# Persistent sciatic artery as collateral for an occluded iliofemoral system

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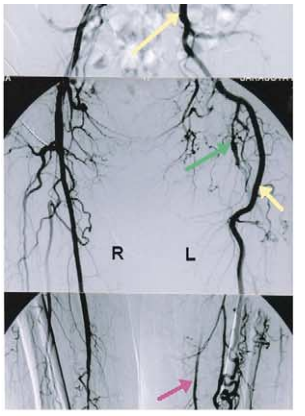
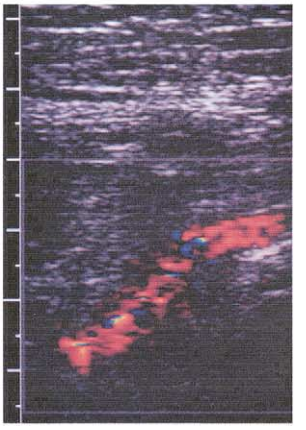
A 68-year-old woman on chronic coumadin therapy for atrial fibrillation presented in 1992 with chronic bilateral leg claudication. Her left femoral pulse was not palpable, but the popliteal and pedal pulses were palpable. Noninvasive studies demonstrated occlusion of the left external iliac, common and superficial femoral arteries, and the right popliteal artery. The ankle-brachial index (ABI) was bilaterally reduced at 0.62. Her claudication improved, and she was left with nonlimiting right leg symptoms.

She presented again in 2003 with worsening right leg claudication. Her ABI on the right was unchanged. The left ABI had increased to 0.78, and pulse volume recordings had also increased in amplitude on that side. Arteriography (A, *yellow arrows* showing left side persistent sciatic artery, *green arrow* deep femoral artery, and *pink arrow* reconstituted distal superficial artery and computed tomography (CT) arteriography using 16-slice technology (B, Cover) demonstrated occlusion of the right distal superficial femoral and popliteal arteries. The left external iliac, common femoral, and proximal superficial femoral arteries were occluded. The deep femoral artery was atretic. A large persistent sciatic artery reconstituted the above-knee popliteal with retrograde flow up the middle third of the superficial femoral artery to where the latter was obstructed. Color duplex sonography confirmed the presence of this aberrant collateral artery coursing through the buttock and posterior thigh (C) Duplex scanning established that the left external iliac, common femoral, and proximal superficial femoral arteries were present but occluded and that these arteries were only slightly narrower than their patent right leg counterparts.







## DISCUSSION

Persistence of the sciatic artery is extremely rare.[1,2] This case appears to be the first reported instance in which the anomalous sciatic artery has served as an important collateral that has spared a patient from symptoms associated with acquired femoral artery occlusion (either embolic or atherosclerotic).

Arteriography remains the prime diagnostic method. However, as this case illustrates, spiral CT arteriography can certainly add to the diagnosis by showing the relationship of the arteries to the bony landmarks.[3] In fact, the CT arteriogram in this patient was clearly equal in quality, if not superior, to the standard intra-arterial arteriogram. Color duplex scanning was helpful in demonstrating that the femoropopliteal system was probably developmentally normal but secondarily occluded by an old embolic event or, less likely, atherosclerosis. Color duplex scanning via a posterior approach also allowed identification of the persistent sciatic artery and its collateralization of the above-knee popliteal artery.

## REFERENCES

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