

Treatment of Popliteal Artery Aneurysm What is the Best repair ?

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Background

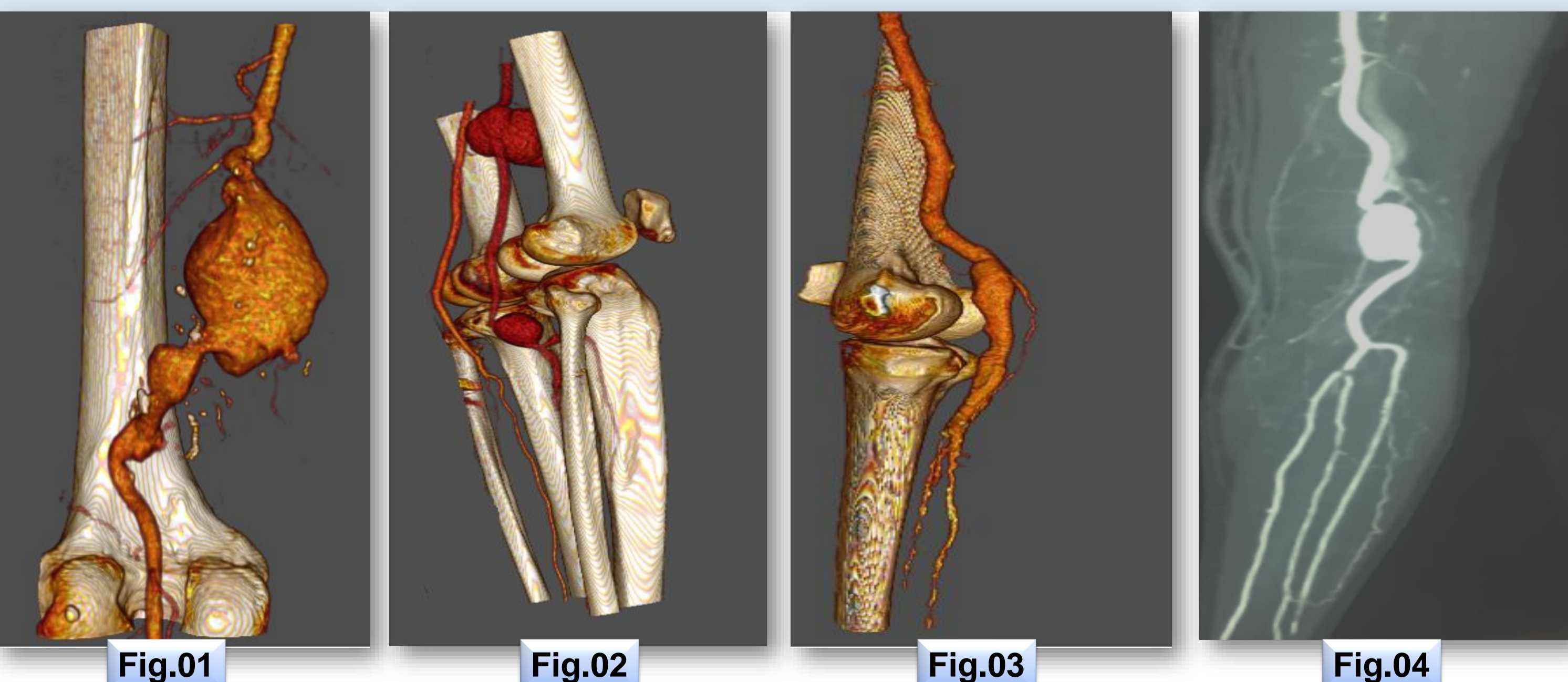
Popliteal artery aneurysm (PAA) is the most commonly reported peripheral artery aneurysm. It accounts for 70% of lower extremity aneurysms and has an estimated incidence of 0.1% to 2.8%. Etiologies of popliteal aneurysms are multiple : atheroma, trauma, infectious and inflammatory behcet disease) Untreated these lesions expose to severe complication thrombosis, embolism and ruptures. The aim of this study was to retrospectively review the indications for treatment and the results of open and endovascular repair of PAA

Patients & Methods

From 2010 to 2018, 27 open surgery (OR)and endovascular interventions(ER) for PAA were performed in our department ;[15 cases (OR) and 12 cases (ER)] Data from all the interventions were retrospectively collected The sexe age, etiology and type of lesion (**table I**) were analyzed to choose a surgical technique . 60% of our patients were symptomatic. in 01 case PAA was associated with an abdominal aortic aneurysm(behcet). A duplex ultrasonography (DU) and computed tomography angiography (CTA) was performed in all patients to realized the diagnostic , sizing and evaluate tibioperoneal runoff vessel (fig 1-2-3-4)

