MYOCARDIAL INFARCTION

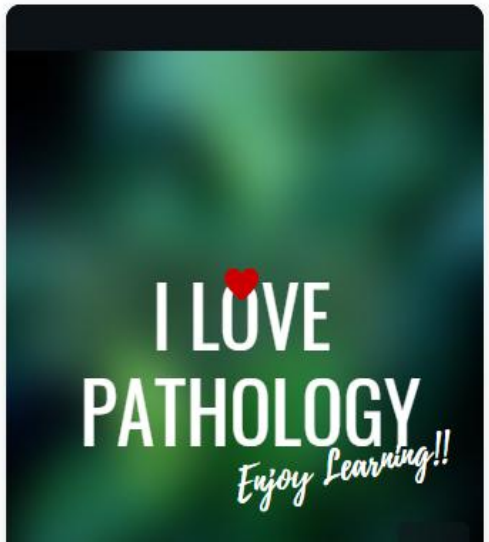
COMPLICATIONS

WHY PATHOLOGY?

CATEGORIES

Select Category

ILOVEPATHOLOGY



Consequences and Complications of Myocardial Infarction

Overall, in-hospital death rate

Approximately 7% to 8%

STEMI	NSTEMI
10%	6%

Outside Hospital-death date

One third! Patients with STEMI

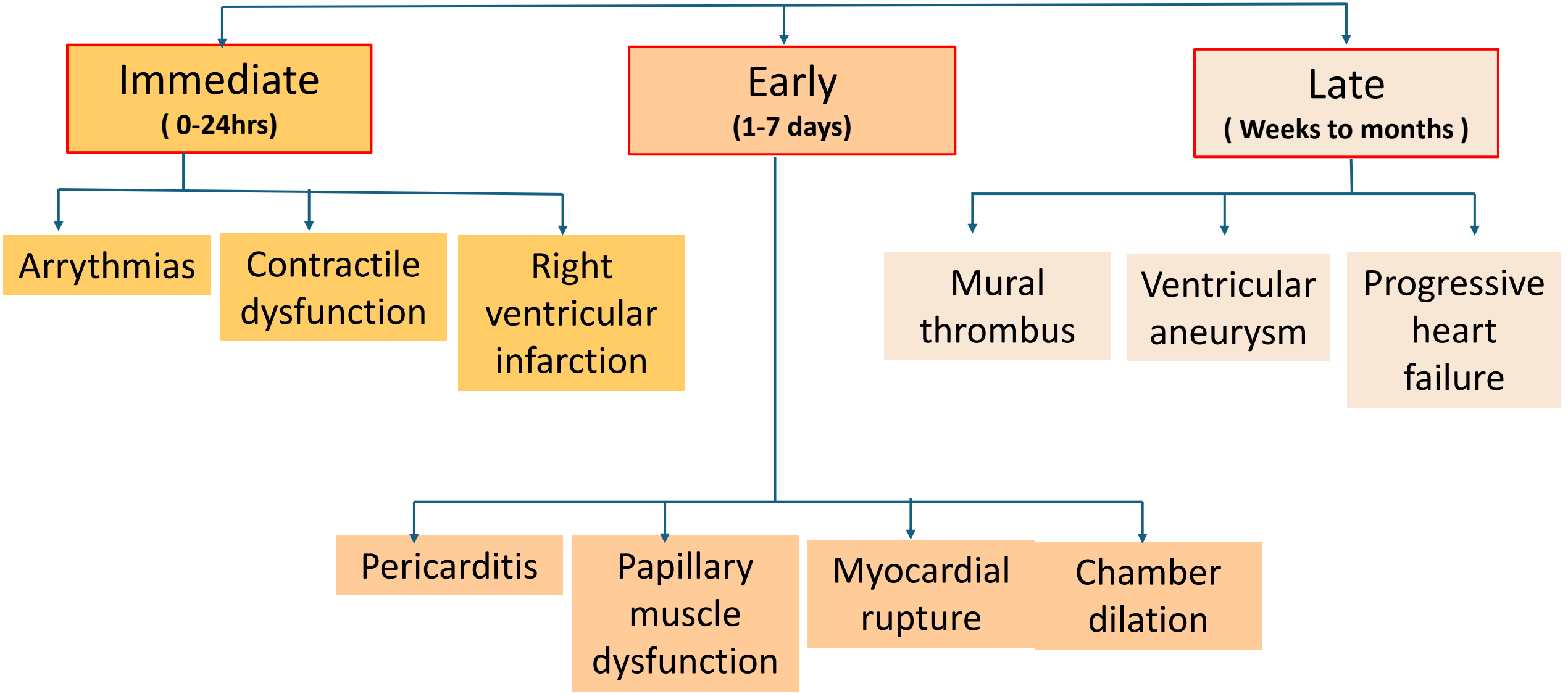
Die due to arrythmia within 1 hr. !

