Femorofemoral Crossover Bypass for Unilateral Iliac Artery Occlusive Disease or Secondary Aortoenetric Fistula

Anik Kumar Jha[1], Prachi Pandeya[1], Sudan Dhakal[1], Sandeep Raj Pandey[1]

[1]Department of Vascular Surgery, Annapurna Neurological Institute & Allied Sciences, Maitighar, Kathmandu, Nepal

CORRESPONDENCE

Dr. Anik Kumar Jha
Department of Vascular Surgery,
Annapurna Neurological Institute & Allied Sciences, Maitighar, Kathmandu, Nepal
Email: jhaak1012@gmail.com

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ABSTRACT

Femorofemoral bypass is indicated in symptomatic lower-extremity ischemia due to acute or chronic occlusion of a unilateral Iliac Artery, adjunct to an endovascular unilateral Aortoiliac(AI) exclusion of an Abdominal Aortic Aneurysm (AAA), unavailability of endovascular options for management of iliac occlusive disease,etc.It's contraindicated compromised inflow AI arterial segment, significant obesity that may cause unfavorable graft geometry ,etc. The complication of which leads to femoral nerve injury , hematoma, graft thrombosis and distal emboli etc. Here, We present several cases of Femorofemoral crossover bypass cases in this case study.

Keywords: Abdominal Aortic Aneurysms; Femorofemoral bypass; Fistula.

INTRODUCTION

Femorofemoral bypass is a method of surgical revascularization by insertion of a prosthetic or vein graft between the femoral arteries to bypass an occluded or injured iliac artery. The technique is dependent upon a patent iliac arterial system without hemodynamically significant disease to supply adequate inflow of blood to both lower extremities. It is a commonly used means of extra-anatomic vascular reconstruction for patients with disabling claudication or critical limb-threatening ischemia (CLTI) in whom underlying anatomic constraints rule out endovascular means of restoring in-line flow and those who do not qualify for anatomic reconstruction because of comorbidities that preclude a more invasive open approach.Femorofemoral bypass may also be used as a component of endovascular repair of Abdominal Aortic Aneurysms (AAA), whereupon one aortoiliac system is occluded on an emergency or elective basis to ensure exclusion of the aortic aneurysm.[1] It's indicated in symptomatic lower-extremity ischemia due to acute or chronic occlusion of a unilateral IA, adjunct to an endovascular , unilateral Aortoiliac (AI) exclusion of an AAA,unavailability of endovascular options for managementof iliac occlusive disease ,high-risk patients with significant comorbidities that preclude in-line reconstruction with inflow from the proximal IA or the aorta.[2]

It's contraindicated in compromised inflow aortoiliac arterial segment, significant obesity that may cause unfavorable graft geometry , extreme medical risks for surgery.It wd complicate femoral nerve injury ,Hematoma, Graft thrombosis and distal emboli , Graft infection & Bladder injury.[3] In previous study ,it has been suggested that Femorofemoral bypass may serve as the extra-anatomic operation of choice in high-risk patients with extensive disease who cannot undergo AFB, if the anatomy permits, and noted that AFB should be preferred in low-risk patients with appropriate anatomy.[4]

CASE REPORT

Case 1: A 70-year-old man presented with complain

of active hematemesis and melena for 2 days at the ER. He gave a history of aortic reconstructive surgery 9 years ago. Urgent CT angiography was done which was suggestive of large aortic anastomotic pseudo-aneurysm with aortoenteric fistula(Fig.1) .Urgent Endovascular repair of pseudo-aneurysm with Right femoral artery to Left femoral artery crossover with ligation of Left femoral artery, Left common iliac artery and Left graft limb was done(Fig.2). The patient did well after the surgical management. Routine follow-up was done. Repeat CT-angio was done(Fig.3).No any major complication was encountered.

