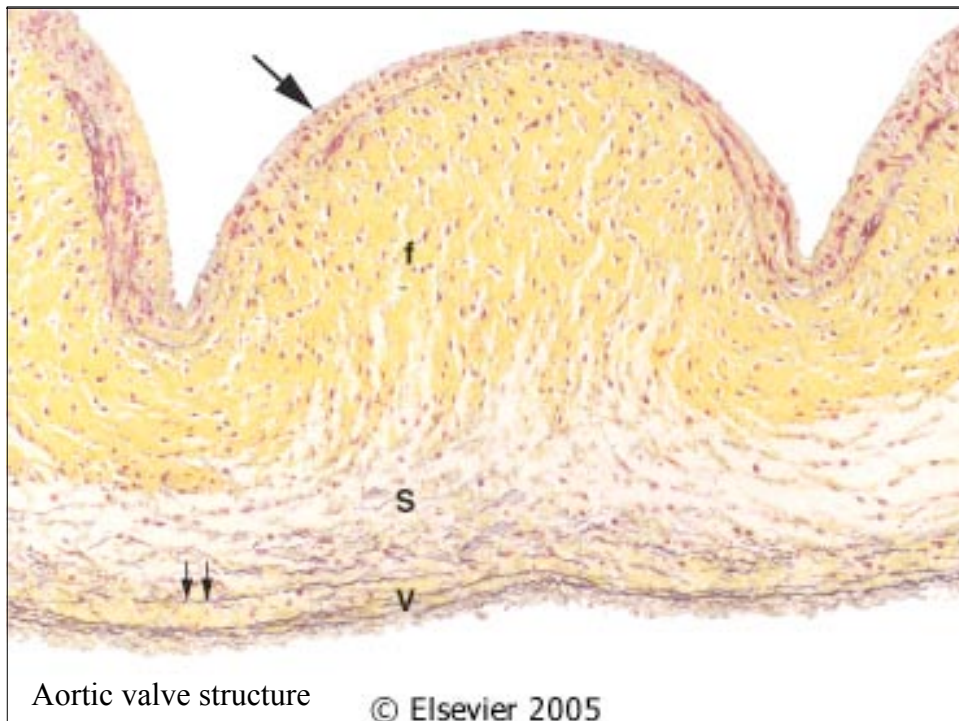
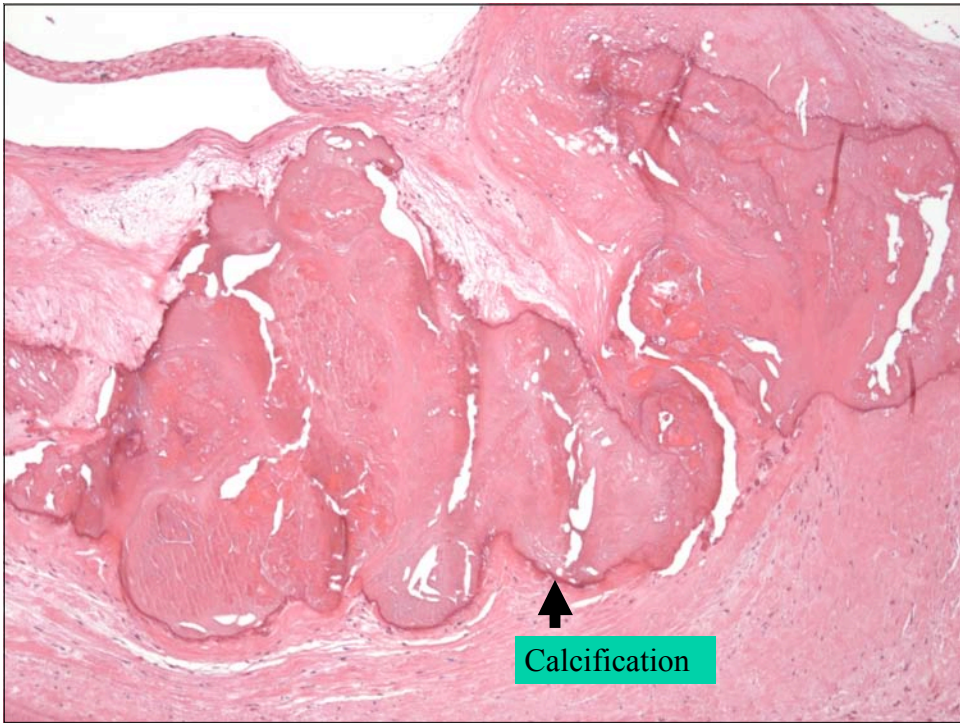
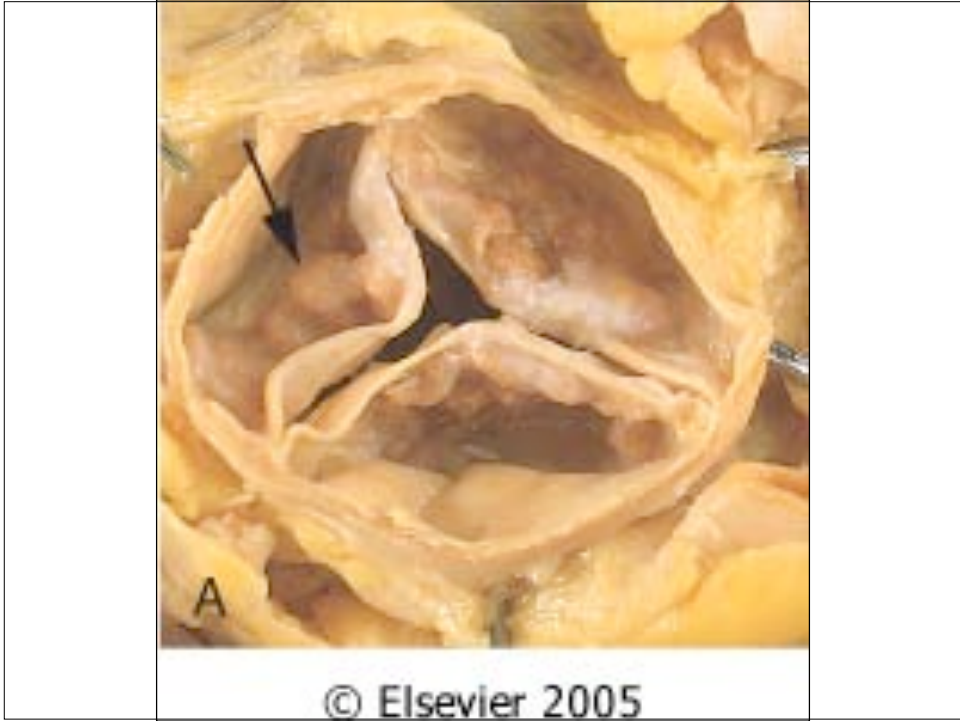
