Case report

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A Case of Post Operative Death: Natural or Homicide?

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Abstract

An abdominal aortic aneurysm (AAA) is a pathologic condition characterized by the progressive dilatation of the abdominal aorta, which can lead to rupture. Risk factors for AAA include hypertension, coronary artery disease, tobacco use, male sex, family history, age over 65, and peripheral artery disease. AAA rupture is a catastrophic emergency with high mortality rates if not promptly treated. Mortality estimates for ruptured AAAs range from 75% to 90%. AAAs are commonly found in men aged 65-85 years and are usually asymptomatic until rupture occurs. The prevalence of AAA has been increasing, especially in older individuals, smokers, and those with hypertension. Surgical repair is recommended for large or symptomatic AAAs, while surveillance is appropriate for smaller aneurysms. AAA is a major public health issue and is considered a "silent killer". The history of AAA management dates to the 19th century, with attempts at surgical intervention.

Keywords: Abdominal aortic aneurysm; Culpable homicide; Medico legal issue.

Introduction

Abdominal aortic aneurysm (AAA) is a condition characterized by progressive abdominal aortic dilatation. Most of them are asymptomatic until the rupture occurs but some are detected incidentally. Risk factors for AAA include hypertension, coronary artery disease, tobacco use, male sex, family history, age over 65, and peripheral artery disease.[1]

Abdominal aortic aneurysm (AAA) has forensic importance due to its potential for rupture, which can lead to a catastrophic emergency with high morbidity and mortality rates. AAA is often asymptomatic until rupture occurs, making it a primary presentation in many cases.[1] Apart from these natural causes rupture or aggravation of AAA can arise legal issues. The mortality rate for untreated ruptured AAA can approach 100%. Overall, understanding the forensic importance of AAA lies in recognizing its potential for rupture and the need for timely intervention to prevent adverse outcomes.[2]

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Case Report

A female aged 44 years presented to hospital with severe pain abdomen following alleged history of assault by an unknown person at her residence sustaining blunt trauma to the chest and abdomen on 30/10/2022 for which she was later referred to SRMC & RI for further management.

Past history

Patient was diagnosed with abdominal aortic aneurysm and hypertension 10 years back and advised for conservative management however she was not under regular medication and the details of medical records were not available. She also had an episode of stroke with left hemiplegia 10 years before.

6 months back she started getting on and off abdominal pain which was dull, non-radiating and associated with vomiting.

After receiving trauma to chest and abdomen she came to hospital on 28/11/2022 on her own as her pain got aggravated. She was advised for CT angiogram and it revealed 2 aneurysms, one saccular aneurysm at upper polar segment of left renal artery measuring 16cmx 10.4 cmx 9.4cm and another at origin of superior mesenteric artery of size 9cmx5.5cmx6.5cm. Both the aneurysms showed features of peripheral wall calcification and partial thrombosis associated with moderate short segment luminal narrowing. There was no evidence of active leak or signs of immediate rupture. These features were in favor of possible association of connective tissue disorder resulting in Superior mesenteric artery and left renal artery aneurysms.

Procedure done

The patient was planned and also underwent left nephrectomy with aortic aneurysm repair with superior mesenteric artery reimplantation with right renal artery RSV bypass to abdominal aorta under general anaesthesia.

Postoperative course

She was intubated and shifted to ICU for further management. Her Arterial Blood Gas (ABG) showed severe acidosis and she was hypotensive, and she was started on triple inotropic support and she had a cardiac arrest on the same day and she was declared dead with given cause of death as severe metabolic acidosis, disseminated intravascular coagulation and hypotension as per hospital case records.

Autopsy

As the case was registered as MLC less than 174 CRPC, the death was again brought for medico legal autopsy, for which requisition was given an autopsy was conducted.

External examination of deceased shows pale face, palms, and fingers with distention of abdomen.

