Case Report

Abdominal Aortic Aneurysm

Mahbub Ahsan[1], Lutfar Rahman[2], ASM Shariful Islam[3].

Abstract

Abdominal aortic aneurysm is usually found incidentally. Patient may have vague symptoms of backache, anorexia, dyspepsia. Our patient presented with abdominal pain, dyspepsia, backache. CT scan revealed saccular aneurysm from infrarenal aorta. We decided for laparotomy. A long upper midline incision extending 2.5 cm below umbilicus was made. Gut was mobilized to right side. Inferior mesenteric artery (IMA), the right and left common iliac was taken control. A straight clamp was applied proximal to aneurysm, sac was opened, clot removed. The neck was found and trimmed up to healthy margin. The rent was repaired by a piece of vascular graft. The overlying sac was closed after keeping a drain. Her post operative period was uneventful. She came for follow up with no complain.

Key words: *Abdominal Aneurysm, Patch Closure.*

Date of received: *18.10.2020*

Date of acceptance: *25.02.2021*

KYAMC Journal. 2021;12(1): 53-55.

DOI: https://doi.org/10.3329/kyamcj.v12i1.53370

Introduction

Abdominal aortic aneurysm implies a local dilatation of the aorta involving minimum 50% increase in diameter.[1] Around two thirds of abdominal aortic aneurysm (AAA) are incidental findings during the investigation of backache, hip pain, or urinary complaints. Approximately 20,00,000 new AAA cases are diagnosed each year and 40,000 surgical repairs are performed. Thirty percent of AAA cases will rupture leading to an 80% mortality rate and 9,000 US deaths annually.[2] The majority of AAA began below the renal arteries and may extend to involve the bifurcation and common iliac arteries.[3]

Case Report

A female patient of 60 years admitted in Khwaja Yunus Ali Medical College and Hospital (KYAMCH) with the complaints of chronic abdominal pain, dyspepsia, backache, for 6 months. On examination, her pulse was 84/min, BP: 140/60. She was hypertensive, non DM. CT scan of abdomen revealed diffuse atherosclerotic changes involving abdominal aorta with formation of partially thrombosed aneurysm from infrarenal portion of abdominal aorta with small saccule formation 36×33 mm. Infrarenal aneurismal part at L2 level is 40 mm, and at L3 level about 29 mm. Inferior mesenteric artery (IMA) arising from aneurismal part, traversing through thrombosed lumen with significant narrowing of IMA (Figure 1, 2 and 3).

1 Assistant Professor, Department Of Cardiovascular And Thoracic Surgery, Khwaja Yunus Ali Medical College And Hospital, Enayetpur, Sirajganj, Bangladesh.

2. Professor And HOD Of Cardiovascular And Thoracic Surgery, Khwaja Yunus Ali Medical College And Hospital, Enayetpur, Sirajganj, Bangladesh.

3. Assistant Professor, Department Of Cardiovascular And Thoracic Surgery, Khwaja Yunus Ali Medical College And Hospital, Enayetpur, Sirajganj, Bangladesh.

Correspondence: Dr.Mahbub Ahsan, Assistant Professor, Department of Cardiovascular and Thoracic surgery, Khwaja Yunus Ali Medical College and Hospital, Enayetpur, Sirajganj, Bangladesh. E mail: mahbub.ahsan8@gmail.com . Phone:+88-01711174424.

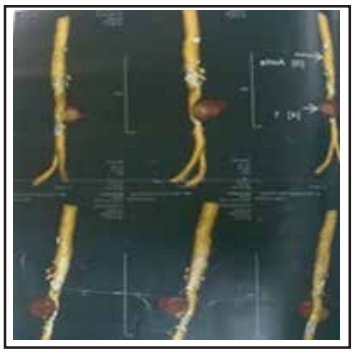

Figure 1: CT angio of abdominal aneurysm.