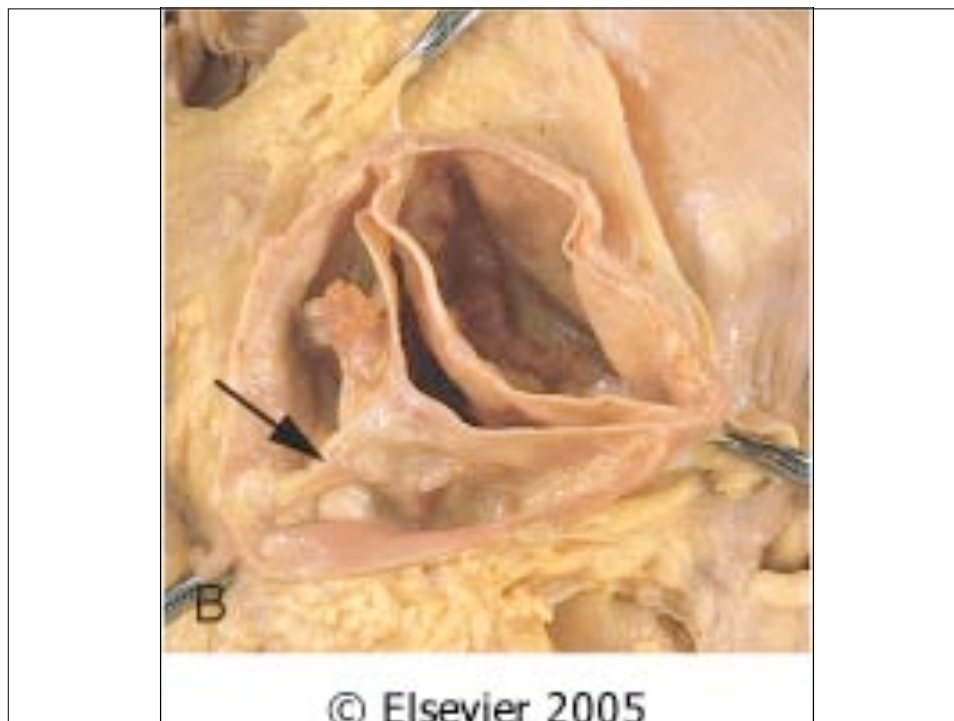
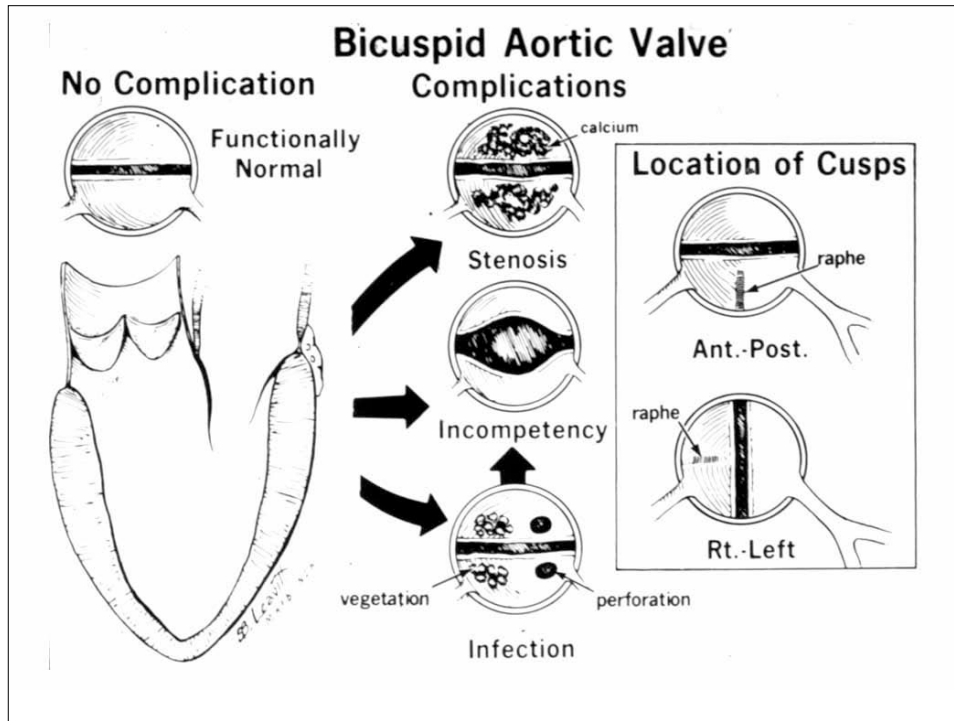


