CASE REPORT

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An Elderly Woman Uncommon sudden Cardiac Death- A case report

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Abstract

Sudden cardiac death is a major international public health problem accounting for approximately 15-20 % of all deaths, most such cases come to the limelight due to its acute mode of onset and its devastating effects on the bereaved family members. As a natural consequence autopsy surgeons are also more focused when such deaths occur in relatively younger age groups and extra effort is given to find out the actual cause of death, However, histopathology can reveal a diagnosis that can make autopsy surgeons rethink and reiterate the significance of histopathological examination in sudden suspicious cases related to sudden death. Requisition for conducting post-mortem examination of an 80-year-old female was brought to Kolkata Police Morgue on 30/01/2023, being referred from medical college Kolkata. Histopathological examination shows myxoid degeneration with spindle-shaped cells, myxoid tumour cells, and lymphocytic infiltrate suggestive of atrial myxoma.

Keywords: sudden cardiac death, spindle-shaped cells, myxoid tumour.

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Introduction

Primary tumours of the heart are not common and the prevalence of cardiac tumours ranges from 0.001 to 0.3 at autopsy, of these 70 % of cardiac tumours are benign and the most common form is myxomas Myxoma usually present in any age group but more often between 4thand 6th decades of life. The signs and symptoms of atrial myxoma are atypical and highly variable depending on the position, size, mobility of the tumour, physical activity, and body position of the heart.[1] Immunohistochemical studies suggest that myxoma cells originate from multipotent mesenchymal cells, which are capable of both neural and endothelial differentiation, 10 % of myxoma are of the inherited autosomal dominant disorder called carney complex, while the rest of cases appear to be sporadic. Macroscopically atrial myxoma is often pedunculated and soft in texture, The myxoma varies from 1 to 15 cm with a weight of between 30 and 180 gm. The tumour can present with a smooth, villous, or friable surface. The villous and friable myxomas are usually large and are associated with embolic events, while the smooth myxomas are usually large and present more with obstructive events. Atrial myxoma often produces vascular endothelial growth factors that stimulate angiogenesis as well as various cytokines and growth factors that result in constitutional symptoms including fever, malaise, anorexia, weight loss, and high sedimentation rate,[2,3]

Atrial myxoma manifestation through several mechanisms.

Obstructive Symptoms

It is usually seen in left-sided atrial myxoma with mitral valve obstruction or regurgitation. Left-sided heart failure and secondary pulmonary hypertension. The most common symptoms are dyspnoea with exertion followed by Orthopnoea, paroxysmal nocturnal dyspnoea, and pulmonary oedema.

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Thromboembolic symptoms

Due to high systolic pressure and location, left atrial myxoma is most commonly associated with an increased risk of systemic embolization particularly in the Central nervous system, retinal arteries as well as viscera, especially the spleen, kidney, adrenals, abdominal aorta, iliac and femoropopliteal arteries.[4]

Case History

On the 30th of January, 2023, the Kolkata Police Morgue received a requisition for conducting the medicolegal autopsy of an 80-year-old female. The case was referred from a medical college in Kolkata as the deceased person was admitted under the General Medicine Department with a history of sudden onset of dyspnoea and chest pain and expired within 6 hours of admission. The body of the deceased person was sent for a post-mortem.

Autopsy findings

The routine medicolegal autopsy was conducted at 3:45 pm on 30/01/2023, The dead body of an average-built and well-nourished female subject, of weight 58kg and height 5 feet, Rigor Mortis present all over the body, face, eyes closed, pupils

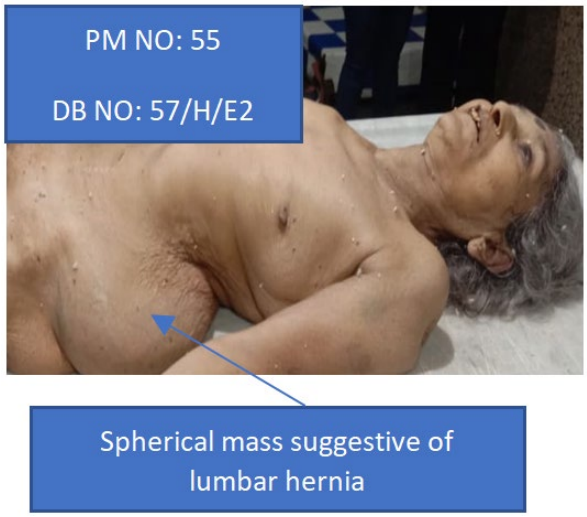

Figure 1 : Spherical mass suggestive of lumbar hernia

Figure 2: Solid white patches on the sternocostal surface of right atrium suggestive of shoulders patches

Figure 3 : Heart on grossing shows left and right atrial mass

dilated equally on either side and fixed, conjunctiva congested, and corneas were hazy.