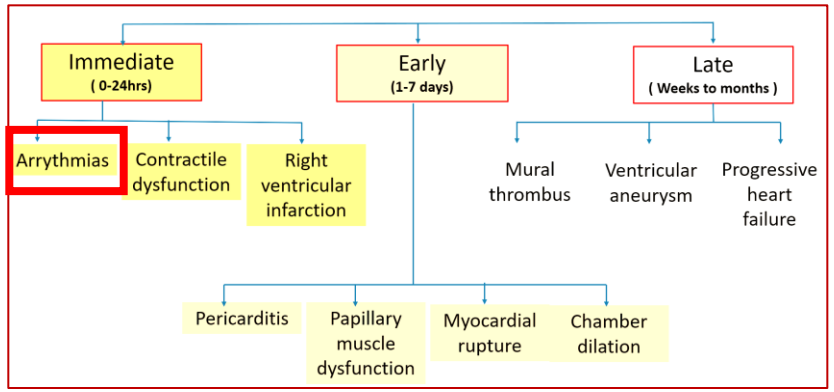
Myocardial Infarction- COMPLICATIONS

75% of the patients after an acute MI

experience one or more of the following complications

Myocardial Infarction- COMPLICATIONS





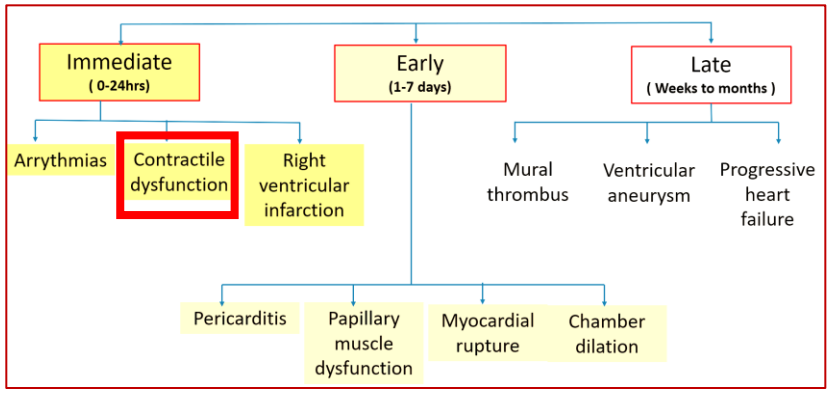
Arrhythmias

MI → "irritable" myocardium → Conduction disturbances

More common in STEMI

Common Arrhythmias

Heart block
Bradycardia
Supraventricular tachyarrythmia
Ventricular tachycardia
Ventricular Fibrillation (most serious) –
more within first hour



Contractile dysfunction

Due to weakening of myocardium

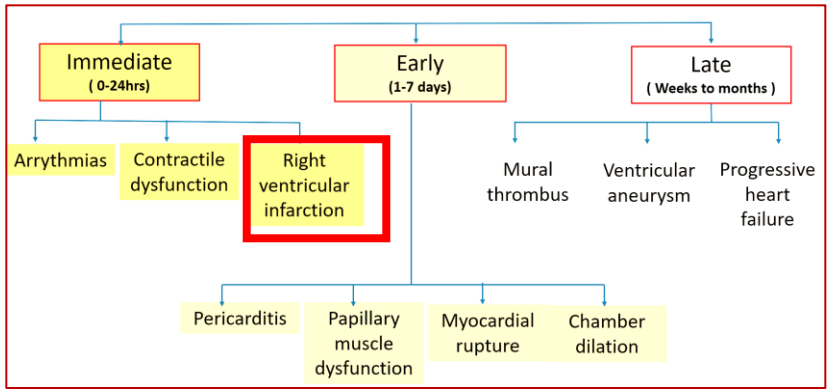
Hypotension, pulmonary congestion, and pulmonary edema