Aortic stenosis







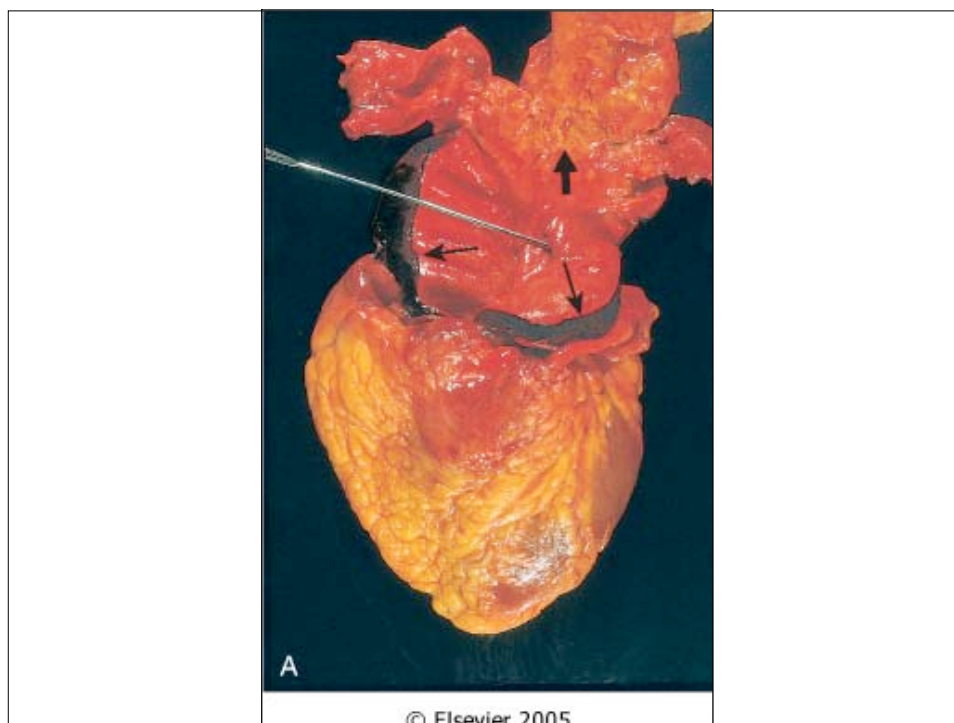
Aortic insufficiency- aortic dissection

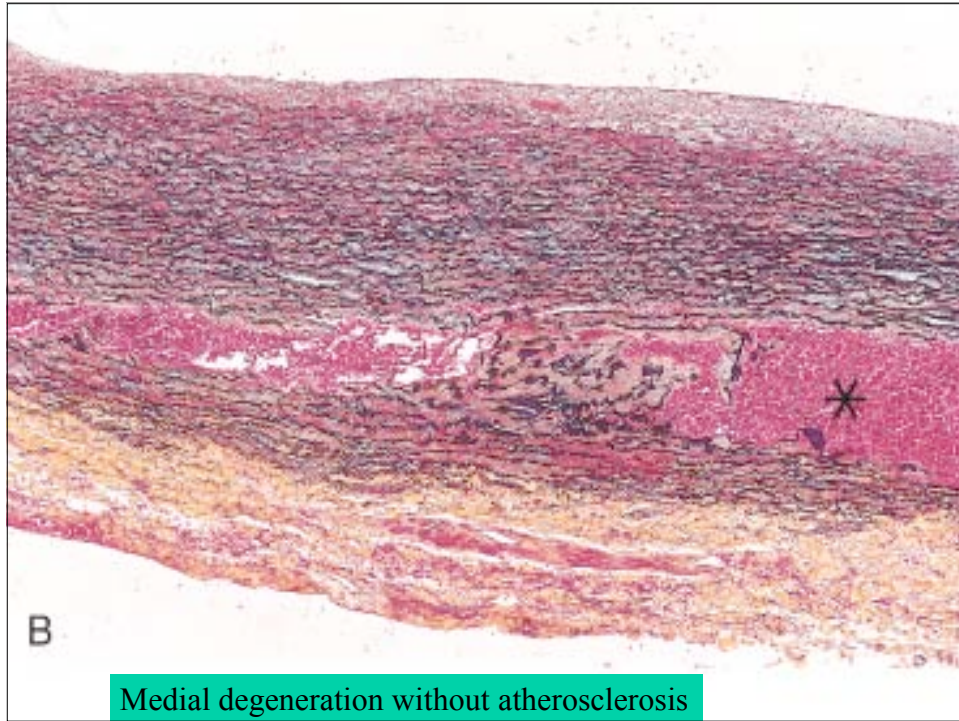
- **Hypertension**
- **Connective tissue disorders**

Marfan's: 1 in 5000.

70-85% familial - Autosomal dominant

Fibrillin-1 (15q21) ~ 500 distinct mutations





Mitral stenosis

Acute Rheumatic Fever

Immunologically mediated, following 1-6 weeks after pharyngitis with Group A Streptococcus in 3% of those infected.

Antibodies against streptococcal M proteins cross-react with similar antigenic determinants in joints, heart, skin, CNS.

Acute Rheumatic Fever: Major manifestations (need 2 for diagnosis)

1. Migratory polyarthritits in 75%
2. Carditis in 50%
3. Sydenham's chorea in 10%(involuntary, rapid, purposeless movements – caudate)
4. Erythema marginatum of skin in 10% (brown/pink with pale center)
5. Subcutaneous nodules (0.5 – 2 cm; extensor surfaces, occur late)

Acute Rheumatic Fever

Minor Manifestations (need 2 plus 1 Major): Previous rheumatic fever, arthralgia, fever, increased ESR or CRP, prolonged P-R interval.

With 2 Major or Major/2Minor

Supportive evidence of streptococcal infection: ASO Ab, anti-DNAase B, positive throat culture

Excellent prognosis: 1% mortality - cardiac

Acute Rheumatic Fever

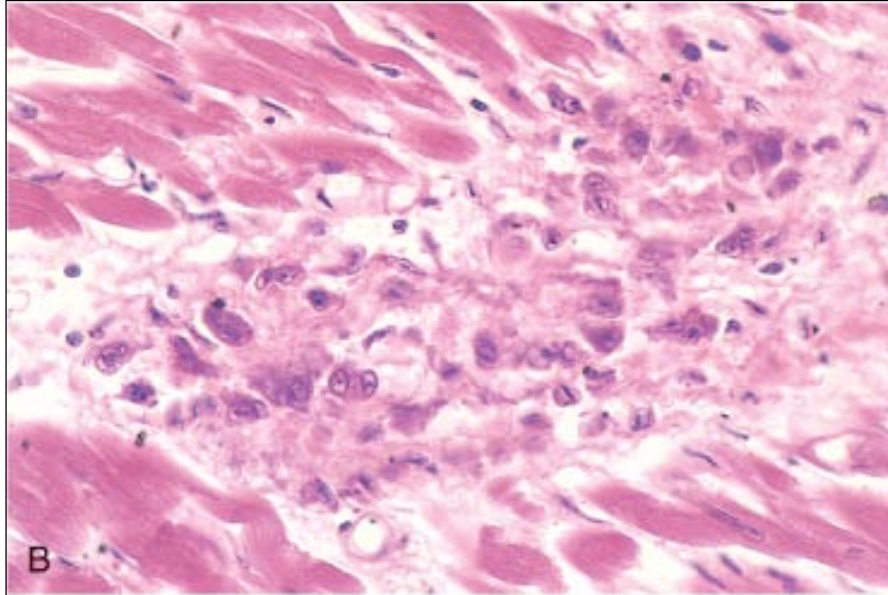
Pancarditis

Pericarditis

Myocarditis (Aschoff body)

