Introduction

Tibial arteries are rarely involved by true aneurysms; most of cases reported in the literature are false aneurysms, since a traumatic event is often found in the patient's history. The true infrapopliteal aneurysms represent a surgical problem, especially when a bifurcation is involved and when the distal vessels are affected by occlusive disease. More frequently the cause is an atherosclerotic degeneration of arterial wall, but sometimes mycotic etiology is reported in literature (1-3).

In our case, a true aneurysm involving the origin of the posterior tibial and peroneal arteries was found and a surgical repair was carried out successfully.

Case report

A 67 year old man was admitted to our Department for a pulsatile painful mass in the antero-lateral compartment of the right leg and for an omolateral blue toe syndrome. The onset of symptoms was
only few days before admission, during his working activity. There
was not history of trauma, claudication and/or foot ischemia. No risk
factors for atherosclerotic disease were detected: he had never been a
smoker and his serum cholesterol level and blood pressure values were
in normal range. His past medical history was also not contributory.

On physical examination, a painful pulsatile mass was found on
the antero-lateral compartment of the leg just below the knee. All
peripheral pulses were present at the ankle. After a duplex ultrasound
(DUS) of the popliteal and tibial vessels, an angiography
was carried out and a 5 cm diameter saccular aneurysm was con-

Discussion

The true aneurysms of the infrapopliteal arteries are
an unusual pathology with low incidence in general pop-
ulation. They appear in the literature as isolated case
reports (Tab.1). When those aneurysms become symp-
tomatic, the patients can be observed on emergency for
acute or critical leg or foot ischemia due to distal em-
bolization or thrombosis of the aneurysm itself (4,5). In
2 cases microembolization with subsequent blue toe syn-
drome was reported (6,7). Sometimes the patients
complain for chronic symptoms like claudicatio, rest pain
or painful pulsatile mass. In only one case compression
of the peroneal nerve was reported (8). Two patients had
the rupture of tibial aneurysm: one of them complained
for an acute compartment syndrome of both lower legs
due to ruptured mycotic aneurysms of tibial arteries (10).
Furthemore, it must be emphasized that those aneurys-
sms may be identified accidentally by angiography or
computed tomography (CT) scan carried out for occlusive
disease (11,12). The diagnosis is not easy since digital or
leg ischemia, claudicatio and pain are not typical or sug-
gestive. Only the finding of a pulsatile mass can led to
suspect an aneurysm (13-15). Nevertheless, the diagnosis
can be reached by means of ultrasound, CT scan, ma-
gnetic resonance imaging (MRI) or digital subtraction
angiography (DSA).

The treatment depends on the clinical presentation.

When the aneurysms are small and asymptomatic, they
can be followed for a long period by DUS, since the in-
cidence of complications and the progression in size seems
to be low. However, complications can occur indeed.
When large and/or symptomatic aneurysm is found, the
choice treatment is surgery.

There is no evidence in literature about endovascu-
lar exclusion by covered stent of infrapopliteal true aneury-
sms, probably due to the small vessels diameter, althou-
g a case of coil embolization is described (16). The pro-
cedure should be planned on the basis of angiographic
findings (DSA, CT scan or MRI) and, if possible, the
tibial arteries should be repaired to allow a better per-
fusion of the leg, especially when other vessels are occluded.
by microembolization or atherosclerotic lesions. In such conditions, the use of autogenous saphenous vein graft as a bypass (2,6,13,17-20) or as a patch (7,21) is the first choice, since it allows the best long-term patency rate. When the autologous vein is not available, a thin wall polytetrafluoroethylene (PTFE) graft could be used, but its employment is described principally in popliteal aneurysm repair; in three cases a PTFE popliteal-tibial artery bypass was carried out (22,23). In one patient an end-to-end anastomosis was performed after aneurysm excision (24). If the tibial arteries are in good conditions, the simple ligation of the aneurysm can be sufficient and safe and it can be left in place (8,10,14) or resected (4,15,25-30).

**Conclusion**

Although the aneurysms of the infrapopliteal arteries are very uncommon and often asymptomatic, their associated vascular lesions and/or ischemic complications can lead to high risk of limb loss; therefore we believe that, when the aneurysm is large and/or symptomatic, the surgical treatment becomes mandatory.

The reconstruction of the arteries should be preferred especially when those ones are involved by occlusive disease.

A conservative treatment and a follow up by of DUS could be reserved to elderly patients and when the aneurysm is small and asymptomatic.
<table>
<thead>
<tr>
<th>Author, year</th>
<th>Age</th>
<th>Localization</th>
<th>Cases, n</th>
<th>Bilateral</th>
<th>Etiology</th>
<th>Symptoms</th>
<th>Treatment</th>
<th>Follow-up</th>
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<td>Venous bypass</td>
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References

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