Severe pump failure

CARDIOGENIC SHOCK

10% of patients with transmural MIs

usually >40% of left ventricle is damaged



Right ventricular infarction

Isolated right ventricular infarction occurs in only 1% to 3% of MIs

Affected by RCA occlusion

Common outcome → Right heart failure → Pooling of blood in venous circulation

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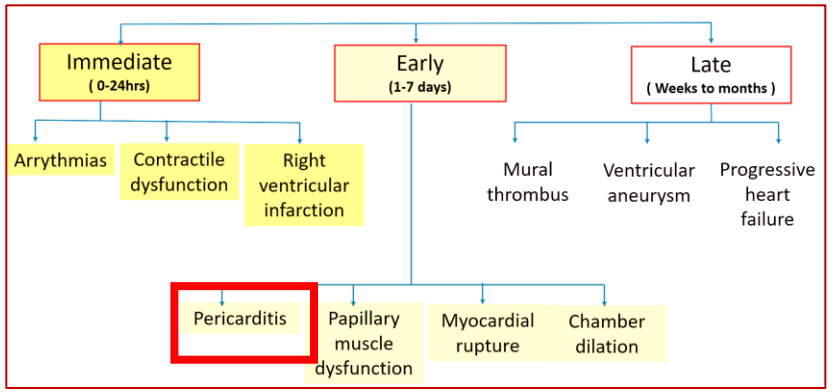
Systemic hypotension



PERICARDITIS

Myocardial inflammation

Overlying epicardium manifest as Pericarditis

fibrinohemorrhagic

Clinical features

Appears 2-3 days after MI

Chest pain & Pericardial friction rub.

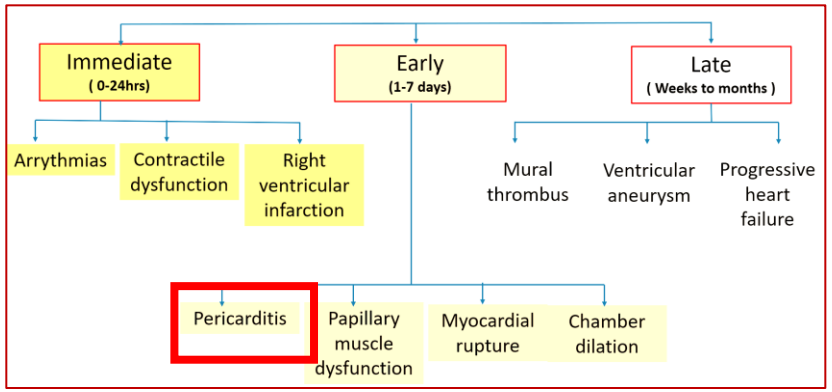
Extensive pericardial inflammation

(in large and extensive infarcts)

→ Large effusions

→ Organize to form dense adhesions

Constrictive lesion



PERICARDITIS

RARELY,

2- 10 Weeks after MI

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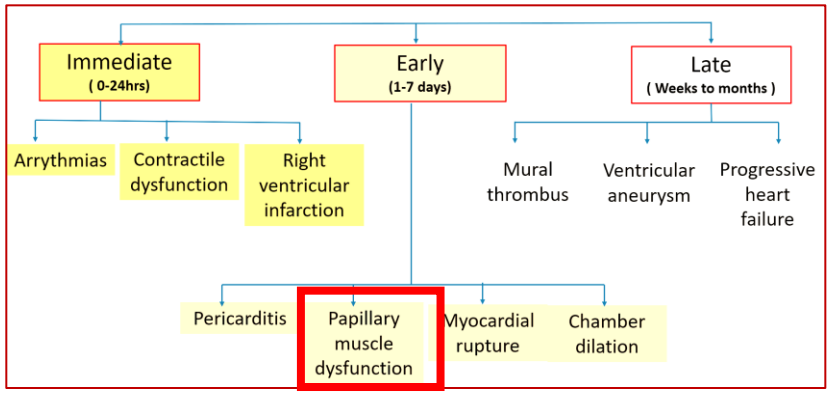
Antibodies can be formed against myocardium → Intense pericarditis