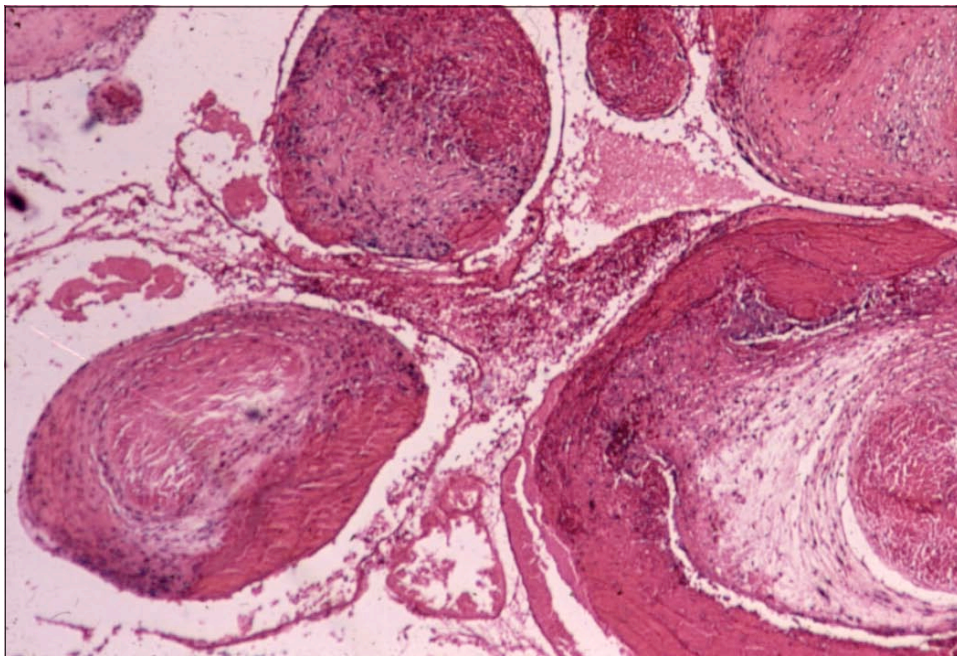
Endocarditis with sterile vegetations

Aschoff body of acute rheumatic carditis: a cardiac granuloma



B

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Chronic Rheumatic Heart Disease

Follows Acute Rheumatic Heart Disease by decades.

MV 65-70%

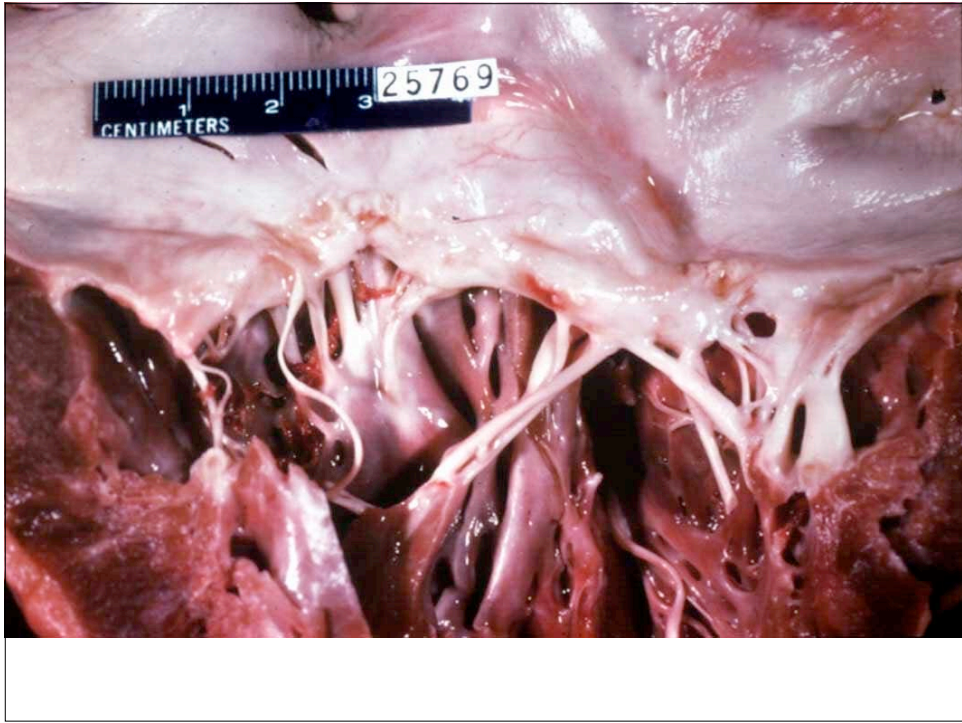
MV & AV 25%

Mitral stenosis, aortic stenosis.

Arrhythmias (A. fib. with left atrial enlargement).

Heart failure.

Predisposed to infective endocarditis.



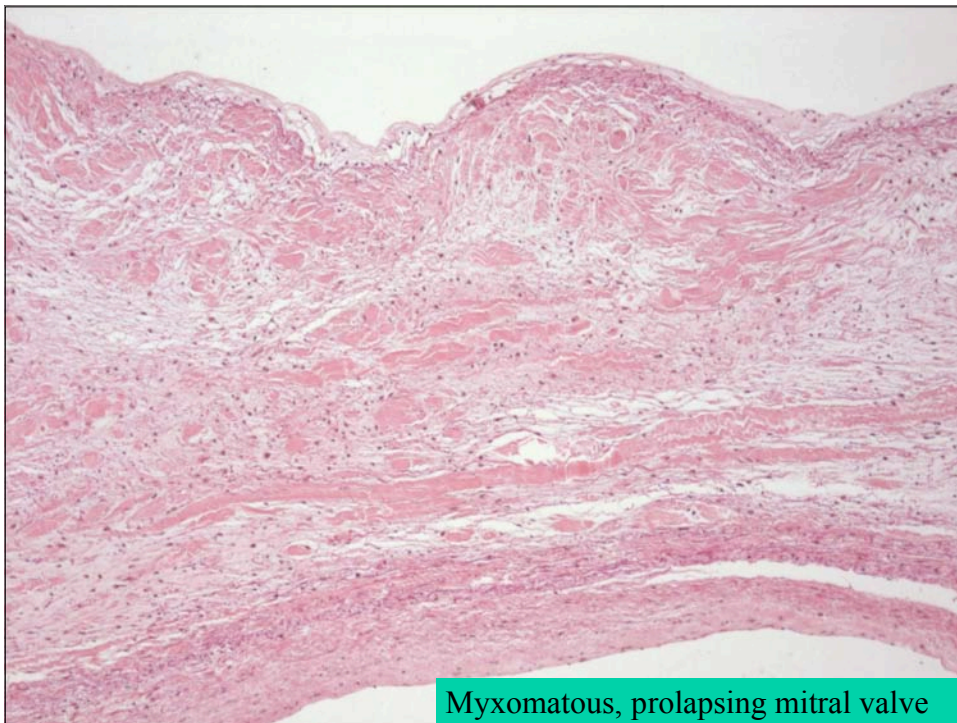
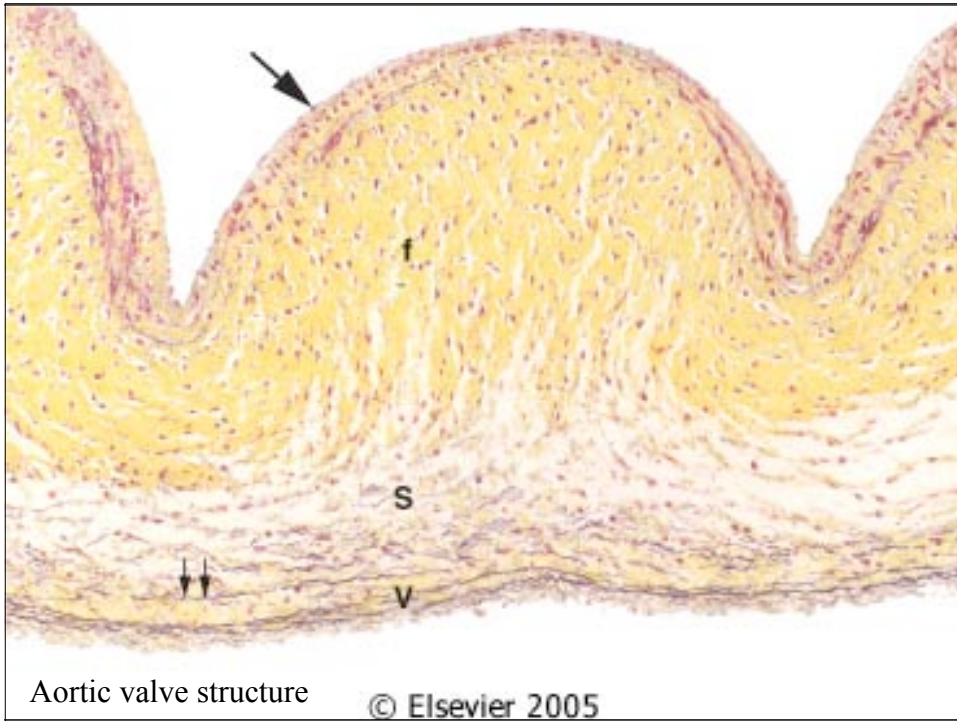
Chronic Rheumatic Heart Disease: “Fishmouth” deformity of the mitral valve



