

**Endocarditis**

**Pericarditis**

**Myocarditis**

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# Endocarditis

- Bacterial (septic) endocarditis - is severe general disease characterized by inflammation of the endocardium and ulceration of the heart valves in the presence of sepsis.
  - According to the course of the disease acute bacterial endocarditis and subacute bacterial endocarditis are distinguished.
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# Subacute bacterial endocarditis

## Etiology

- Bacterial endocarditis is usually caused by *Streptococcus viridans*, less frequently by enterococcus and *Staphylococcus albus* or *St. Aureus*.
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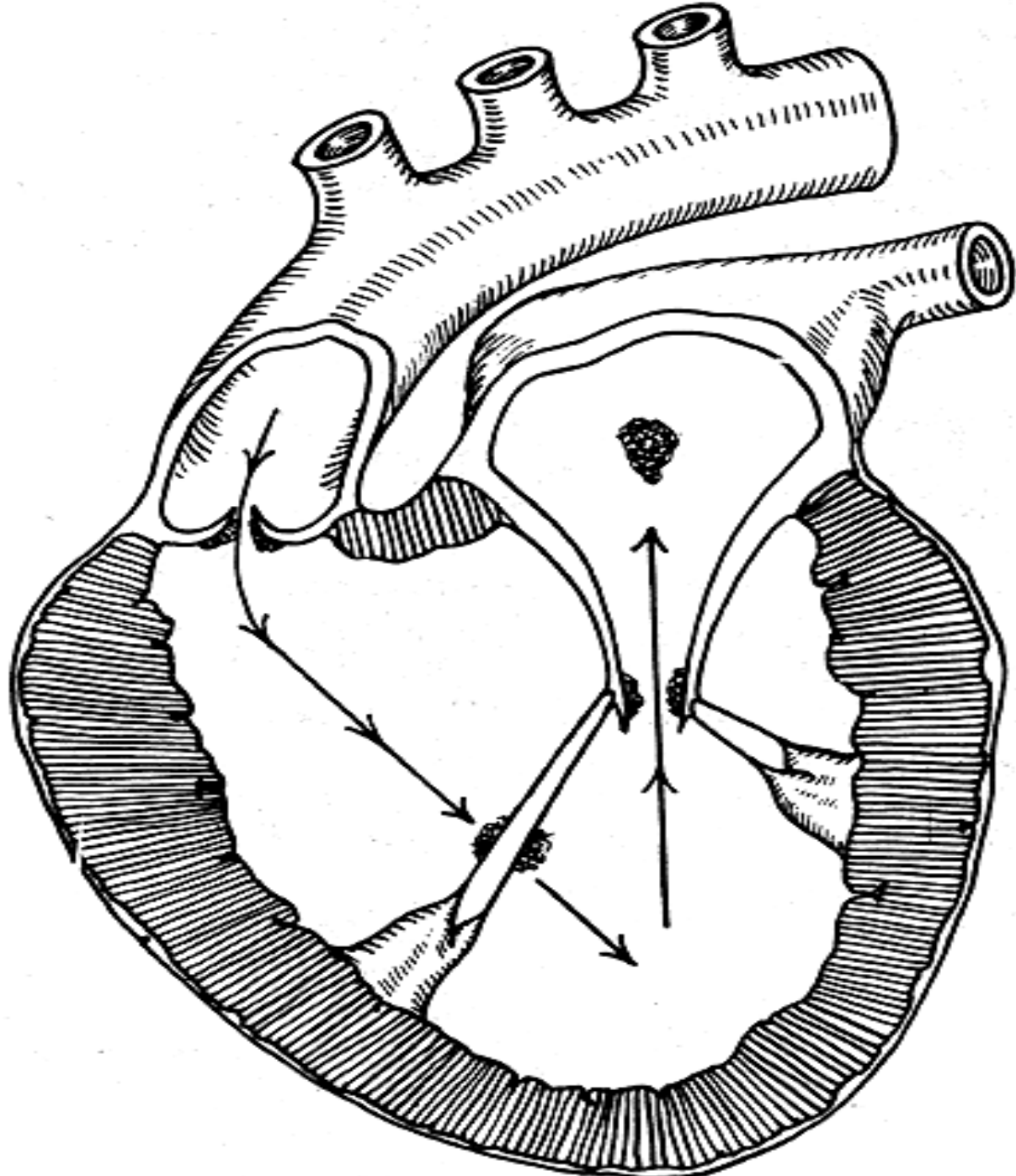


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## Clinical picture

The symptoms of the disease mainly depend on the degree of toxemia and bacteriemia.