DRESSLER SYNDROME

delayed form of pericarditis



PAPILLARY MUSCLE DYSFUNCTION

Due to weakening of papillary muscle

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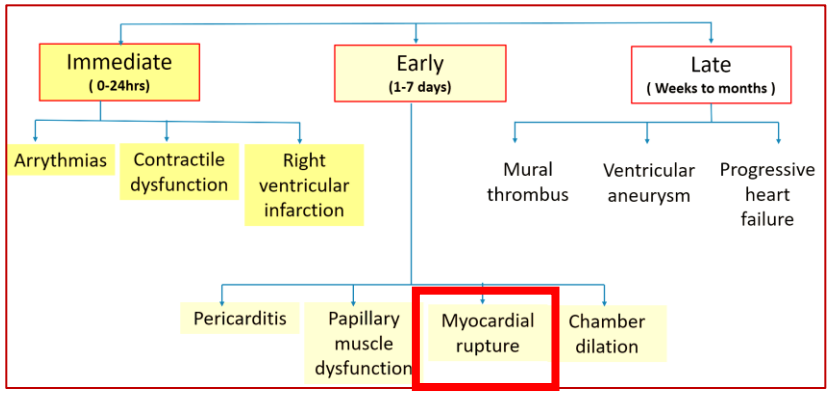
Post infarct Mitral regurgitation



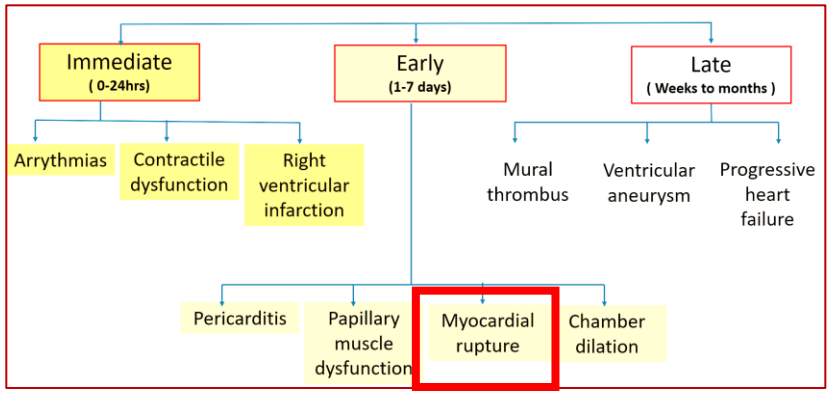
MYOCARDIAL RUPTURE

Only in 1-5% of MIs

MOSTLY FATAL!

Within 3- 7 days (wall is weakest)

- Ventricular free wall rupture
- Ventricular septal rupture
- Papillary muscle rupture



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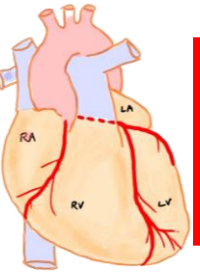
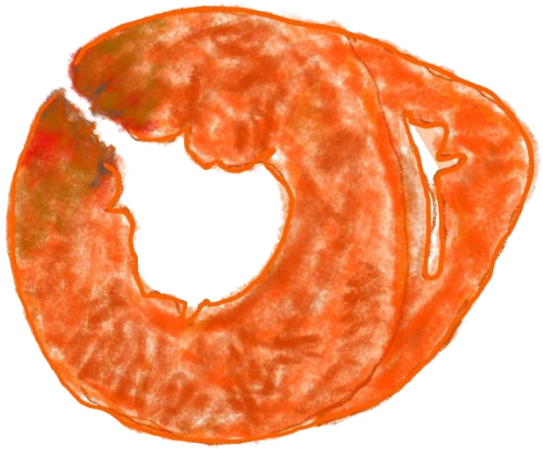
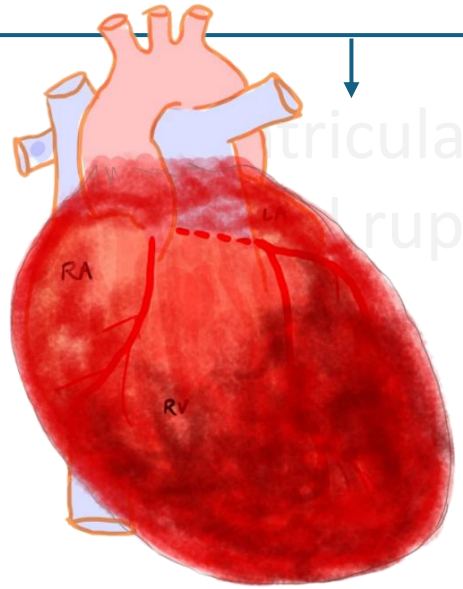