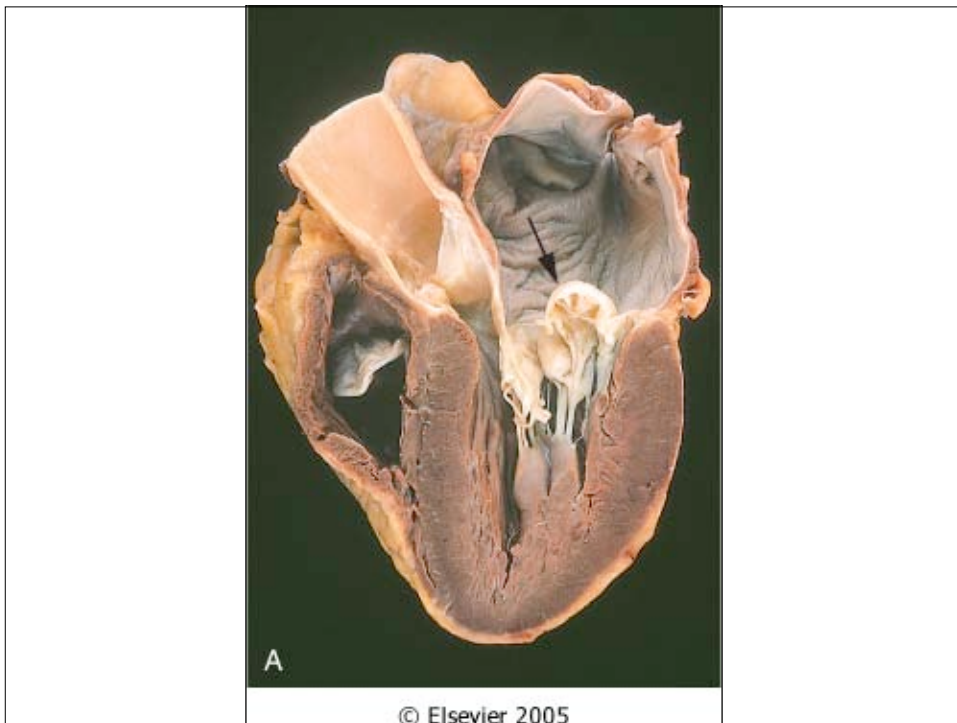
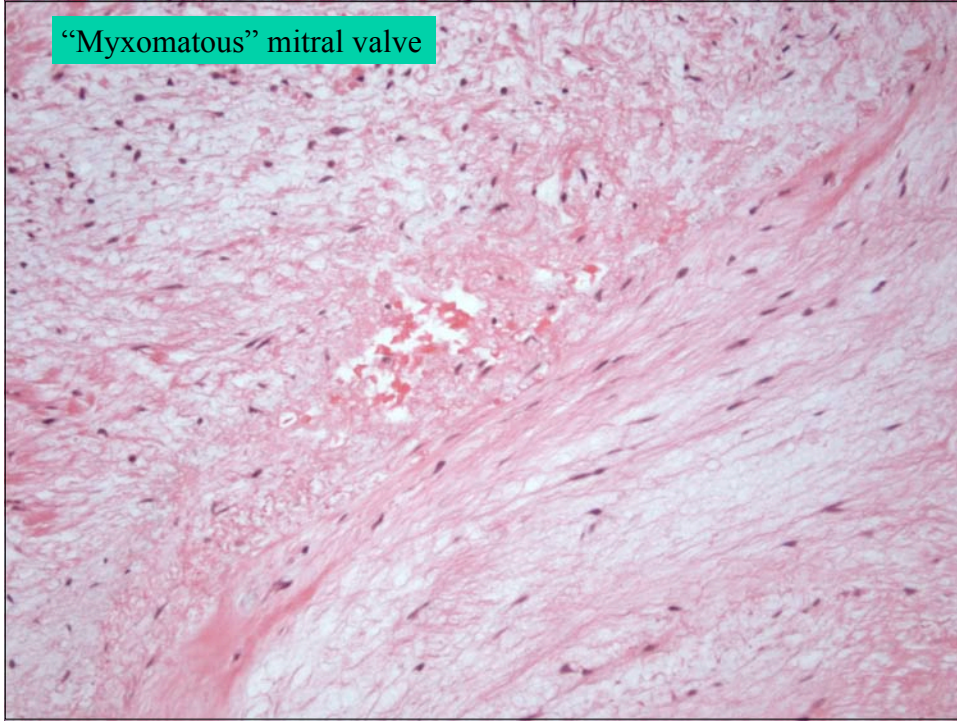
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Mitral Valve Prolapse

