Hybrid surgical treatment of bilateral aorto-femoral occlusion: a clinical case

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Disclosure

Speaker name:

...................Chernova DV..................................  

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☑️ I do not have any potential conflict of interest
The challenges of multilevel lower extremities lesions:

- ~ 20% patients with PAD
- Usually elderly patients (older 70 years):
  - Increased risk of open reconstructions because of comorbidities,
  - Increased risk of combined arterial lesions,
  - Increased risk of multilevel lesions in one arterial area..

Mini invasive strategy of hybrid surgery..
Hybrid techniques in management of peripheral vascular disease

– rational combined treatment of patients suffering from PAD with endovascular and open (“classic”) surgery, performed simultaneously and in a single operating room.
### Recommendations on revascularization of aorto-iliac occlusive lesions

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Level&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>An endovascular-first strategy is recommended for short (i.e. &lt;5 cm) occlusive lesions.</td>
<td>I</td>
<td>C</td>
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<tr>
<td>In patients fit for surgery, aorto-(bi)femoral bypass should be considered in aorto-iliac occlusions.</td>
<td>IIa</td>
<td>B</td>
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<tr>
<td>An endovascular-first strategy should be considered in long and/or bilateral lesions in patients with severe comorbidities.</td>
<td>IIa</td>
<td>B</td>
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<tr>
<td>An endovascular-first strategy may be considered for aorto-iliac occlusive lesions if done by an experienced team and if it does not compromise subsequent surgical options.</td>
<td>IIb</td>
<td>B</td>
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<tr>
<td>Primary stent implantation rather than provisional stenting should be considered.</td>
<td>IIa</td>
<td>B</td>
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<tr>
<td>Open surgery should be considered in fit patients with an aortic occlusion extending up to the renal arteries.</td>
<td>IIa</td>
<td>C</td>
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<tr>
<td>In the case of ilio-femoral occlusive lesions, a hybrid procedure combining iliac stenting and femoral endarterectomy or bypass should be considered.</td>
<td>IIa</td>
<td>C</td>
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<tr>
<td>Extra-anatomical bypass may be indicated for patients with no other alternatives for revascularization.</td>
<td>IIb</td>
<td>C</td>
</tr>
</tbody>
</table>

<sup>a</sup> Class of recommendation.

<sup>b</sup> Level of evidence.

<sup>c</sup> These recommendations apply for patients with intermittent claudication and severe chronic limb ischaemia.
Clinical case

A 72-year-old man

- Progressively worsening claudication of both lower extremities,
- Walking capacity less 100 m,
- ABI right 0.49 / left 0.54

Risk factors:
- Smoking
- Arterial hypertension
- Hyperlipidemia
- Diabetes mellitus
Co-morbidity:

- Atherosclerosis of the brachiocephalic arteries (occlusion of the left internal carotid artery, stroke in 2017),
- CAD (MI in 1997), PTCA of the right coronary artery in 2018.

According to the angiography of the lower extremity arteries:

- Occlusion of the left common iliac artery (CIA);
- Occlusion of the right external iliac artery (EIA);
- Occlusion of the right common femoral artery (CFA) and superficial femoral artery (SFA), ostial stenosis profound femoral artery (PFA) to the right.
Surgical strategy:

- Using local anesthesia (Lidocaini 0.1%);
- **Endarterectomy from right CFA, ostium PFA, xenopericardial patch plasty;**
- Angiographic control via the right brachial artery (*PigTail)*;
- Retrograde subintimal recanalization of CIA on the left by *glidewire stiff (0,035”)*;
- Retrograde recanalization of EIA on the right by *glidewire stiff (0,035”)*;

Balloon angioplasty with stenting of EIA on the right, followed by balloon angioplasty with CIA stenting on the left (*predilatation ballon d=5mm, selfexpanding nitinol stents, optimal postdilatation*)
Result:

- The early postoperative period without features,
- Ankle-brachial index increased - right 0.71/ left 0.89;
- The patient was discharged on the 3rd day after surgery;
- In duplex-control after 1 and 3 months — stents with good inflow.
Conclusion

- Hybrid procedures on the aorto-femoral segment can avoid extensive surgical trauma, postoperative complications and reduction in hospital stay;
- Endarterectomy in CFA improves blood flow and recommended for patients with it occlusions/hemodynamic stenosis;
- Hybrid treatment of such lesions is a safe, feasible and minimally invasive method with lower mortality than open surgery, especially in high risk patients.

**P.S.** In case of the return clinic of progressive ischemia of the right lower limb to this patient, revascularization of the femoral-popliteal segment is possible.
Thank You!
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