

# Isolated Common Iliac Artery Aneurysm: A Rare Entity

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## ABSTRACT

Isolated aneurysms in iliac artery are not common. A 65-year-old male patient presented with complaints of pain abdomen, abdominal distension and history of hypertension, Clinical examination revealed pulsatile mass in the right iliac fossa extending upto paraumbilical region with palpable pulsations in all the limbs. Computed tomographic (CT) angiogram was done and it revealed large aneurysm of right common iliac artery. CT chest and abdomen did not reveal aneurysm in thoracic and abdominal aorta. As the size of aneurysm was large and there was risk of rupture, surgical intervention in the form of aneurysmorrhaphy was done. Open surgery was done as the anatomy was not favourable for endovascular intervention. Aneurysmorrhaphy was done using 6mm ringed Poly Tetra Fluoro Ethylene graft. Patient recovered well and was discharged after 10 days.

**Keywords:** Aneurysmorrhaphy, Iliac artery, Prosthetic graft

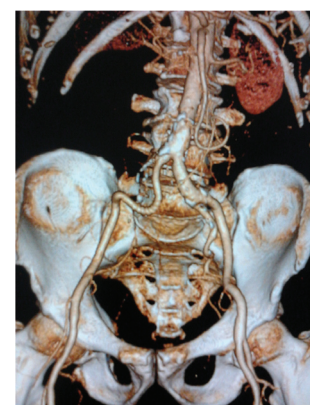
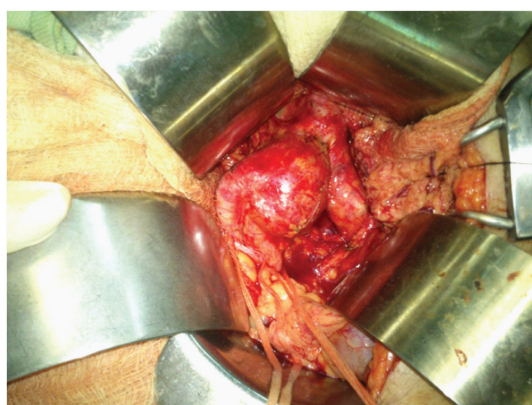
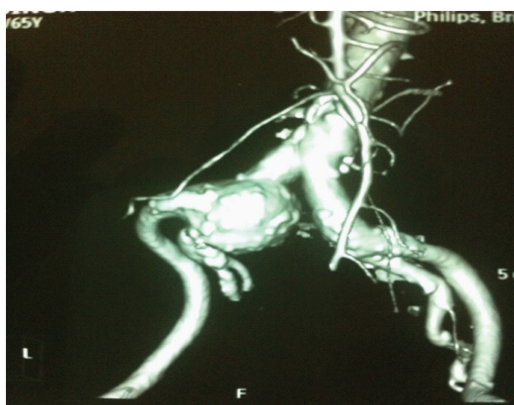
## CASE REPORT

We present a rare case of isolated iliac artery aneurysm in a 65-year-old male. The patient had complaints of pain abdomen and abdominal distension alongwith history of hypertension and smoking. Clinical examination revealed pulsatile mass in the right iliac fossa extending upto paraumbilical region with palpable pulsations in all the limbs. CT angiogram [Table/Fig-1] was done and it revealed large aneurysm of right common iliac artery just distal to aortic bifurcation and extending upto bifurcation in the common iliac artery. CT chest and abdomen did not reveal aneurysm in thoracic and abdominal aorta. As the size of aneurysm was large (>5cm) and there was risk of rupture, surgical intervention in the form of aneurysmorrhaphy was planned. Endovascular intervention was not considered as the anatomy was not favorable because of tortuosity of iliac arteries, angulations and calcification. Blood pressure of the patient was preoperatively stabilized with beta blockers and angiotensin converting enzyme inhibitors. The patient was operated under general anaesthesia supplemented with epidural analgesia, arterial and central venous pressure monitoring was also done intra-operatively. Intraoperatively blood pressure was controlled with the use of nitroglycerine infusion and inhalational anaesthetics. Midline laprotomy was performed and aneurysm was approached transperitoneally [Table/Fig-2]. Dissection around the aneurysm was done carefully and ureter was found adherent to it, ureter was separated gently from the wall of the aneurysm and kept away from the wall of the aneurysm to avoid inadvertent injury. Proximal control in aorta and distal control of iliac arteries was taken after heparinization (1mg/kg). After clamping the abdominal aorta and iliac arteries the aneurysm was opened

