RIGHT VENTRICULAR FATTY INFILTRATION IN MITRAL STENOSIS, A RARE CAUSE OF SURGICAL FAILURE.

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ABSTRACT

A 47 year-old female died after mitral valve replacement. Post-cardiopulmonary bypass right ventricle was not able to pump despite good left ventricular contractility. At microscopic examination, diffuse right ventricular fatty infiltration was found. We found no previous report of this pathology in patients with mitral stenosis.


Keywords: Fatty infiltration, Cardiopulmonary bypass, Right ventricle

CASE REPORT

A 47 year-old female referred with dyspnea and palpitation (New York Heart Association functional class II). The patient was a known case of rheumatic fever and mitral stenosis being followed in another institution. She had a history of an episode of emboli to femoral artery for which embolectomy was done successfully years back.

On admission, physical examination showed a well-nourished and well-developed female with a weight of 62 kg, a heart rate of 65 beats per min, and blood pressure of 110/80mmHg. There were rales in both lower lung fields. A diastolic rumbling murmur with presystolic accentuation and an opening snap was heard at the left sternal border and axilla. Liver was palpated 1cm below right costal margin. Electrocardiography showed atrial fibrillation with normal axis without rapid ventricular response. CXR showed straightening of left heart border and pulmonary knob was prominent. Two dimensional echocardiography showed left atrial

Figs. 1 and 2: Fatty infiltration extending from epicardial to endocardial area compressing muscle bundles.
enlargement (4.75cm), mitral valve area 1.32cm, 
LVEDD: 4.85 and LVEDD: 3.50cm, right ventricular 
internal diameters were normal. Cardiac catheterization 
revealed pulmonary pressure 48/28mm Hg, elevated 
 wedge pressure (30mm Hg) and dome shaped and 
irregular mitral valve.  
The patient was treated with digoxin, triamterene 
and hydrochlorothiazide and consulted for surgical 
intervention. Mitral valve replacement was suggested. 
The patient underwent operation for mitral valve 
replacement but unfortunately after operation and 
during post-pump period, right ventricle was not able 
 to beat. Left ventricle contracted normally despite the fact 
that right ventricle could not function. At necropsy, the 
heart weighed 300g. Endocardial surface was normal, 
left ventricle was normal. Section of the right ventricle 
showed that bundles of myocardium have been 
separated from each other by abundant mature fat 
tissue. The trapped bundles were also atrophic. This 
fatty infiltration of the myocardium involves two-thirds 
of the thickness of the ventricle beneath the epicardium. 
No evidence of inflammation or infarction was seen.  

DISCUSSION  
There is only cardiomyopathy and heart failure with 
low ejection fraction which causes pump failure. Right 
ventricular fatty infiltration has never been reported 
either as consequence of mitral stenosis or a cause of 
pump failure. Fatty infiltration of the right ventricle has 
been reported in cases with obesity, but rarely 
reported in normal weight persons. In this rare case 
which was proved by pathological examination, this 
rare phenomenon is demonstrated but the mechanism of 
this process is not clear.  

REFERENCES  
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