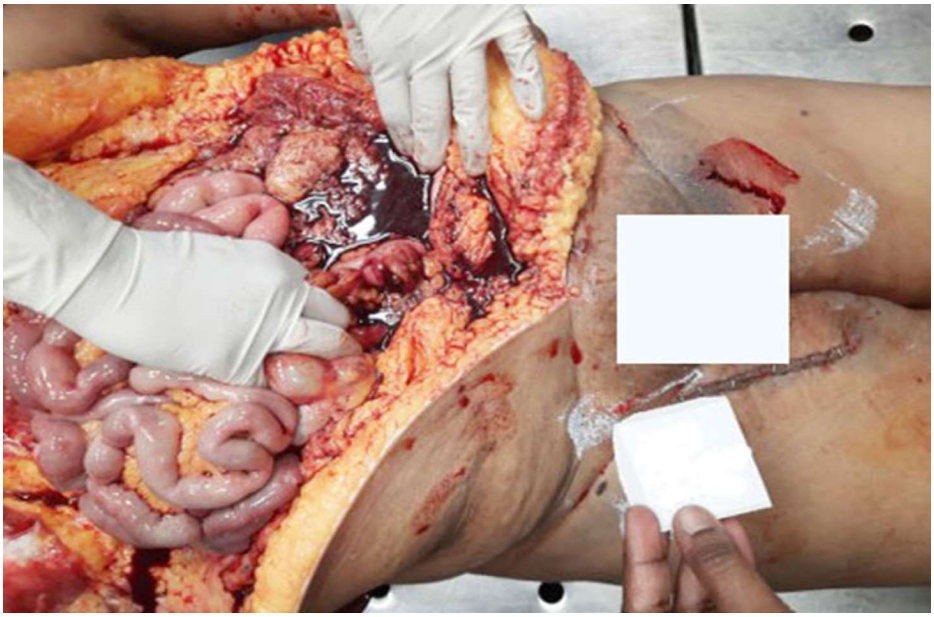

Fig. 1: Shows abdominal cavity containing blood

A surgically stapled wound measuring 36 cms bearing 56 was staples present over the center of the abdomen extending from xiphisternum to pubic symphysis. Another surgically stapled wound of length measuring 13 cms bearing 15 staples was present over the anterior aspect of upper 1/3rd right thigh. On internal examination, both lungs were pale, Brain was edematous. The stomach contained 15 ml of brown colored fluid and liver appeared pale. The left kidney was surgically harvested, and the right kidney appeared pale. Upon opening the abdominal cavity 1.5 liters of blood-tinged fluid was seen (Fig. 1 to 2). There was evidence of surgical procedure done as mentioned earlier in the abdomen.