- Complains are due to the presence of the following three syndromes:
    1. Intoxication syndrome
    2. Thrombembolytic syndrome
    3. Valve affection syndrome
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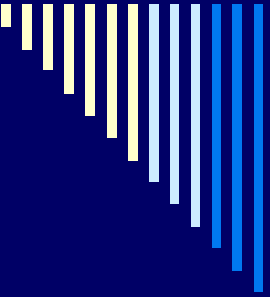


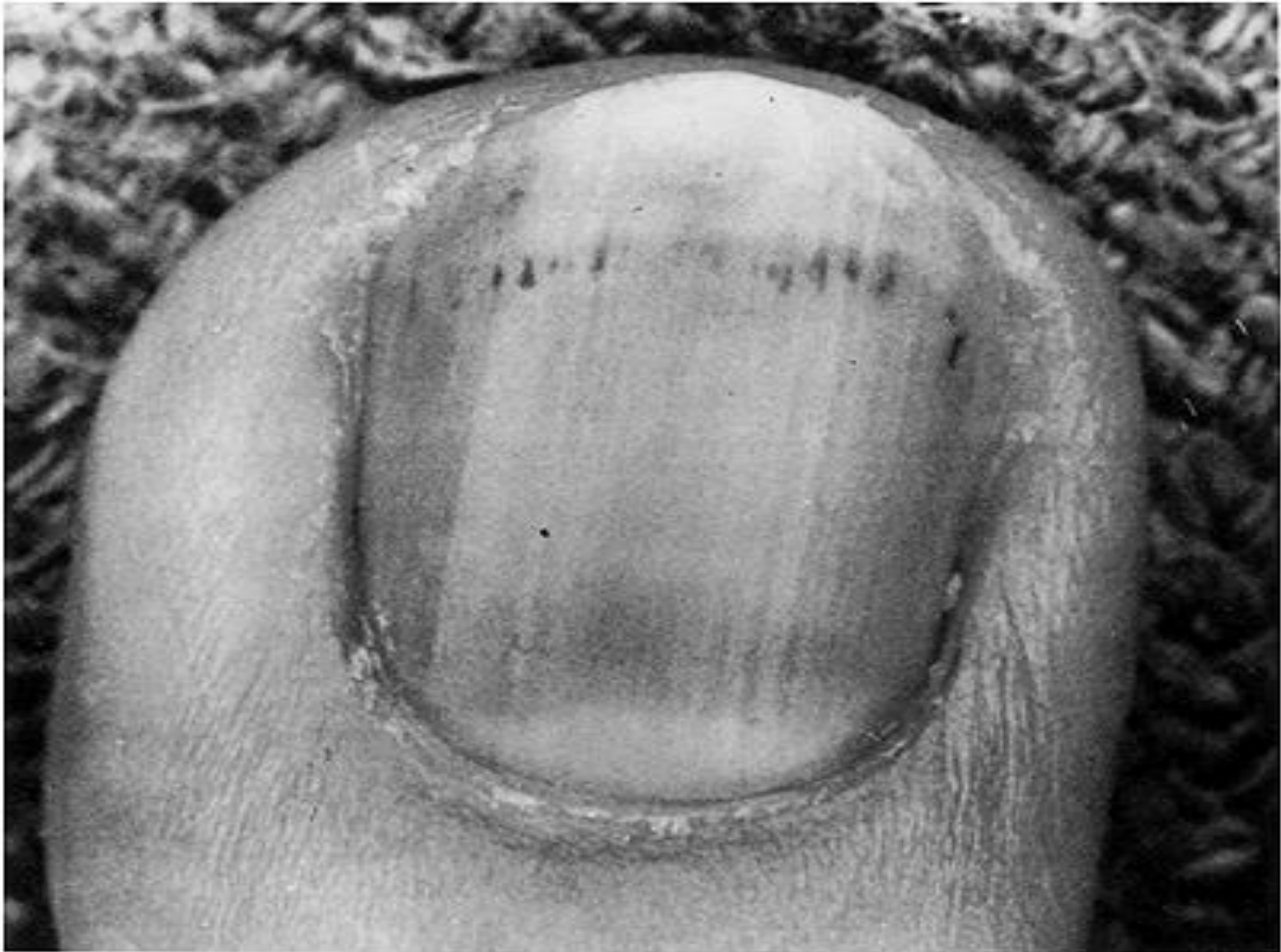


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## Main complains:

- - *fever (39°-40°C).*
  - - *Weakness, rapid fatigue, dispnoea*
  - - Chills and excess sweating.
  - - Pain in abdomen, in lumbar region
  - The skin and visible mucosa are pallid (anemia, aortic insufficiency).
  - Sometimes skin is yellow-gray (coffee-milk)
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- Small hemorrhages in the skin and mucosa of the mouth, on conjunctiva, eyelid folds, often affection of the joints.
  - In most cases the patient's fingers become clubbed, while the nails are flat like a watch glass.
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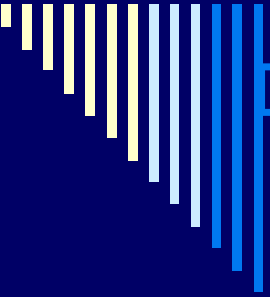


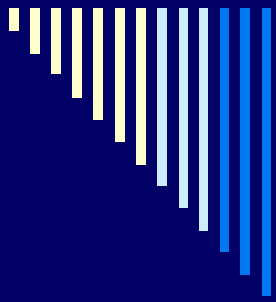


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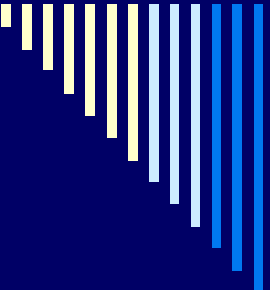
## Auscultation of the heart.