longitudinally, the wall of the aneurysm was thin and devoid of any atheroma or clots. Aneurysmorrhaphy was done using 6mm ringed Poly Tetra Fluoro Ethylene (PTFE) graft. Proximal anastomosis (end to end) was performed first to segment of iliac artery proximal to the aneurysm and distal anastomosis (end to end) was done to the right external iliac artery after transecting the artery from the aneurysm. The right internal iliac artery had pulsatile backflow and was ligated. Aneurysm wall could only be partially covered over the graft and omentum was mobilized to cover the anastomotic site and graft. Standard laprotomy closure was done after hemostasis. Patient required re-exploration on the same day for bleeding from the proximal anastomotic site, which was controlled with a figure of eight polypropylene suture 4-0. The patient recovered well thereafter and was discharged after 10days. Postoperative angiogram [Table/Fig-3] done after one month revealed patent graft without any evidence of contrast leakage. The patient came for follow-up 6 month after the procedure and was doing well and had palpable pulsations in both the lower limbs.

## DISCUSSION

Isolated aneurysms in Iliac arteries are uncommon [1]. Brunkwell et al., [2] have reported 0.03% incidence of isolated iliac artery aneurysms in their study. Isolated iliac artery aneurysms are rare and most of the literature available on isolated iliac artery aneurysms is from western countries and its incidence from India is not known. It has been recommended that iliac artery aneurysms larger than 3.5 cm and all symptomatic aneurysms should be considered for intervention [3].



[Table/Fig-1]: CT angiogram showing isolated aneurysm of right common iliac artery, [Table/Fig-2]: Intraoperative photograph showing aneurysm of right common iliac artery [Table/Fig-3]: Postoperative CT angiogram showing patent graft

Although open surgery for repair of iliac artery aneurysm is associated with low morbidity and mortality [4], endovascular stenting is more commonly done now a days. Comparative studies between open and endovascular repair for iliac artery aneurysms do not show significant difference in mortality rates [5,6]. However, morbidity is less with endovascular repairs [7,8]. This case was not suitable for endovascular intervention because of the following reasons 1) there was excessive angulations and tortuosity at the site of aneurysm, 2) calcification was present, 3) bifurcation graft would have been required with proximal landing zone in abdominal aorta, as proximal landing zone was inadequate in the iliac artery, 4) high risk of endoleaks because of angulations and calcification, 5) significant cost difference in this case from open surgery where only a small segment of 6mm ringed Poly Tetra Fluoro Ethylene graft (PTFE) was used to repair the artery. Endovascular procedures do have advantages but certain areas remain a cause of concern particularly the aggravation of renal dysfunction in patients with borderline or deranged renal function with the use of nephrotoxic dye injected during the procedure, risk of endoleaks [9], stent thrombosis [9] or stent migration and also the duration of radiation exposure.

Although in this case, we have used 6mm ringed PTFE graft for repair of the common iliac artery, other more cost effective options which we think that can be done with open surgery include use of ipsilateral internal iliac artery if the contra lateral iliac artery is patent or proximal great saphenous vein if of adequate size. The use of these autologous grafts will also reduce chances of infection, decrease cost and improve the long term results with minimal need of anticoagulation and reduction in the cost of anticoagulation and related complications. In developing countries where cost of the procedure is an important factor, open surgery in such cases is cost effective by using straight tube graft or autologous graft (if feasible) without the need of costly branched stent grafts [10,11].

## CONCLUSION

Open surgery still has a definitive role in the management of aneurysms not suitable for repair by endovascular techniques. Advances in surgical and anesthetic techniques have lowered the mortality and morbidity rates even in elderly patients. In developing countries the cost of open repair of aneurysms is less than that of endovascular interventions at present and is an important factor determining the patient's choice of treatment.

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