

Case Report

Angle-closure glaucoma and aortic aneurysm - a case report

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ABSTRACT

Acute angle closure glaucoma associated with an aortic aneurysm is common in familial cases. But it is uncommon without a positive family history. This article tells about a case of an 80-year-old female, who presented with complaints of severe eye pain, was diagnosed with angle closure glaucoma, and had an incidental finding of multiple aortic aneurysms. The patient was treated conservatively with medical management, and surgery was deferred due to age factor. It is important to know about this association to prevent complications and start prompt treatment.

Keywords: Glaucoma, Aneurysms, Laser surgery

INTRODUCTION

Acute angle-closure glaucoma occurs when the angle between the iris and the cornea becomes blocked, preventing the normal flow of fluid out of the eye. Further, it increases intraocular pressure, endangering the optic nerve and leading to vision loss. Severe eye pain, hazy vision, headaches, nausea, and vomiting are all signs of acute angle-closure glaucoma. This condition is a medical emergency which needs immediate treatment to prevent permanent vision loss. Treatment typically includes using medications to reduce intraocular pressure, such as eye drops and oral medications, as well as laser therapy or surgery to open the blocked angle.¹ An aneurysm is a bulging, weakened area in the wall of a blood vessel. It can occur in any blood vessel in the body, but the most common location is in the aorta, the main vessel that carries blood from the heart to the rest of the body. Various factors like high blood pressure (BP), atherosclerosis and genetics are responsible for aneurysms. It can also be caused by infection or any injury. If an aneurysm ruptures, it can cause severe bleeding and potentially lead to death. Aneurysm treatment options include surgery, endovascular procedures, and medication to control risk factors.^{2,3}

CASE REPORT

An 80-year-old female complained of severe bilateral eye pain. An ophthalmic examination was performed, and a diagnosis of angle-closure glaucoma was made. The planned treatment for this patient was a peripheral iridotomy with a YAG laser. A peripheral iridotomy is a laser procedure that creates a small hole in the iris to allow the fluid in the eye to flow more freely and reduce intraocular pressure. The YAG laser is a safe and effective procedure that can be performed in the office or on an outpatient basis. The procedure typically takes only a few minutes, and the patient can return to normal activities soon after. The patient has comorbidities of chronic obstructive pulmonary disease (COPD) and ischemic heart disease (IHD), which are not under regular treatment, and no other known comorbidities. On examination, she appears to be malnourished and poorly built. Her vital signs were stable upon admission. The examination of her lungs revealed bilateral basal crepitations, a sign of fluid in the lungs and usually a sign of pneumonia or an exacerbation of COPD. This may indicate that her COPD is not well controlled. Given her history of IHD, monitoring her cardiac function closely is important.

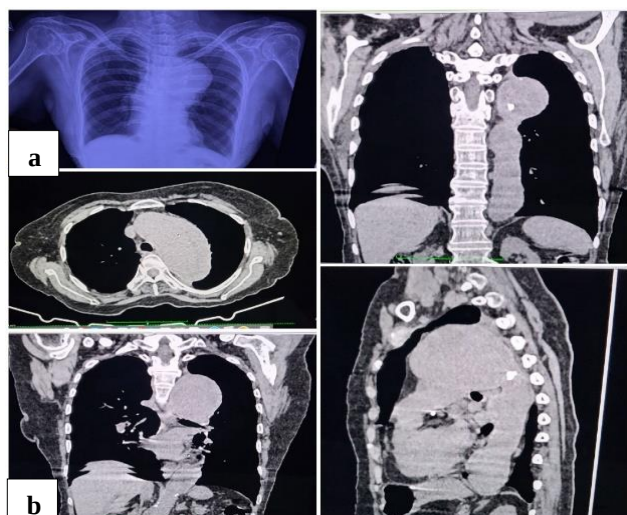


Figure 1: (a) Chest X-ray - showing dilatation of the aorta, and (b) CT- chest- showing multiple aneurysms in the aorta.

Clinical course

The patient underwent a complete blood count (CBC), electrocardiography (ECG), and renal function test (RFT), which revealed a high urea level (50 mg/dl) and low sodium level (131.8 mg/ml), but a normal ECG. A chest X-ray was taken as part of a routine examination for iridotomy and revealed an accidental finding of a dilated aorta. This was further confirmed by a computed tomography (CT) chest, which identified multiple aneurysms in the aorta, with the largest being located in the arch of the aorta. This led to a diagnosis of an aortic aneurysm. She received IV fluids of normal saline to treat the patient's hyponatremia. The patient was also treated with bronchodilators for COPD, antihistamines, statins, and multivitamin supplements. These medications addressed the patient's other health conditions and improved her overall well-being. The patient had an echo was done, which showed no structural or regional abnormalities. Due to her old age and fragile nature, the patient was started on antiplatelet, statin, and anti-hypertensive drugs as a treatment for her aortic aneurysms instead of undergoing routine surgical treatment. This approach was chosen to minimise the risk of complications and better suit the patient's overall health status.

DISCUSSION

Male gender and increasing age are well-established risk factors for abdominal aortic aneurysms (AAA). Men are more likely to develop AAA than women, and the risk increases with age. Other known risk factors for AAA include smoking, hypertension, high cholesterol, and a family history of AAA. According to a study, a positive family history of AAA is present in 1% to 5% of patients with the condition. This suggests a potential genetic component in the development of AAA.⁴ A female patient with no positive family history acquiring an aortic

aneurysm is relatively rare, as men are more likely to develop AAA than women. However, it is still possible for a female patient to develop an AAA, even without a family history. The high age of the patient (80) is a strong risk factor for AAA. As we age, the walls of our blood vessels become weaker and more susceptible to damage, which can increase the risk of an aneurysm forming.⁵ A female patient with no positive family history acquiring an aortic aneurysm is not very common. A positive family history of AAA is a known risk factor for the condition, so patients presenting with an aortic aneurysm should have a detailed family history and cardiac workup in their family members. This can help identify any potential genetic basis for the patient's AAA and may also help identify other family members at risk for developing an AAA. Some studies have suggested that there may be an association between aortic aneurysms and other conditions, such as glaucoma and deafness, in patients with a strong familial basis.⁶ The presence of glaucoma in a patient with an aortic aneurysm and no genetic basis is relatively uncommon. While some studies have suggested a possible association between AAA and glaucoma, it is not well-established or confirmed, and more research is needed to understand the relationship fully.^{7,8}

CONCLUSION

Old age, ischemic heart disease, and hypertension are all risk factors for abdominal aortic aneurysms (AAA). Other risk factors include smoking, male gender, and a family history of AAA. The mainstay of treatment for an aortic aneurysm is a surgical intervention to remove the dilated and weak parts of the blood vessel. Still, it is associated with a risk of morbidity and mortality and is expensive. In addition, it is not a feasible modality for frail elderly patients, who make up the majority of the cases of aneurysms. Regular health check-ups can prevent an aortic aneurysm, especially blood pressure monitoring and regular cardiac workup. An earlier diagnosis of an aortic aneurysm is vital to prevent the serious complication of aortic dissection.

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