

Sudden Death Due To Undiagnosed Rheumatic Heart Disease With Mitral Stenosis In Young Adult - A Autopsy Case Report

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Abstract:

An 18-year-old male died suddenly while running a confidence course in basic training. Past medical history was negative for acute rheumatic fever. The macroscopic autopsy findings were unremarkable. Histology revealed typical rheumatic heart disease.

At autopsy he had chronic rheumatic mitral valvulitis with extensive myocarditis. Multiple Aschoff bodies were seen in perivascular regions in left ventricle wall.

Review of recent literature of various causes of sudden cardiac death failed to reveal chronic rheumatic valvulitis and myocarditis as reported causes of sudden death.

INTRODUCTION

Cardiovascular pathology is most common cause of sudden death. Primary valvular heart disease ranks well below coronary heart disease, stroke, hypertension, obesity and diabetes as major threats to public health. Rheumatic fever is dominant cause of valvular heart disease in developing countries. Rheumatic heart disease accounts for 12-65% of hospital admissions related to cardiovascular disease . It is a source of significant morbidity and mortality. We report a case of a young patient of rheumatic heart disease with mitral stenosis.

CASE REPORT

A 40 year young male resident of Jaipur, Rajasthan was brought dead in emergency of SMS Hospital jaipur. No other relevant information regarding his past illness and family history was available . Complete medico legal autopsy was performed.

Autopsy findings as per record:

External Examination: On examination he was averagely built and nourished. No injury marks. Rigor mortis on neck and jaw region. Faint color

post mortem staining on back and dependent body surface area. B/L pupil fixed and dilated. Bluish discoloration was present on tip of finger of both hands and in the nose region.

Internal examination

Brain & meninges were found congested. Both right and left lungs were congested. Heart was enlarged in size. Liver was congested. Spleen was congested. Both kidneys were congested. Probable cause of death was kept heart attack and pending for Histopathological examination by Medical Officer. Above viscera were sent for histopathological examination to autopsy section in the Department of Pathology at SMS Medical College , Jaipur.

Gross morphology

Weight of complete heart was 326 grams. The pericardial surface was unremarkable. On cutting open-

- Left ventricular wall thickness -1.5 cm. c/s unremarkable
- Right ventricular wall thickness- 0.2 cm . c/s unremarkable

- All coronary vessels were patent.

Mitral valve circumference – 5cm. Cusp of mitral valve show thickening of cusp with healed vegetation & shortening of chordae tendinae.

- Tricuspid valve circumference – 10 cm , show also thickened & healed vegetation
- Pulmonary valve circumference – 8 cm. cusp are within normal limit.
- Aortic valve circumference – 7cm . Cusp are within normal limit.
- There was no evidence of atherosclerosis or infarction .

Other organs- cerebrum, cerebellum, lungs, liver, spleen, kidneys - congested .

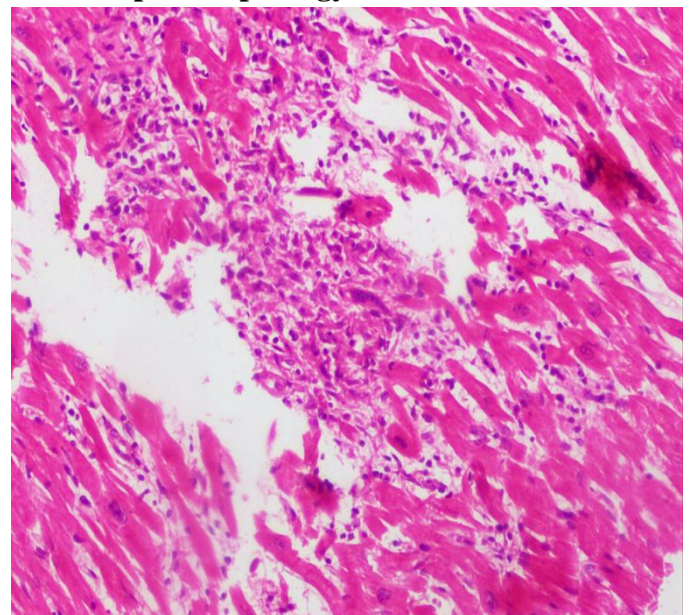
Gross morphology of mitral valve -



Microscopic morphology –

Sections from mitral valve cusp reveal presence of old healed aschoff nodule with increase collagen deposition. Finding are suggestive of chronic rheumatic heart disease with mitral stenosis. Both ventricular wall , aorta and all coronaries are unremarkable.

Microscopic morphology of mitral valve



Discussion

Rheumatic fever is an acute, immunologically mediated, multisystem inflammatory disease that occurs a few weeks after an episode of group A streptococcal pharyngitis. Acute rheumatic carditis is one of manifestations of active phase and it may progress over time to chronic rheumatic heart disease of which valvular abnormalities are key manifestations. Mitral valve is often involved resulting in mitral stenosis, of which rheumatic heart disease is virtually only cause. In this case report 40 year old male who collapsed and died while at work. Examination of heart revealed chronic rheumatic heart disease mitral stenosis. Non atherosclerotic conditions that are associated with sudden death include myocarditis, dilated and hypertrophic cardiomyopathy, rupture of aortic dissection, acquired cardiac arrhythmias, cardiac hypertrophy of any cause including hypertension and miscellaneous causes including drug abuse.

Fibro fatty replacement leads to ventricular arrhythmias, predisposing individual to potential sudden death. Rheumatic heart disease encompasses myocarditis during acute rheumatic fever and residual chronic valvular deformities. In severe cases of rheumatic fever, heart tends to be dilated, and a few patients die in acute stage of the disease

Summary

Based on these histomorphological findings, diagnosis of chronic rheumatic heart disease with mitral stenosis given as cause of sudden death

Conclusion

Cardiovascular pathology is a major contributor for sudden death. Role of histopathologist is to provide a detailed examination of organs, especially heart, in order to identify a definitive cause of death. However, sudden death with a morphologically normal heart is a very important negative finding at autopsy. Thus, a histopathologist plays a vital role in providing a definitive cause in sudden death. This will help us to reduce number of negative autopsies in long run and provide a definitive cause of death.

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