Ventricular free wall rupture

Most common





Hemopericardium & tamponade

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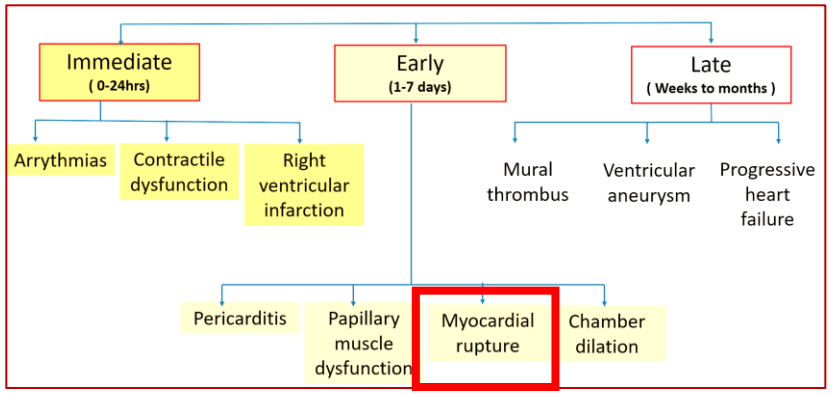
Death

ilovepathology.com

Risk factors

>60 Years,
Anterior Or Lateral Wall Infarctions,
Female Gender,
Lack Of Left Ventricular Hypertrophy & First MI



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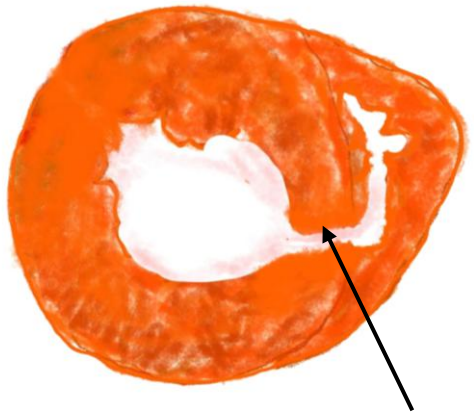
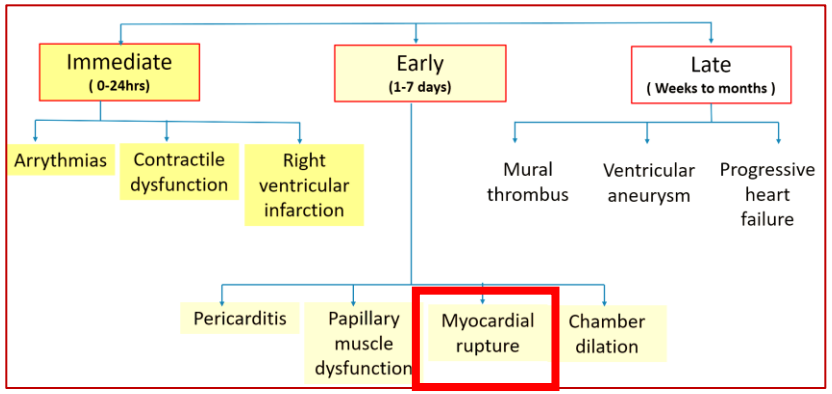


