



# AORTOILIAC OCCLUSION REQUIRING AORTOBIFEMORAL GRAFTING

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## ABSTRACT

Aortobifemoral bypass is surgery to connect the aortic artery to both femoral arteries in the groin in patients with severe occlusion of the iliac arteries. A synthetic graft is used to bridge the aorta to the femoral arteries. To bypass the blocked blood vessel, blood is redirected through a Y graft made of synthetic material (such as polytetrafluoroethylene [PTFE] or Dacron). Our case report includes 54 year male patient chronic smoker admitted with chief complaints of claudication pain in both lower limb. CT angiography suggestive of aortobiiliac occlusion so aortobifemoral grafting was done and patient got relieved of symptoms.

**KEYWORDS:** Aortobiiliac occlusion, PTFE graft, Aortobifemoral bypass, Claudication, Atherosclerosis.

## Introduction

Aortobifemoral bypass is a surgical procedure performed in patients with atherosclerotic disease of the infrarenal aorta and iliac vessels. Because aortic bifemoral bypass requires general anesthesia and is an extensive procedure, it is contraindicated in patients who are very old, frail, and unfit for surgery. For these patients, options such as extra-anatomic bypass grafts are available. Femorofemoral bypass and axillofemoral bypass are decent alternatives to aortic revascularization.

## Case Report

54 year male patient chronic smoker admitted with chief complaints of claudication pain in both lower limb. Doppler s/o no flow in bilateral femoral and distal arteries. CT angiography suggestive of infrarenal aortobiiliac occlusion [Fig 1] so aortobifemoral grafting was planned.

Patient smoking stopped for 4 weeks, and on the day of surgery, 2-4 units of packed red blood cells kept available. Combined general and epidural anesthesia was given. Ryles tube inserted. The patient was in the supine position, with the arms extended at the side.

Two small longitudinal incisions were made in the groin to expose the common femoral artery at its bifurcation.<sup>[1,2,3]</sup>

Midline abdominal incision was made that extends from the xiphoid to just below the umbilicus. The proximal abdominal aorta distal to renal arteries dissected and exposed for placement of a cooley clamp. Heparin, 100 units/kg, was given. The standard graft 14 × 7 mm expanded polytetrafluoroethylene (ePTFE) was taken and cut so that only about 3 cm of the trunk remains with the bifurcated segment [Fig 2].

The cooley clamp was applied on abdominal aorta just below the renal vessels. To prevent postoperative renal dysfunction, the proximal anastomosis was completed in less than 30 minutes with a 5-0 polypropylene suture starting in the posterior wall and continuing to the front. The graft limbs then tunnelled into the groin area. Place clamps on the proximal common femoral artery, superficial femoral artery, and profundafemoris. Distal anastomosis between distal graft limbs and bilateral common femoral artery was done with a 6-0 polypropylene suture continuous manner.

Gently remove the distal followed by proximal clamp. Complete hemostasis obtained and the pulses felt in both groins. Carefully the bowel returned and the peritoneal layer closed. Abdominal wall closed with a 1-0 monofilament suture followed by groin closure.

The patient was extubated in the operating room. Administered antibiotics for 3 doses after the procedure. Ambulation was started on postoperative day 2, but a normal diet resumed on day 3 after having active bowel sounds and discharged the patient on seventh postoperative day.

## Discussion

The aortic bifemoral bypass is considered to be the most durable of all bypasses for the peripheral system. It is an ideal procedure for patients with aortoiliac disease, aortic aneurysms, or aortic atherosclerosis.

Conventional angiography, the previous standard, is fast being replaced by computed tomography (CT) angiography and magnetic resonance angiography (MRA).

## Indications<sup>[4]</sup>

- Atherosclerotic occlusion of the abdominal aorta and iliac arteries
- Presence of severe claudication symptoms
- Nonhealing ulcers in the extremities
- Aortic aneurysms
- Critical limb ischemia

Besides open surgery, there are several options for treating disease in the aorta and iliac vessels. One is angioplasty, with or without stenting. Despite the plethora of reports on laparoscopic vascular procedures, the results are still not as good as those obtained with open techniques. Moreover, complications of laparoscopic procedures continue to occur, and long-term data are still lacking.<sup>[5]</sup>

## Complications

- Myocardial infarction [MI]
- Respiratory complication
- Renal dysfunction
- Ureteral obstruction
- Sigmoid colon ischemia
- Aortoenteric fistula

The prognosis is fair and pain is relieved in the majority of cases; however, limb amputation is still a possibility for some patients with disease progression. The most common causes of death after surgery are perioperative myocardial infarction (MI) and stroke.

## Conclusion

The aortobifemoral bypass is considered when the condition must have progressed to a case where the blocked blood vessels must cause some significant symptoms as well as some threat to the limbs. The aortobifemoral bypass graft procedure is considered to be rather suc-

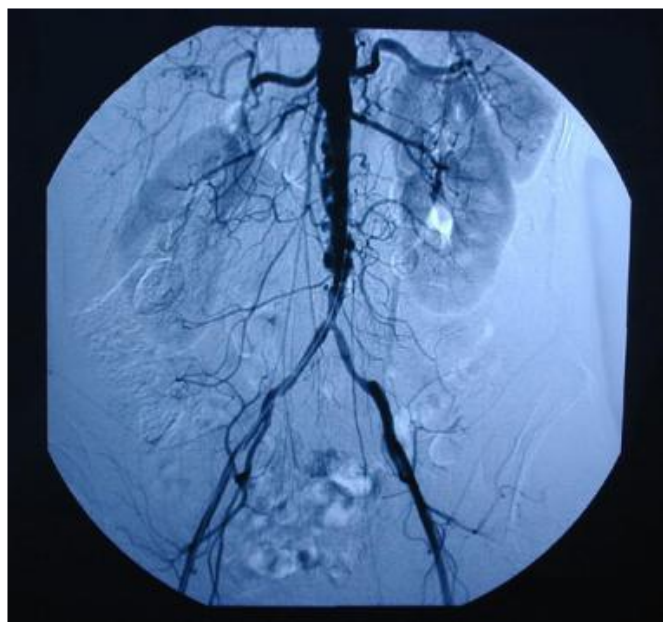
cessful because in about 90% of all its cases, the graft stays open for a period of about 5 years.

#### CONFLICT OF INTEREST-NO POTENTIAL CONFLICT OF INTEREST

**Funding:** no funding was required

**Consent:** Patient consent was taken for case report.

#### Figure Legends



**Fig.1-Atherosclerotic aortic occlusive disease limited to infrarenal aorta and common iliac arteries. CT scan of abdomen showing calcified abdominal aorta.**



**Fig.2-Y portion of graft,the prosthetic graft was cut so that only about 3 cm of the trunk remains with the bifurcated segment**

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