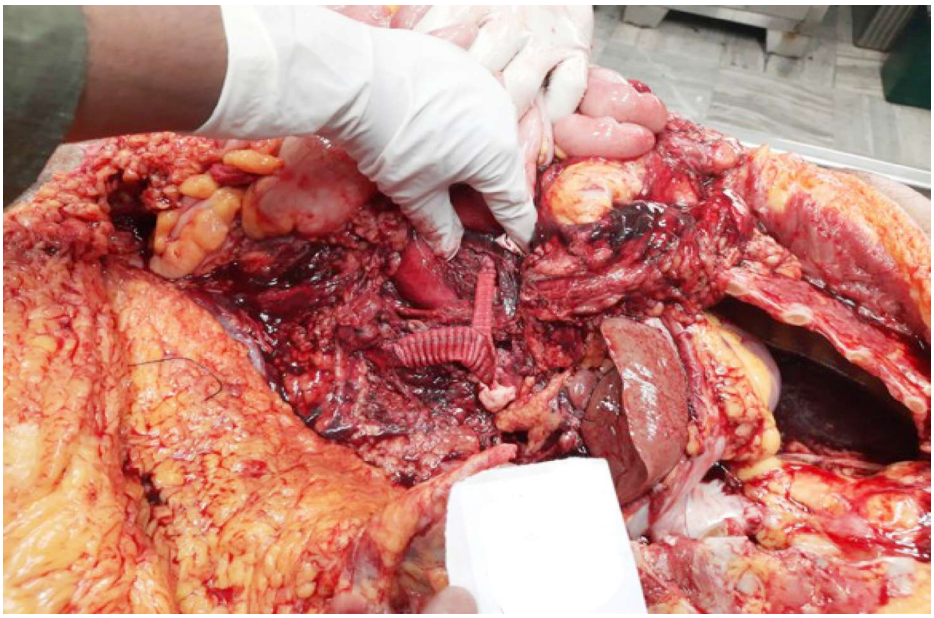

Fig. 2: Shows the superior mesenteric artery re-implantation graft

Discussion

As it appears from the case many legal questions may arise as below:

1) Whether the progression and consequence of aneurysms was a natural progression of disease process?
2) Could blunt trauma on the abdomen aggravate or fasten the natural progress of the underlying disease or there was an imminent threat to life because of trauma?
3) Does the liability of consequence of the disease largely contribute to the negligence by the patient in the form of irregular follow up and medication?
4) Whether the surgical procedure adopted in this case was as per the given standards although the outcome of the surgery didn't meet the expectations?

Culpable homicide not amounting to murder is an important legal concept in India it is defined under the section 299 of Indian Penal Code. Which refers to the act of causing death of a person by doing an act with intention of causing death or with the intention of causing bodily injury as is likely to cause death. However, the act does not amount to murder as defined under section 300 of IPC. One of the key distinctions between murder and culpable homicide not amounting to murder lies in the intention and knowledge of the offender. In this case the intention might be to cause bodily harm or injury without the specific intent to kill. In this case it may be argued that the death should come under section 299 IPC but the progression and events gave rise to further questions towards the quantum of culpability of the assailant. The conditions prior to the incidence indicate that the disease would have progressed to a fatal outcome without the trauma. There is also gross negligence by the patient towards her own health also. All this observation should be brought to the floor of the court during trial so that the court can arrive at a logical conclusion while deciding the culpability of the accused of the crime in the said case. This is an example where autopsy surgeon has to play a bigger role to assist the judiciary in delivery of justice.

Few of the notable case are:

5. The state of Maharashtra vs Pradeep 1994 where the Supreme Court held that the accused's act of driving a vehicle in a rash negligent manner resulting in death of a pedestrian, constituted culpable homicide not amounting murder. The court empathized the reckless conduct of the accused, which showed a disregard for human life but lacked the specific intent to cause death.[5]
6. Reg vs Govinda on (1876) this case involved a boatman who, in a fit of anger, threw a child overboard, resulting in the child's death. The court held that the act amounted to culpable homicide not amounting to murder due to the absence of premeditation or specific intent to cause death.[6]
7. Bhagwan Singh v. State of Punjab (1952): In this case, the accused struck the victim on the head with a knife during a quarrel, resulting in the victim's death. The court held that the accused's act constituted culpable homicide not amounting to murder as it lacked the requisite intention to cause death.[7]

The above cases show that the court takes every fact into account before deciding on criminal liability of an accused. It appears from the case that the deceased apparently had AAA for 10 years and she was also negligent towards her own health. The disease condition deteriorated further in last 6 months and after that she sustained blunt trauma for which she was operated. During surgery the aneurysm was not ruptured and it was excised with repair of the arteries. However, she developed DIC, hypotension in post operative period leading to death.

The sequence of events shows that there are various factors involved in leading to death apart from trauma. So, it is up to the wisdom of court to decide on the degree of culpability of homicide of the accused in this case. The role of the doctor is restricted to do a thorough analysis and submit the facts before the judiciary.

Conclusion

Abdominal aortic aneurysms are a critical cardiovascular condition that necessitates careful monitoring and management to prevent complications. Early detection, risk factor modification, and timely intervention are crucial elements in the effective management of AAA. The forensic pathologist needs to gather detail information including medical history and treatment records before conducting autopsy. The final interpretation of autopsy surgeon can play a vital role during trial of a case to help the court deliver justice to the citizens.[4]

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