Femorofemoral Bypass

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Indications

- Ischemia of the lower extremity
- Disabling claudication
- Ischemic rest pain
- Nonhealing ulcers
- Foot gangrene with unilateral stenotic/obstructive lesion of the iliac artery not amenable to endovascular procedures
- Occlusion of a limb of an aortobifemoral bypass that could not be opened by thrombectomy or thrombolysis

Essential Steps

1. Incision of the skin over both groins.
2. Dissection of the common femoral, superficial femoral, and profunda femoris arteries bilaterally.
3. Creation of a tunnel between both groin incisions.
4. Passing a PTFE graft (preferably reinforced with rings) in the tunnel.
5. Anticoagulate with heparin.
6. Clamping of the common, profunda, and superficial femoral arteries.
7. Arteriotomy in the donor common femoral artery made obliquely toward the profunda femoris artery.
8. Performance of the anastomosis in the donor femoral artery.
9. Back bleeding of the profunda and superficial femoral arteries bilaterally.
10. Repeat the same on the opposite limb.
11. Femoral endarterectomy and profundoplasty may be necessary.
12. Resume flow to the lower extremity.
13. Secure hemostasis.
14. Close the wound.

Note These Variations

- The femorofemoral bypass is usually constructed using a C configuration. In the presence of severe calcifications in the donor femoral artery, a lazy S configuration may be used. In this configuration, the proximal anastomosis is performed as proximal as possible after starting at the junction with the external iliac artery. Alternatively, a localized endarterectomy of the femoral artery may be necessary.
- In the presence of occlusive disease in the donor iliac vessel, an intraoperative angioplasty/stenting of the stenotic pathology can be combined with the femorofemoral bypass.

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Complications

- Infections
- Bleeding
- Hematoma
- Steal syndrome of the donor leg

Template Operative Dictation

Preoperative Diagnosis Ischemia of the *right/left* lower extremity

Procedure Femorofemoral bypass with reinforced PTFE graft

Postoperative Diagnosis Same

Indications This is a ___-year-old *male/female* who presents with ischemia of the *right/left* lower extremity. The patient was found to have occlusion of the *right/left* common iliac artery. The contralateral iliac artery and common femoral artery were normal without any evidence of stenosis.

Description of Procedure The patient was placed in a supine position. Time-out was performed using both preinduction and pre-incision safety checklist to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. The procedure was performed under *general endotracheal/spinal/epidural/local* anesthesia. Both lower extremities were prepped and draped in a standard surgical fashion.

A vertical incision was made over the *right/left* femoral artery. Fascia and lymphatic tissue were bisected. The *common femoral/superficial femoral/profunda femoris* arteries were dissected and isolated with Silastic vessel loops.

A tunnel was created subcutaneously between both groin incisions. The *PTFE/ring-enforced PTFE/Dacron* graft was passed in the tunnel.

The patient was given 5,000 U of heparin intravenously. Five minutes after heparin administration, the common femoral, profunda femoris, and superficial femoral arteries were clamped on the donor side using vascular clamps.

An arteriotomy was performed in the common femoral artery obliquely toward the profunda femoris artery using a #11 blade scalpel and extended using Potts scissors. The end of the graft was fashioned to fit the arteriotomy. An anastomosis was constructed between the end of the graft and the side of the femoral artery using 5-0 prolene in a continuous fashion. Before completing the anastomosis, the lumen was irrigated. An atraumatic vascular clamp was applied to the graft, and the profunda femoris and superficial femoral arteries were allowed to back-bleed. The common femoral artery was allowed to forward-bleed. The anastomosis was completed and blood was allowed to flow into the donor leg.

The recipient femoral artery was prepped in the same fashion as the donor side. An arteriotomy was made in the common femoral artery *and extended toward the profunda femoris artery.* Anastomosis was constructed between the end of the graft and the side of the common femoral artery in a similar fashion. Blood was allowed to back-bleed from the profunda femoris and superficial femoral arteries, and the graft was allowed to forward-bleed. The lumen was irrigated and the anastomosis was completed.

Blood flow in the superficial femoral and profunda femoris arteries was checked by both palpation and Doppler probe.

Hemostasis was secured in both groins.

Both groins were closed in three layers: the first layer with 3-0 Vicryl for closing the fascia, the second layer with 3-0 Vicryl for closing the subcutaneous tissue, and the skin with staples.

Pulse was checked in both donor and recipient legs postoperatively.

Dressing was applied to both groins. A debriefing checklist was completed to share information critical to postoperative care of the patient.

The patient tolerated the procedure well and was awakened, the lower extremities were noted for the presence of pulsations by Doppler/palpation, and the patient was taken to the postanesthesia care unit in stable condition.