Figure 1: Aortoenteric PSA

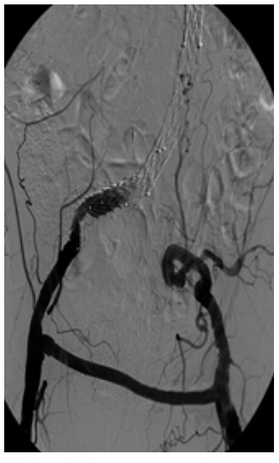


Figure 2: Femorofemoral Crossover

Figure 3: Follow up CT-angio

Case 2: A 66 yr chronic smoker old lady with left lower limb severe claudication & rest pain, associated with 3 toes & ankle gangrene. CT-angio showed CTO of left iliac Artery with reformation of CFA & profunda run. CTO of SFA, Pop Artery & PTA with reformation of ATA A/A (Fig.4). She was advised A/K/A at other center. We planned: Rt-Lt fem-fem crossover with fem-ATA bypass. Right to left fem-fem crossover done with 7 mm e-ptfe graft (Fig.5,6) under spinal anesthesia. Good pulsatile flow observed in left CFA & profunda. ATA exposed showed good downward flow after thrombectomy. ATA closed without bypass. After 3 days gangrenous toes amputated & closed. Ankle gangrenous part debrided (Fig.7,8). Patient was discharged and on regular follow-ups with cessation of smoking.

Figure 4: CTO left iliac artery

Figure : 5

Figure : 6

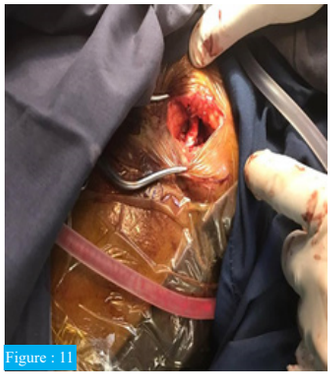
Figure : 7

Figure : 8

Case 3: A 60 yr old gentleman chronic smoker presented with Rt leg claudication & gangrenous 2 toes. CTA showed right iliac artery cto with cfa reformation & sfa cto with popliteal reformation(Fig.9).He underwent left to right fem-fem crossover bypass & rt fem-pop bypass using eptfe interring grafts (Fig10/11). He underwent gangrenous toes amputation which healed well (Fig12,13).He was doing good in follow up but didn't quit smoking & eventually landed with occluded grafts after 2 years (Fig.14).The patient is being managed with best medical therapy.

Figure : 9


Figure : 10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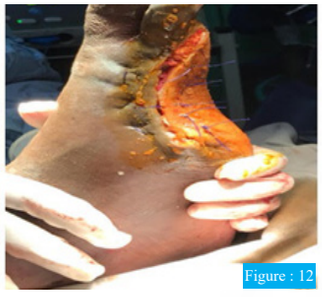
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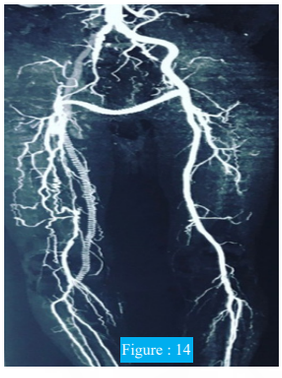
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DISCUSSION

Different surgical approaches can be used to treat unilateral iliac artery occlusion. Aortofemoral bypass is the procedure of choice in patients with severe iliac occlusive disease and who are at a low risk for a surgical procedure. More recently percutaneous transluminal angioplasty and stenting were introduced to treat stenosis and occlusion of TASC A or B in unilateral iliac occlusive disease. At present, the main anatomic indications to this surgical procedure are derived from the TASCII recommendations. The indications for surgery are long segment unilateral iliac disease corresponding to type C or D lesion.[6] FCB represents a follow-ups as she have quitted smoking.

Valuable alternative option to anatomic bypass for unilateral iliac occlusive disease in patients with prohibitive surgical risks for aortic surgery or a poor general condition, coronary artery disease, chronic obstructive pulmonary disease or a local condition such as a hostile abdomen, sepsis or a porcelain aorta.[7,8]

CONCLUSION

The FCB in patients with disabling claudication caused by unilateral iliac artery disease is still a valuable alternative to aortofemoral grafting in those who are not suitable for endovascular repair or major abdominal surgery, or have poor general (age, CAD, COPD, etc.) or local (hostile abdomen, sepsis, porcelain aorta) conditions, presenting in recent series with good long-term patency and low complication rates.

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