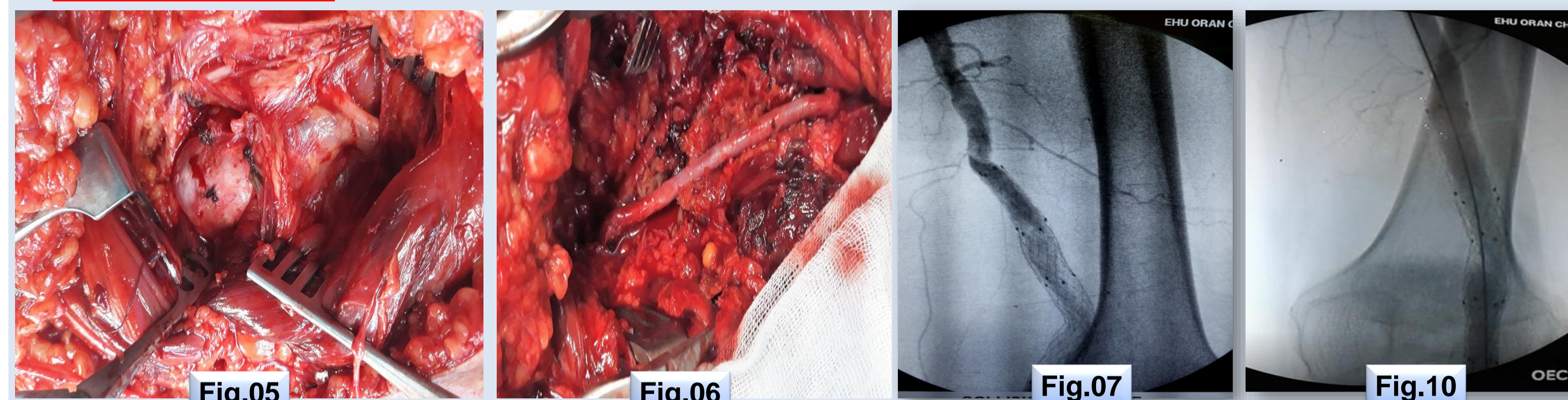
| SEXE | 23 men | | 04 women |
|------------------|--------------------|-------------|-----------|
| AGE | [25 _ 83 y] 65y | | |
| ETIOLOGY | 15 Atherosclerosis | 06 Behçet | 06 trauma |
| ANATOMOPATHOLOGY | 12 false aneurysm | 15 aneurysm | |

Table I :Background characteristics in context of treatment modality



Treatment

all procedure with loco regional anaesthesia



- OR group :** 06 cases had a false ,09 PAA
- 13 cases were treated with aneurysmectomy and graft interposition (in 10cases with an autologous saphenous Vein and in 03 cases with prosthetic graft)
 - 02 cases, proximal and distal ligation of the aneurysm with bypass with vein graft
 - A posterior approach was used in 03 cases (**fig 05 -06**)
- ER group:**
- all the patients had a stent graft placement (**fig 07-08**)
 - Access through the ipsilateral femoral artery was achieved by the cut-down with 12 F introducer sheaths
 - dual therapy using ASA and 75 mg/day clopidogrel was administered for 12 month postoperatively ; statines to atheromatous and treatment of Behçet disease

Results

The length of hospital stay was 2 days in ER and 6day in OR All patients underwent postoperative follow-up at one, three, six, and 12 months and yearly the reafter; the mean patency follow-up was 20(ER) vs 30 months (OR). follow-up included clinical examination,(color DU) And plain radiography of the knee (flexion/extension views)

Follow Up in OR group:

All patient discharged in a good state
01case occluded the bypass after 15 months(he is asymptomatic)
01case (deep veinous thrombosis) treated by oral anticoagulant

Follow Up In ER group:

01case occluded in peroperatory his stent , a desobstructionwere realized with Fogarty embolectomy catheter the patient has recovered a popliteal pulse
All patient discharged in a good state
01 patient : transmetatarsal amputation (he had AOD)
➤ good evolution , stents are permeable ,
➤ no fracture at the stress zones, (**fig 09**)
➤ no endoleaks in duplex ultrasound (**fig 10**)



