FEMORAL - INTERNAL ILIAC BYPASS IN AORTOILIAC ANEURYSMS ENDOVASCULAR REPAIR

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The authors describe femoral - internal iliac bypass creation to remove ischemic complications in aortoiliac aneurysm endovascular repair. Based on a good experience with bypass in 6 patients they recommend its preventive indication when both internal iliac arteries are overstented.

INTRODUCTION

Indication for abdominal aortic aneurysm (AAA) endovascular repair (EVAR) depends on AAA morphology. In patient selection for endovascular grafting helps AAA morphological classification^{1,2}. Extension of the aneu-

rysm to the iliac bifurcation (aortoiliac AAA of type II C according to Schumacher - type D,E to EUROSTAR classification) is considered to be one of the exclusion criteria for EVAR³. The stentgraft must be extended into the external iliac artery. The internal iliac artery is excluded from the direct blood flow and its origin must be occluded to prevent retrograde endoleak. Artificial occlusion of to this time open both internal iliac arteries may be tolerated, but with concomitant exclusion of inferior mesenteric artery and lumbar arteries by aortic stentgraft the risk of severe

Fig. 1. AAA extending to the iliac bifurcation - TYPE II C/2 according to modified Schumacher - TYPE D, E to EUROSTAR (CTA)

Fig. 2. Successful exclusion by BIFURCATED TYPE of ELLA STENTGRAFT, both iliac limbs are anchored to the external IAs, the origins of internal IAs are ligated (DSA)

Fig. 3. SCHEME of AAA of type II C/2 excluded by bifurcated stentgraft with femoral - internal iliac bypass

Fig. 4. GROIN ACCESS to the internal iliac artery (PER-OPERATIVE VIEW)

Fig. 5. Patent FEMORAL - INTERNAL ILIAC BYPASS at the right side (DSA)

ischaemia can be significant³⁻⁷. Concomitant anatomical factors, however, are of importance. The basic condition is patent superior mesenteric artery³.

METHOD

From April 1996 to April 2004 we treated endovascularly 140 infrarenal AAA with Czech made ELLA stent-graft system⁸⁻¹¹. In 25 patients the aneurysmal dilatation of the common iliac artery necessitated extension of the

device across the internal iliac artery origin. In 12 of these patients (AAA of type II C/2) the internal iliac artery origin was overstented and then occluded on both sides (Fig. 1, 2). Severe ischemic complications (colorectal and spinal cord ischemia) did not occur, but the first 6 patients had indefinite pelvic discomfort and hip-buttock claudications.

In the last 6 patients one of the two ligated internal iliac arteries was transected and anastomosed using ePTFE prosthesis interposition with common femoral artery from groin access (Fig. 3, 4).

There were no procedure related complications. All the bypasses are primarily patent to date and the patients are ischemic symptom free (Fig. 5).

CONCLUSION

From our point of view aortoiliac aneurysms (type II C according to Schumacher - type D,E to EUROS-TAR) are not contraindications for EVAR.

One patent internal iliac artery with direct blood flow (in the type II C/1 of AAA) is quite sufficient.

In patients where both internal iliac arteries have to be ligated at their origin (type II C/2 of AAA) we recommend unilateral femoral-internal iliac bypass from groin access as a simple, safe and effective method to prevent severe ischemic complications and to remove ischemic discomfort.

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