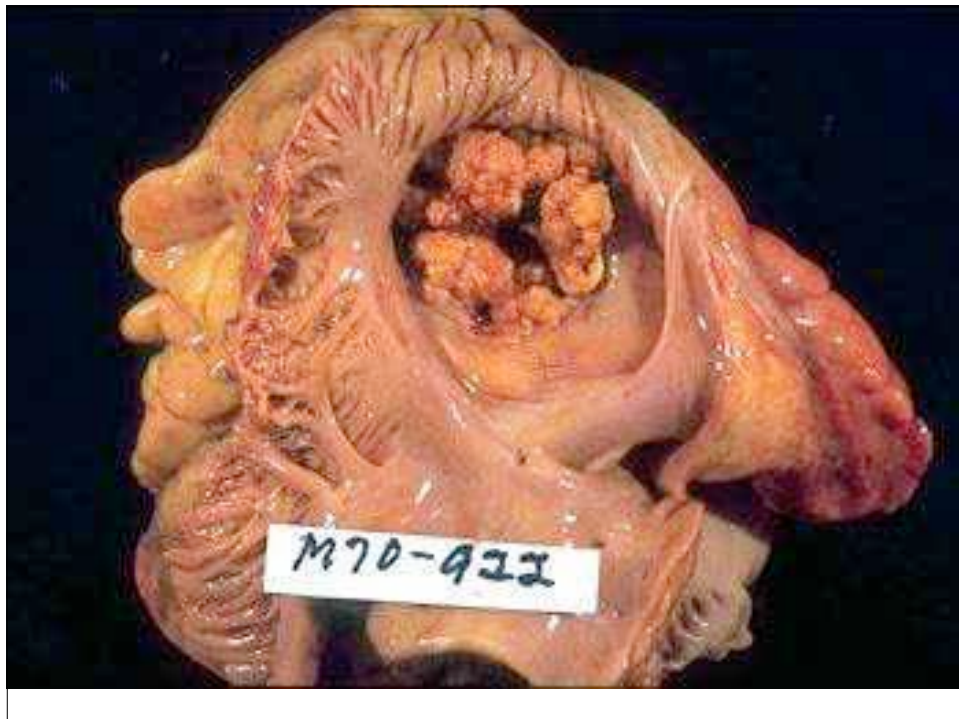
- Most are asymptomatic
- Mid-systolic click
- Rarely: chest pain, dyspnea, fatigue, or psychiatric manifestations
- ~3% have complications:
 - Infected endocarditis
 - Mitral insufficiency
 - Thrombus formation with embolization
 - Arrhythmia/sudden death (unknown mechanism)

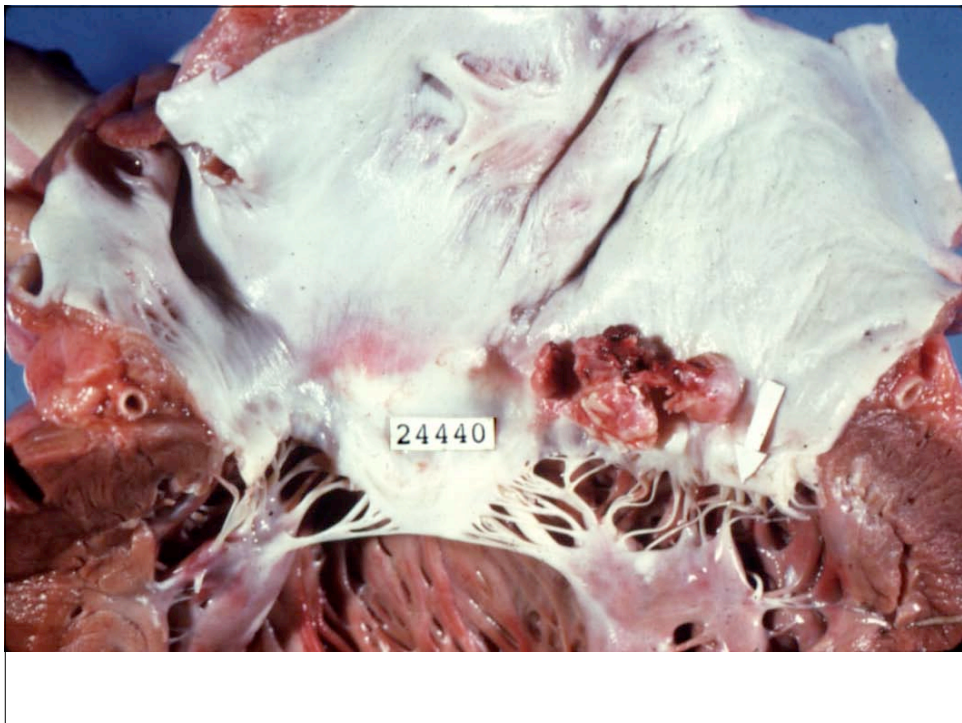
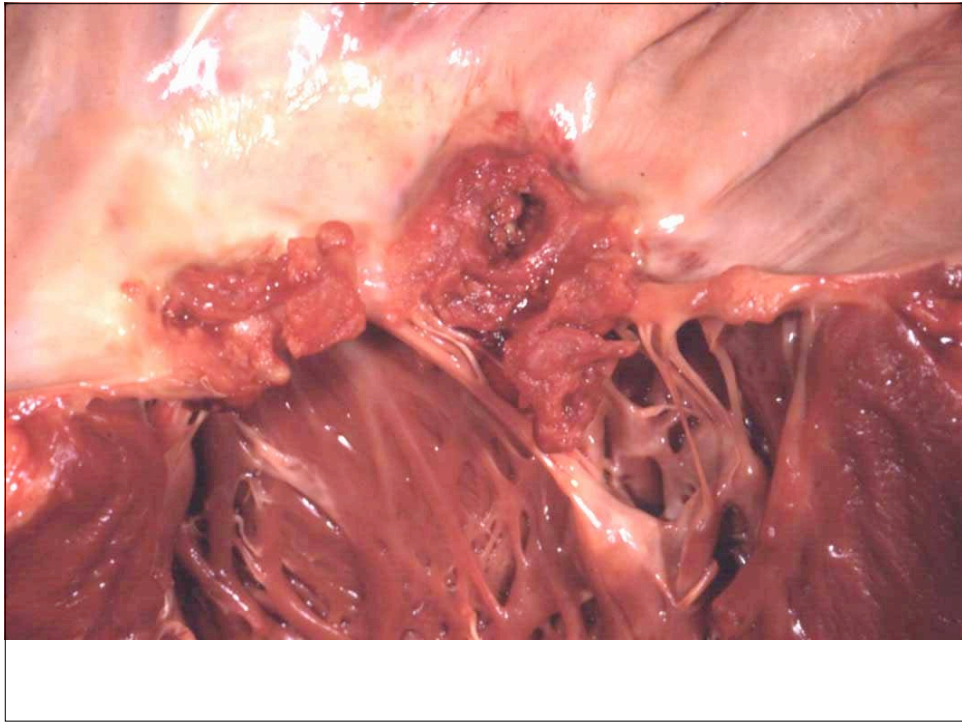


