Challenging case of complicated aneurysmal Persistent Sciatic Artery

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Background

Persistent Sciatic Artery (PSA) is a rare congenital vascular anomaly found in 0.03-0.06% of the population. It is either symptomatic or asymptomatic. It may present as a pulsatile gluteal mass. However, it can cause acute critical limb ischemia with serious complications. It is classified into: type I: complete PSA with normal femoral artery, type II: complete PSA with abnormal femoral artery (IIa) or absent femoral artery (IIb) and types III and type IV: incomplete PSA with normal femoral artery. The only difference is that the upper part of sciatic artery has persisted in type III, while it is the lower part in type IV. In type V, the PSA originates from the median sacral artery either with a normal femoral artery (IIa) or absent femoral artery (IIb) and types III and type IV: incomplete PSA with normal femoral artery.

Case Summary

A 58-year-old man presented with acute right limb ischemia. Preoperative CT angiography revealed type IIa PSA and embolic infra-genercular popliteal occlusion. Patient underwent emergency popliteal embolectomy, intra-arterial tPA infusion (thrombolysis) and prophylactic fasciotomy. Completion angiogram showed patent posterior tibial artery and planter arch. One week later, he developed progressive acute right lower limb ischemia. CT angiogram showed distal thrombosis of posterior tibial artery. Trials of catheter directed thrombolysis for 36 hours have failed. The patient underwent urgent left popliteal artery thromboembolectomy. However, his condition did not improve, so right below knee guillotine amputation was done, followed by 2ry sutures then healed completely.

Discussion

Aneurysm formation occurs in about 40% of PSA.[2] It usually presents as a pulsatile gluteal mass. Less frequently, patients present with sciatic neuropathy, distal ischemia or rupture.

Aneurysm exclusion alone either by ligation or endovascular embolization is mandatory in case of incomplete type, because of potential damage to the adjacent sciatic nerve; exposure and surgical dissection of the aneurysm are not recommended.

In complete type, as in our case, a femoro-popliteal interposition graft should precede the aneurysm exclusion as a standard treatment.[4]

The endovascular stent graft placement has been reported as an effective method of repair for PSA aneurysm,[5] provided that there are no significant associated compressive symptoms, but it still has the risk of distal embolization, as occurred in our case who has only one tibial vessel survived from the thromboembolectomy trial, these conditions put the limb in highly progressive ischemic course.

Conclusions

Asymptomatic PSA should be followed up closely without any intervention. However, symptomatic PSA should be managed as early as possible to avoid serious complications. Management of aneurysmal PSA is mainly by endovascular embolization either alone as in case of incomplete type or with femoro-popliteal bypass in complete type. Endovascular stent graft has accepted outcome. Microembolization from the aneurysm is a rare complication during endovascular intervention and may pass unnoticed, but it might be hazardous especially in borderline distal circulation.

References


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