External examination

A spherical mass-like bulging on the lateral aspect of the left hip is suggestive of a lumbar hernia (Figure 1). Multiple white patches over the sternocostal surface of the right atrium are suggestive of shoulder patches (Figure 2)

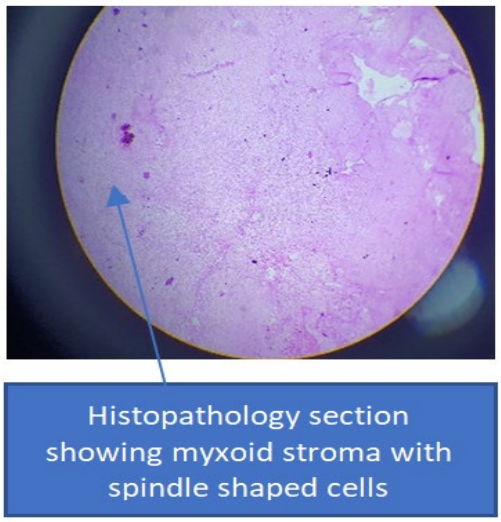

Figure 4: histopathology section showing myxoid stroma with spindle shaped cells

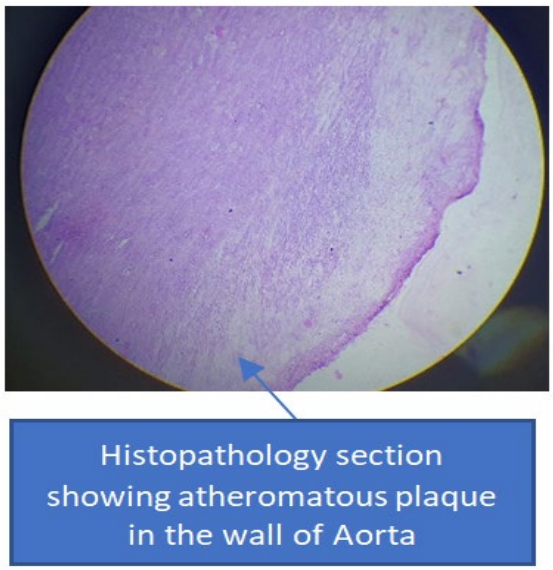

Figure 5: Histopathology section showing atheromatous plaque in the wall of Aorta

Gross Heart findings

The specimen of heart measuring 15x9x6.5 cm3, Solid Mass in the right atrium measuring 7x4x1 cm3, and Mass in the left atrium measuring 4x1.5x0.5 cm3 (Figure 3)

Histopathological Findings of Heart

Section of Heart showing myxoid stroma with lymphocytic infiltration and spindle-shaped cells (Figure 4), Histopathology section showing atheromatous changes in the wall of Aorta (Figure 5).

Routine viscera along with blood, urine, vitreous humour, and bile were packed, labelled, signed, sealed, and handed over to the police for onward transmission to the Forensic Science Laboratory for toxicological analysis, which came out negative for any drug or pharmacological agent.

Discussion

Few Cases of atrial myxoma have been reported in the literature, of these, the majority are left atrial myxoma with accompanied age between 70-80 Years with symptoms of chest pain and dyspnoea. The case report of a French hospital shows that the age range is more than 70 and clinical presentation is mostly chest pain leading to cardiac failure. A case report in Italy shows the majority of the presentation is in females with chest pain and syncope. Myxoma is the most frequent primary cardiac tumour accounts for About 75 % of myxomas originate in the left atrium, while 15 to 20 % of them are situated in the Right atrium. They have female preponderance, usually presenting in the 4th to 7th decades.[5] It has been proposed to result from widespread abnormality resulting in excessive proliferation of certain mesenchymal cells and excessive glycosaminoglycans production by them. Most tumours are histologically benign and potentially lethal due to intracavity or valvular obstruction, peripheral embolism, and conduction disturbances. The association of constitutional symptoms is likely due to the synthesis and secretion of Interleukin-6.

The signs and symptoms of atrial myxoma are atypical and highly variable, depending on the size, position, and mobility of the tumour, and are modified according to the physical activity and body position of the patient. In this case, the deceased person denied fever, arthralgias, and anaemia. the patient may present with atypical chest pain, syncope, lethargy, malaise, and pulmonary embolism. However, the most common manifestation is dyspnoea (80% of patients). The classic presentation of atrial myxoma compromises a triad of symptoms (myxoma triad) which include embolic and obstructive phenomena constitutional symptoms and histopathological features like myxoid-stroma with tumour cells and spindle-shaped cells with lymphocytic infiltrate.[6,7] Most of the cases are asymptomatic and routinely the presence of myxoma during autopsy. The treatment of choice for myxoma is surgical removal. When the atrial myxoma is confirmed, urgent surgery is necessary to prevent mortal complications such as embolic complications and sudden death.[8]

Conclusion

The fact that a pathological autopsy is carried out to diagnose the cause of death when all antemortem efforts have failed. But histopathological examination is vital in an autopsy as it helps to establish the cause of death as well as to study disease in situ thus enriching medical knowledge and making various rare diagnoses. Thus, autopsy and histopathological examination remain the most accurate means of detecting the cause of death and other significant and incidental diagnosis.[9]

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