“Myxomatous” mitral valve



Endocarditis

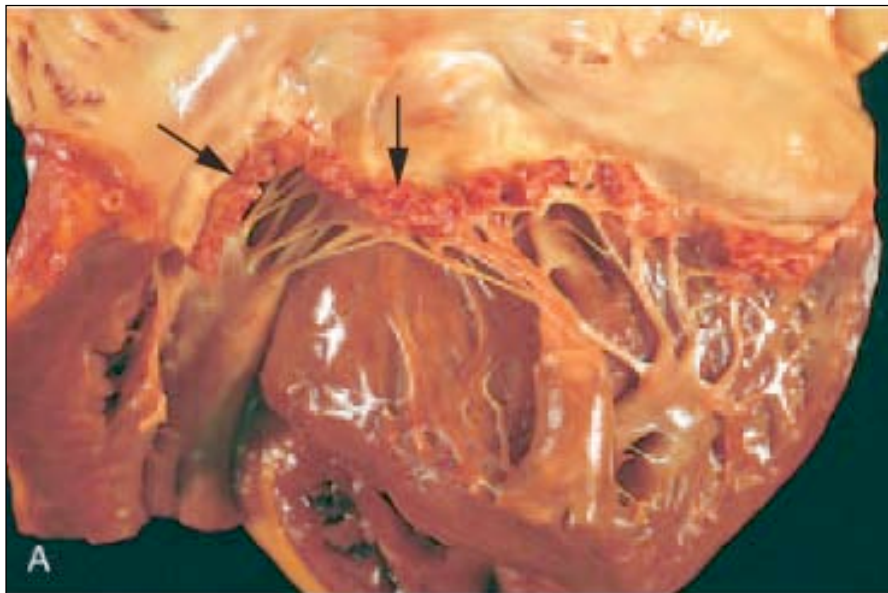




Non-bacterial thrombotic endocarditis (NBTE)

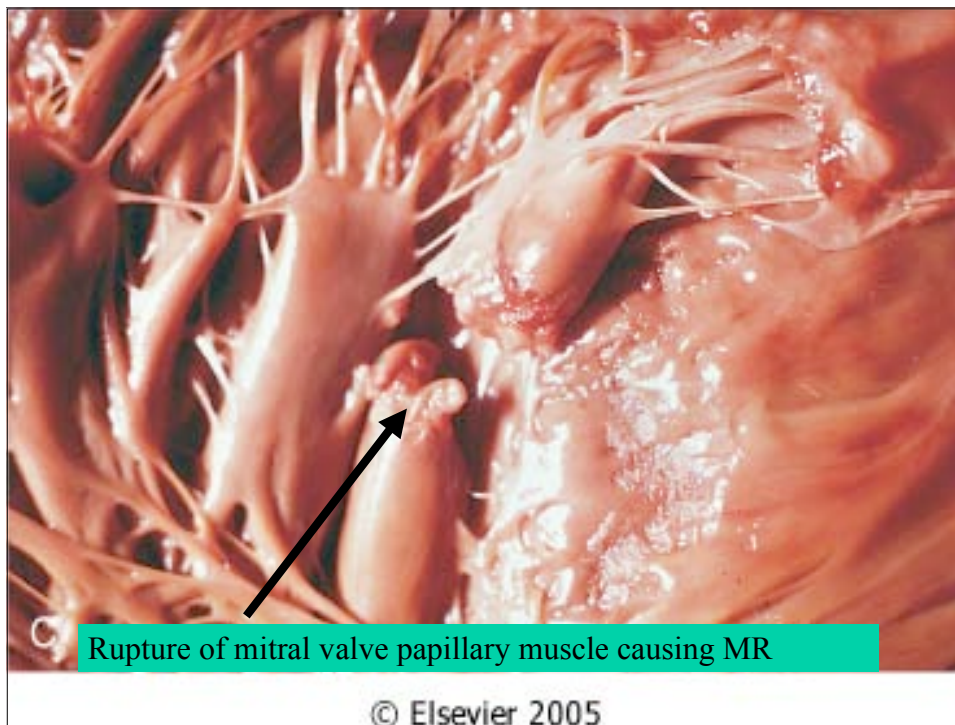
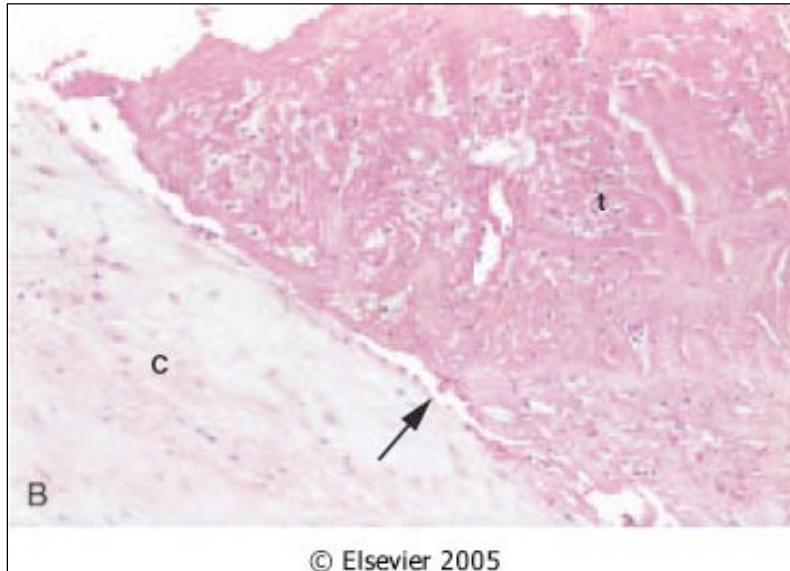
- Small (1-5 mm) sterile masses of fibrin on lines of closure.
- Hypercoagulable state: patients are often debilitated (“marantic” endocarditis) or may have malignancy (mucinous adenocarcinoma), renal failure, sepsis.
- May embolize to brain, kidney, heart.
- With bacteremia, may be converted to infectious endocarditis.