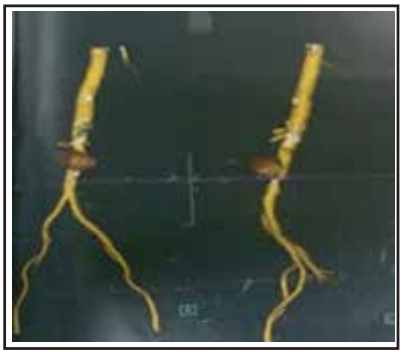

Figure 2: CT angio of aneurysm

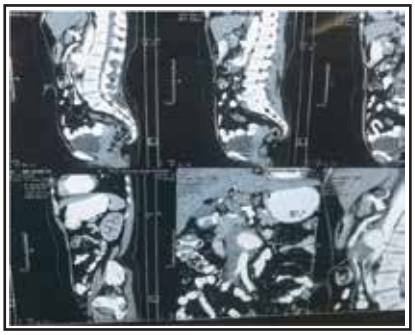

Figure 3: CT scan of abdominal aneurysm

Figure 4: Per operative picture

We decided for laparotomy. So, upper abdominal incision extending up to 2.5 cm below umbilicus was made. There was an aneurysm about 10 cm×8 cm just below infrarenal aorta. The rest of the aorta including bifurcation appeared normal. The gut was mobilized to the right side, the duodenum was cockerized, and the aneurismal sac was dissected carefully including inferior mesenteric artery and right and left common iliac arteries (Figure 4). The proximal portion of aneurismal sac was taken control by umbilical tape as well as other branches. The proximal aorta and its branches were occluded by straight clamp. The aneurismal sac was opened, clot removed, the tear was trimmed up to healthy margin, and the rent was repaired by a patch of vascular tube graft (Figure 5, 6 and 7). The overlying sac was closed after putting a drain. The patient was shifted to ICU and later discharged in stable condition. Post operative follow up was encouraging with improved general condition.

Figure 6: Per operative picture

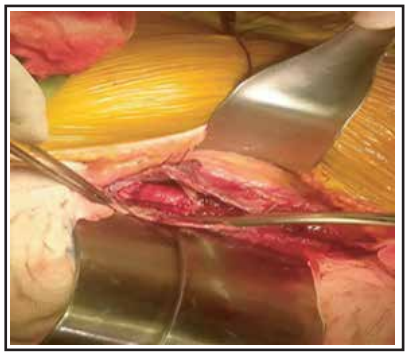

Figure 7: Per Operative Picture After Patch Closure

Discussion

In 1888, Rudolph Matas, developed the surgical technique of aneurysmorrhaphy.[4] In 1948, CE Rea wrapped cellophane around the neck to introduce a fibrotic reaction.[5] The first successful replacement of an aneurysm with freeze dried homograft was done by Charles Dubost in 1948.[6] Later Debakey and colleagues introduced Dacron patch graft for vascular grafting.

Risk factors for abdominal aneurysm include smoking, Diabetes, Hyper cholesterolaemia, family history of AAA, male predominance, age (male) >70 yrs. It is five times more common in men than woman and 3.5 times more common in white than of African men.[7]

Anatomically it may be saccular, fusiform, or dissecting. These are true aneurysm. There is another term that is false or pseudoaneurysm. They do not involve all layers of the arterial wall. Some divide AAA as suprarenal and infrarenal according to position of renal arteries.

Most of the patients of AAA are asymptomatic. But when it expands and compress surrounding structures, it may cause pain, backache, vomiting, anorexia, loss of weight. Complications of AAA are rupture, distal embolization and disseminated intravascular coagulation. Ruptured abdominal aortic aneurysm requires immediate surgery or endovascular stenting with high risk of mortality.

Treatment modalities of AAA include medical management, traditional open surgical approach and endovascular aneurysm repair (EVAR). Elective surgical repair is recommended when aneurysm >5 cm in women and > 5.5cm in men, increase of aneurysm size by > 0.5 cm within 6 months, chronic abdominal pain, thromboembolic complications, iliac or femoral artery aneurysm that causes lower limb ischemia.

Surgical repair consists of replacing the abnormal portion with synthetic tube graft. It may be by traditional retroperitoneal approach or through transperitoneal approach. Modern surgical technique is EVAR in which case vascular stent are introduced through femoral artery and which excludes the aneurysm from systemic flow and the aneurismal part eventually thrombosed in course of time. It is relatively safe with favorable outcome. There is another technique called Hybrid technique in which case both open surgical debranching and revascularization followed by placement of endovascular stent for exclusion of the aneurysm.

Conclusion

Abdominal aortic aneurysm is a surgical emergency when it ruptures. Prompt diagnosis by ultrasonography and CT scan is essential for planning early management. Because chance of survival after abdominal aneurysm rupture is 50% in case of open repair and 20-30% in case of EVAR.

Acknowledgement

We are grateful to all the staff of OT and ICU for their support and encouragement.

References

1. Ernst CB. Abdominal aortic aneurysm. New England Journal of Medicine. 1993; 328(16), 1167-1172.

2. Lederle FA, Johnson GR, Wilson SE. Prevalence and associations of abdominal aortic aneurysms detected through screening. Annals of Internal medicine. 1997; 126:441-449.

3. Rothrock J. Alexander's care of the patient in surgery. 12th ed. St Louis, MO:Mosby; 2003.

4. Rutherford RB. Vascular surgery. 5th ed. Philadelphia, PA; WB Saunders; 2000.

5. Rea CE. The surgical treatment of aneurysm of abdominal aorta. Minnesota Medicine. 1948; 31:153.

6. Dubost C, Allary M, Deconomos N. Resection of an aneurysm of abdominal aorta; Re establishment of the continuity by a preserved human arterial graft with result after 5 months. Archives of Surgery. 1952; 64:405.

7. La Marte WW, Scott TE. Racial differences in the incidence of femoral bypass and abdominal aortic aneurysmectomy in Massachusetts: Relationship of cardiovascular risk factors, Journal of vascular surgery. 1995; 21:422.