

Open Surgical Management of Abdominal Aortic Aneurysm at a Community Based University Hospital in Nepal

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INTRODUCTION

Aortic aneurysm is defined as abnormal dilatation of aorta with more than 50% increase in diameter or more than 30 mm on imaging most commonly affecting infrarenal region.¹ Abdominal aortic aneurysm is one of its variant which is characterized by pain, pulsatile mass in abdomen, sometimes shock due to rupture and rarely can have features of thrombosis.^{2,3,4} Smoking is the most important modifiable risk factor followed by coronary artery disease, hypertension.⁵ In regards to non modifiable risk factors, male sex and age older than 65 are important risk factors.^{2,3}

CASE REPORT

A 72 years male from Kapan, Kathmandu presented to the surgical out patient department of Dhulikhel Hospital, Kathmandu University Hospital, Dhulikhel with

ABSTRACT

Aortic aneurysms are abnormal dilatation of aorta. The risk factors include male sex, age > 65, smoking, coronary artery disease and hypertension. Here we report a case of infra-renal abdominal aortic aneurysm (AAA) of diameter 6 cm. The patient successfully underwent aorto-biiliac bypass surgery using Dacron Y graft. During abdominal aortic aneurysm surgery anesthetic challenge is also of paramount importance and should be considered.

KEY WORDS

Abdominal aortic aneurysm, Aorto-biiliac bypass, Dacron graft, Vascular surgery

history of pain in upper central abdomen for one month which increased on exhaustion. On examination pulsatile non tender mass of size 7x5 cm was palpated in central abdomen. He is also known case of hypertension and is controlled under medication. The abdominal sonogram showed abdominal aortic aneurysm of size 5x5 cm. Contrast Enhanced CT angiogram confirmed the finding along with extent of 7 cm distal from right renal artery to bilateral common iliac artery. In view of size of aneurysm and symptomatic status bypass of the aneurysmal segment was planned. For surgical correction abdominal aorta proximal to the aneurysm was planned to be bypassed to bilateral external iliac arteries using Dacron Y graft. Details are shown in figure 1, 2 and 3.

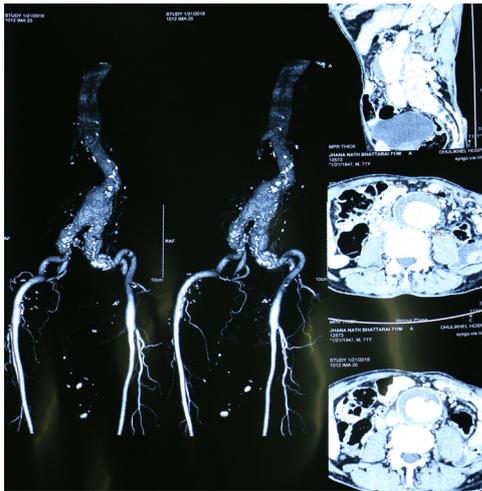


Figure 1. 3D reconstruction of the lesion.

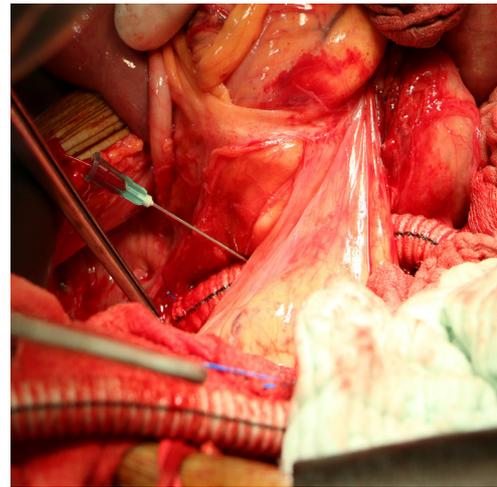


Figure 2. Distal anastomosis of Y graft to right external iliac artery



Figure 3. Proximal end of Y graft during reconstruction

Intraoperative findings were similar to the CT findings. After placing clamps in proximal and distal part aneurysmal sac was opened to find atheroma. Proximal end of Y graft was connected to abdominal aorta by parachuting technique (end to end anastomosis) using 5"0" prolene. Following de-airing of distal limbs of Y graft, the ends were tunneled below mesentery to be anastomosed to bilateral external iliac artery. Right limb of graft was further anastomosed to right internal iliac artery using short tubular graft. Post procedure good pulse was appreciated in bilateral femoral arteries. Patient recovered uneventfully with two days of ICU stay and seven days of hospital stay. In follow up of a year the bypass is patent with adequate flow and no evidence of distal ischemia.

DISCUSSION

Guidelines from American College of Cardiology/American Heart Association 2005 has given the recommendation for surgical repair to be done in case the AAAs are 5.5 cm in diameter or greater for asymptomatic patients while increase in diameter by 0.5 cm or greater in six months

is indicative of surgery in cases of symptomatic patients.⁶ AAAs are classified based on anatomic site and extent into Suprarenal, Pararenal, Juxtarenal and Infraarenal types.⁷

During surgery for abdominal aortic aneurysm, anesthetic challenge is also of paramount importance owing to the risks during aortic clamping and de-clamping. Clamp application causes sudden increase in afterload and after clamp release there is sudden decrease of peripheral vascular resistance by 70-80% causing hypotension.⁸ Similarly ischemia-reperfusion cascade also need to be taken into consideration during surgery.⁸

In recent time development in minimal invasive endovascular treatment such as Endovascular Aortic Repair which cause less morbidity and mortality but such modalities are costly and technologically more demanding.⁹

Surgery for AAA is complex, skill and resource demanding procedure hence successful management of such case at tertiary level hospital of periphery shows improvement in vascular surgery status of Nepal. Timely consultation and appropriate treatment with multi-disciplinary approach is essential for AAA management.

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