Non-bacterial thrombotic endocarditis (NBTE)



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NBTE: No inflammation or organism in thrombus



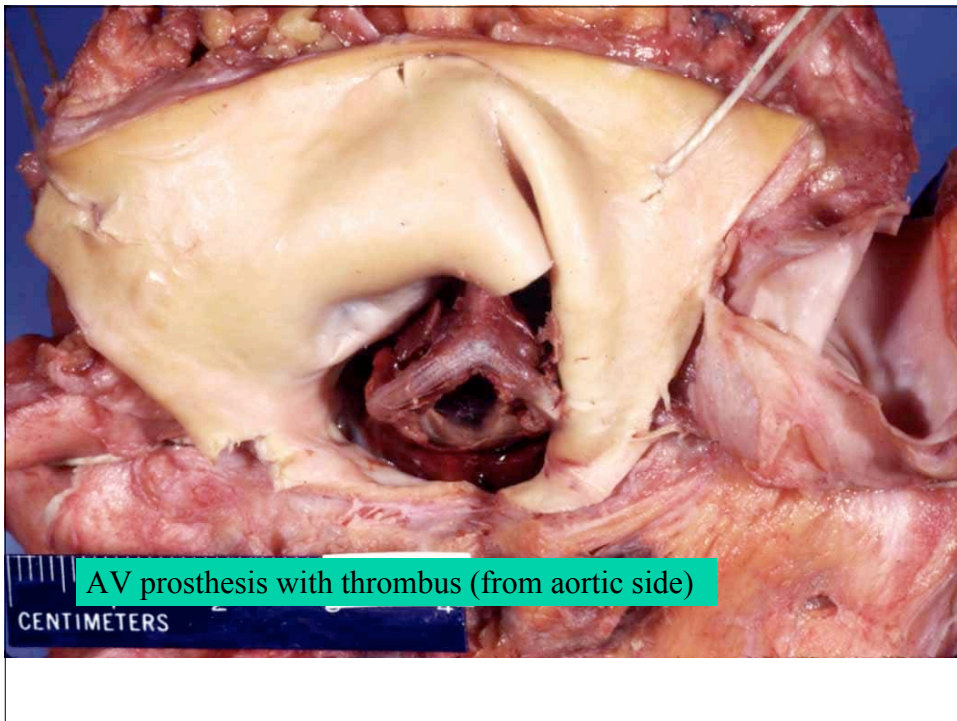
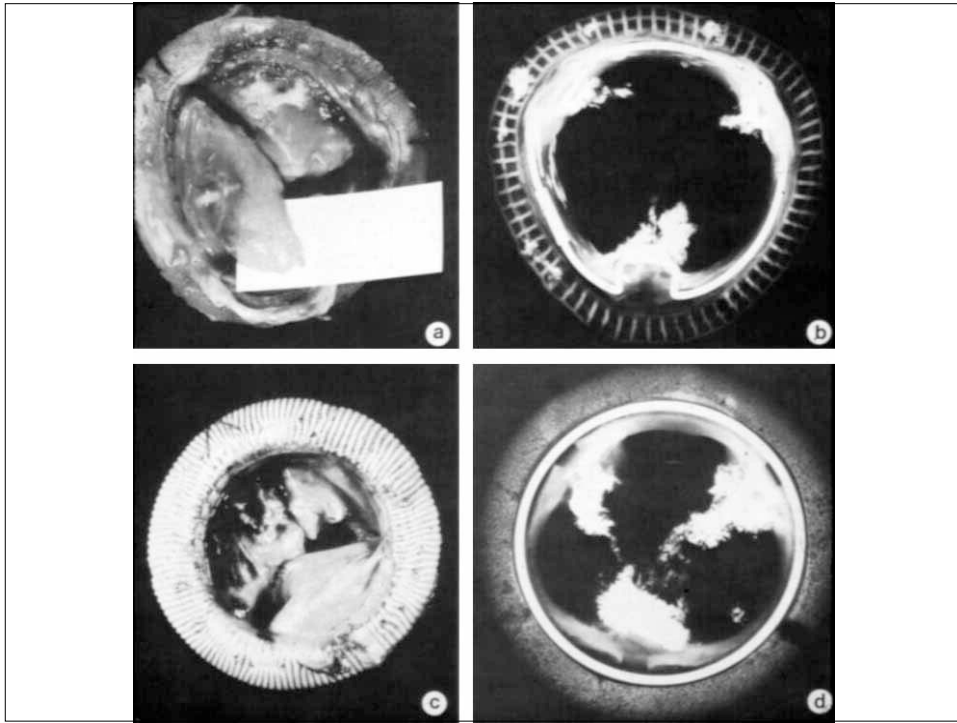
Heart Valve Prostheses: Complications

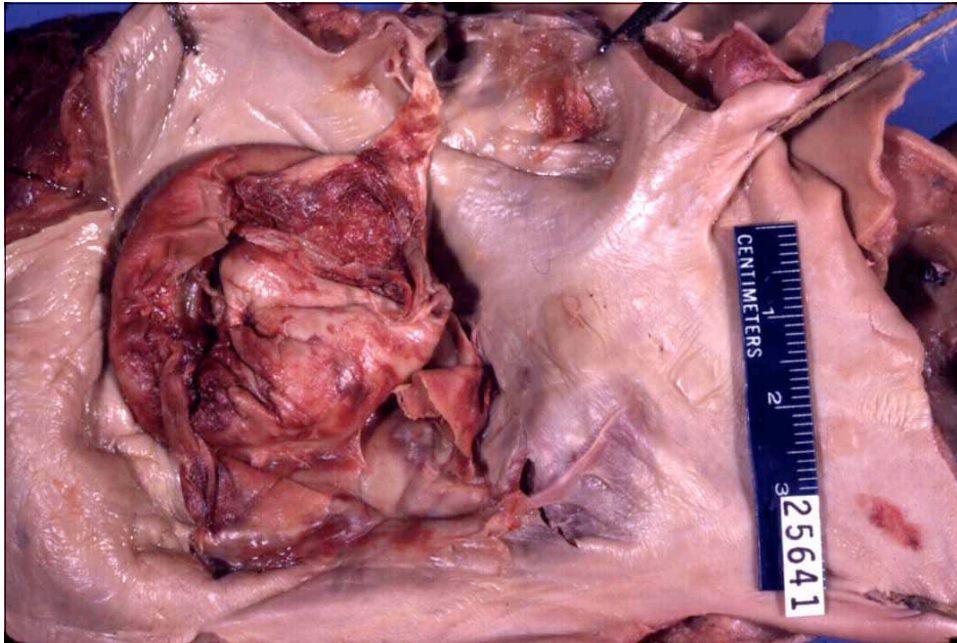
- Mechanical: component failure
- Bioprostheses: degeneration with calcification
- Both: Paravalvular leak, endocarditis.

Thrombosis and tissue overgrowth are less common in bioprostheses than in mechanical valves.



Bioprosthetic (Hancock)valve: Degeneration and tissue overgrowth





Tissue overgrowth of MV prosthesis (from atrial side)



Endocarditis of ball valve prosthesis (Starr-Edwards)