal bypass with homolateral great saphenous vein.*



rest pain, coolness and numbness of his right foot. Emergent angiogram revealed complete occlusion of the persistent sciatic artery aneurysm. During the same workup he was also submitted to a duplex ultrasound examination that revealed a satisfactory right great saphenous vein, suitable for bypass.

He was transferred to the operating theater and successfully submitted to a distal femoro-popliteal bypass with homolateral great saphenous vein | FIGURE 2 |. There were no postoperative complications and the patient was discharged at the seventh postoperative day in pretty good condition and with no complaints.

One month after surgery the patient was found asymptomatic and the duplex ultrasound examination showed a right patent femoro-popliteal bypass.

DISCUSSION

First described by Green^[1] in 1832, the persistent sciatic artery remains a rare congenital anomaly. Isolated cases and small series have been reported over the world, and its incidence has been estimated in 0.03 ñ 0.06%^[2]. Diagnosis is usually performed in the presence of complications, such as aneurysmal degeneration and its complications, rupture, thrombosis, distal embolization and local compression (sciatic neuropathy)^[3,4]. It should be suspected in case of absence of femoral pulses, but with present popliteal and/or pedal pulses (Cowie's pathognomonic sign)^[2,4].

The approach to this entity consists in the treat-

ment and prevention of its complications, such as early atherosclerosis and aneurysm formation, as has been stated. Sciatic artery develops from the internal iliac artery and represents the major blood supply to the developing lower limbs, during the first 22 mm of the embryonic stage^[3,5]. Later, the artery initiates a regression originating part of the popliteal artery and the superior and inferior gluteal arteries. During the same period the external iliac artery, the common and the superficial femoral artery differentiate and will supply the developing limb. If for some unknown reason there is a failure in the development of the femoral system or failure of regression of the axial sciatic artery, it may persist as the dominant blood supply to the lower extremity^[3,5]. Because of its embryological origin, the artery displays different proprieties that render it more fragile to degenerative processes.

Due to its rarity, no "gold standard" approach is recognized for its management. In the literature review, there are reports of local aneurysm excision and prosthesis interposition, endovascular approaches with stenting or aneurysm coil embolization^[4], including the more conservative and usual treatment that we had performed, a distal femoro-popliteal bypass using the autologous reversed saphenous vein.

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