VSD with left-to-right shunting



MYOCARDIAL RUPTURE

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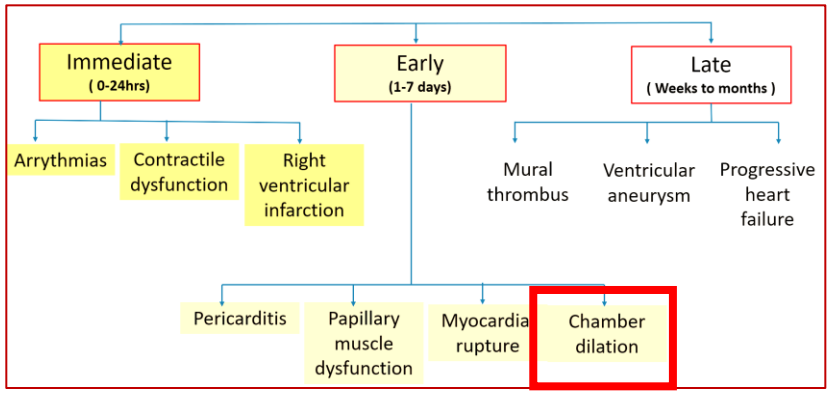
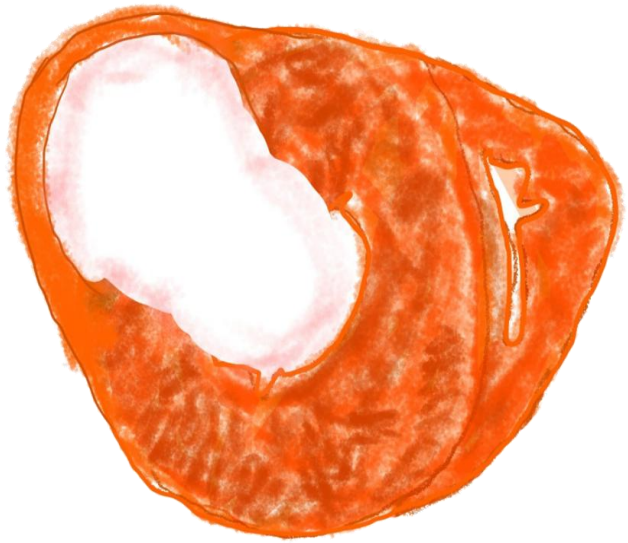
Papillary muscle rupture

Severe Mitral regurgitation



CHAMBER DILATATION



Weakening of necrotic muscle

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Disproportionate stretching

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Thinning

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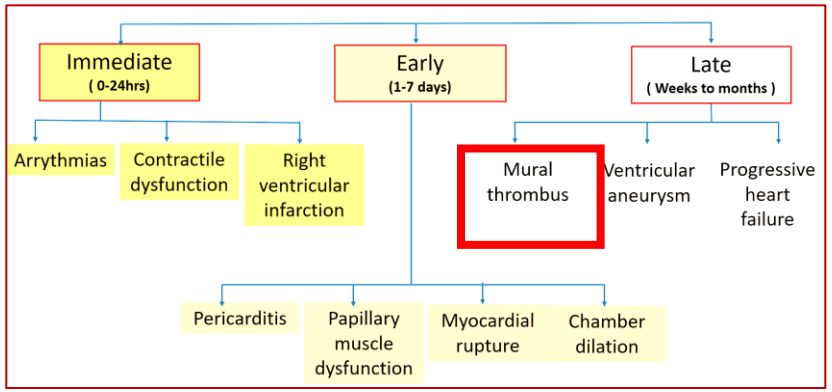
Dilatation of infarct region



MURAL THROMBUS

Occurs particularly often when the infarct involves the apex of the heart.

Inflammation of the endocardium lining an infarct

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Thrombogenic surface

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Promotes platelet adhesion and fibrin deposition.

Attenuated myocardial contractility

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Stasis

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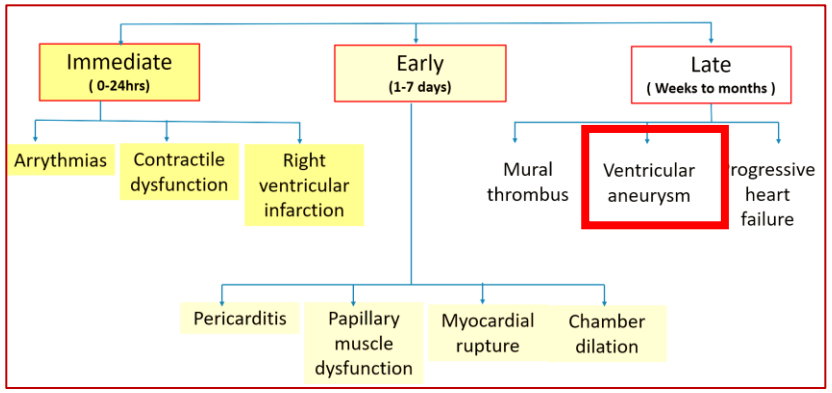
MURAL THROMBUS → Left sided thromboembolism