Fig.09

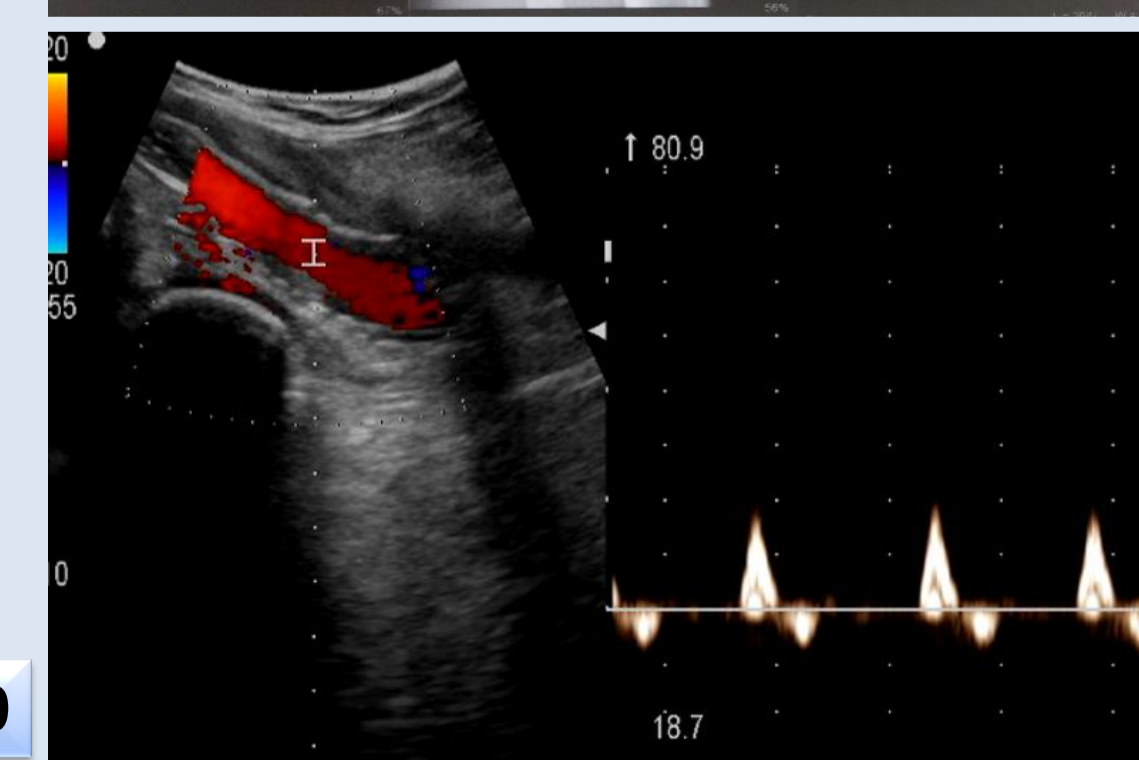


Fig.10

Discussion

This observational study was based on retrospective review *Monocentric* we operated 27 patients 15 OR and 12 ER . The criteria of unclulsion was Age,etiology ,type of lesions; symptomatology.

The ER

was indicated in old patients with high risk, provided they showed a favorable anatomy, defined as proximal and distal landing zone >10 mm, a caliber difference between the two segments of <2 mm, and a possible distal landing zone of the stent graft in the infrageniculate popliteal artery.

05 patients with behcet disease has been treated by stent graft ; except 01 patient who had a false aneurysm in segment P2 of popliteal artery treated by aneurysmectomy and saphenous Vein interposition .

The OR

was preferred in symptomatic aneurysms, with complex anatomical features and often in the presence of arterial occlusive disease. we use the prosthetic graft only if the vein is bad .

It has been clearly demonstrated that the vein graft offers an advantage in terms of early and late results in patients with PAA and in our experience, suggesting that an autologous vein can be considered the material of choice in OR patients In our follow up 01 patient occluded his bypass and he is asymptomatic despite our study limitation was the low number of cases ; if we compare it to the results of the other studys we have the same conclusion

Midy,D and all (1):concluded that endovascular exclusion of PAA using a stent graft is feasible in selected patients. In 2013,

Pulli and all (2): published an analysis of a multicenter retrospective registry concluded that if a meticulous analysis of each aneurysm/patient is conducted to choose the appropriate treatment .

In 2015, Cervin et al (3): revealed an important clinical difference between the OR and ER groups, in favor of OR and raises questions about use of ER to treat PAA.

Conclusion

Although traditional surgical repair is still considered the gold standard in the treatment of PAA, the ER approach has been gaining popularity and interest, due to the easy deployment of stent grafts and to the low invasiveness of the procedure. endovascular repair should be considered, case by case The ER may be a viable option if we selected patients; but its true benefits have not yet been established.

References:

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