VENTRICULAR ANEURYSM

Complicate 10%–15% of transmural myocardial infarcts

large transmural anteroseptal infarct

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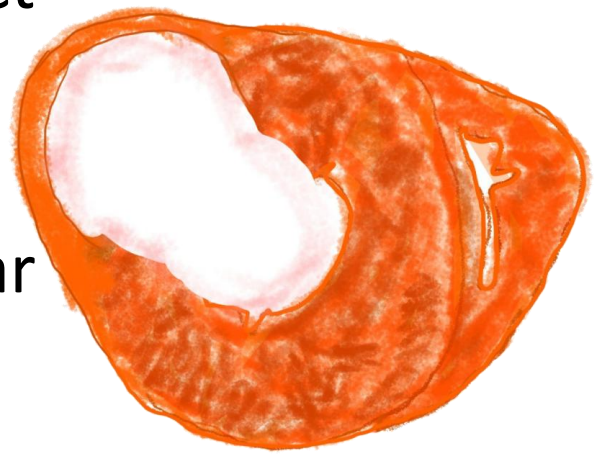
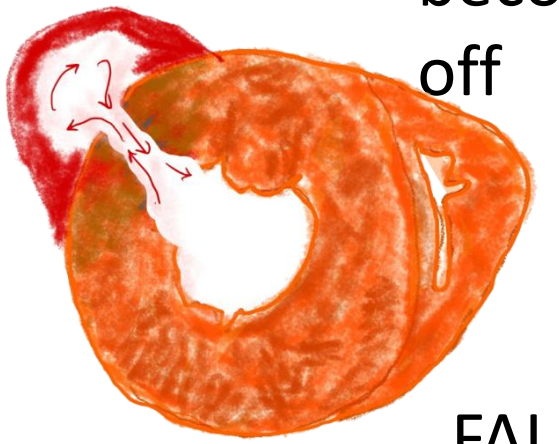
Heals !

thinned wall of scar tissue

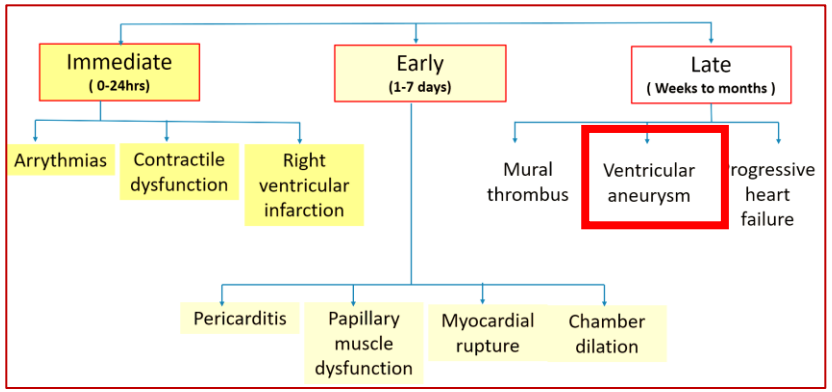
ANEURYSM (TRUE)



Rarely, a ruptured ventricle may become walled off



FALSE ANEURYSM



VENTRICULAR ANEURYSM

Complicate 10%–15% of transmural myocardial infarcts

In the periphery of the aneurysms

Increased chances of electrical current **reentry**

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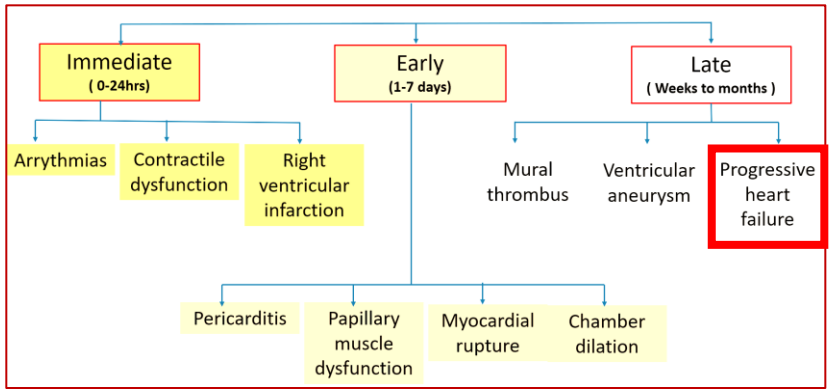
Ventricular tachycardia

The damaged heart muscle in and around the aneurysm can lead to ***irregular conduction of electrical impulses***



PROGRESSIVE HEART FAILURE

THANKS FOR WATCHING