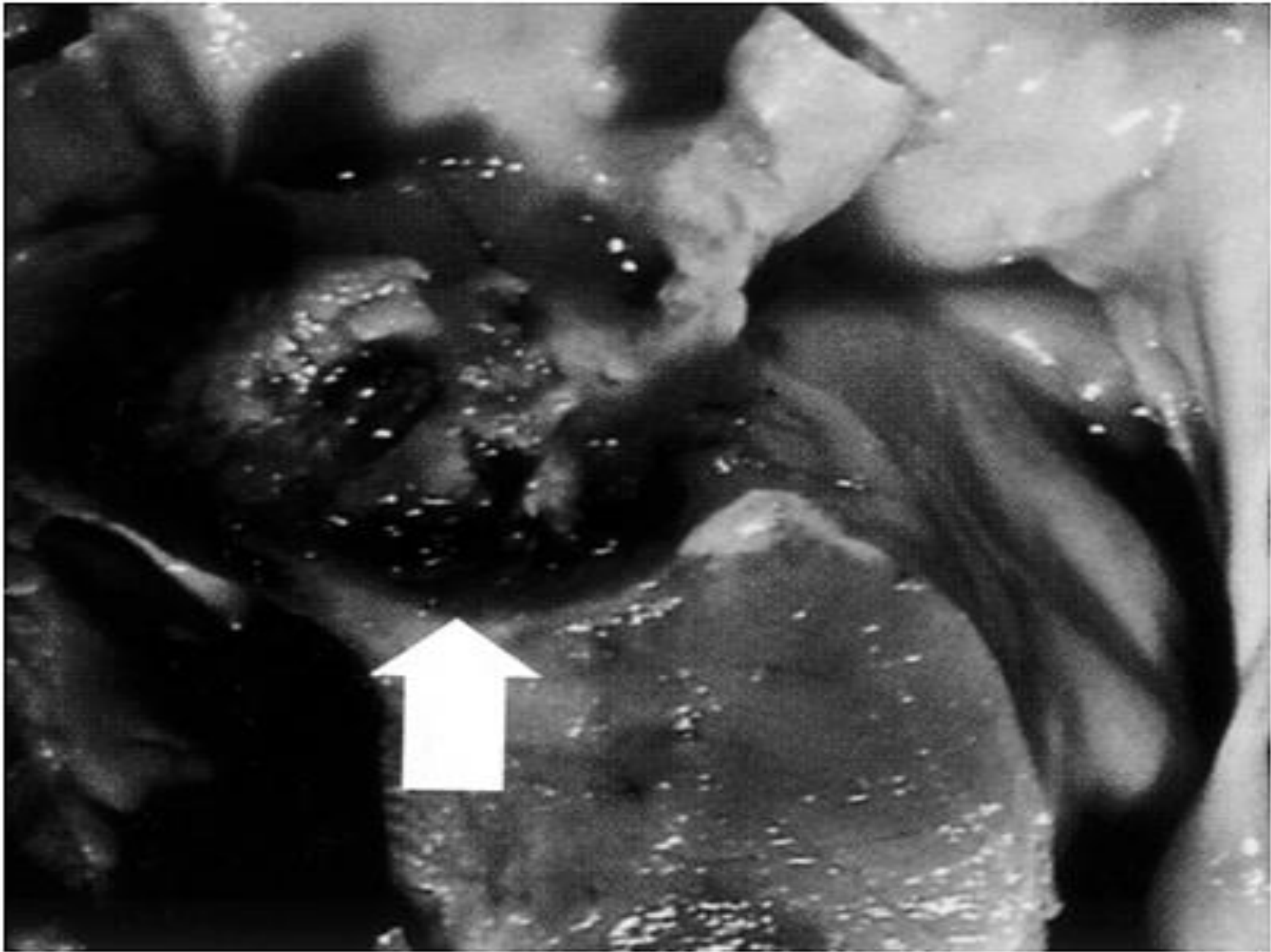
- Development of endocarditis is attended by the appearance of functional murmurs due to anemia and murmurs that are caused by changes in the affected valve.
  - Aortic valves are usually involved, and signs of aortic insufficiency therefore develop,
  - symptoms of mitral insufficiency develop in affections of the mitral valve.
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- Subacute bacterial endocarditis is characterized by embolism in the vessels of the spleen, kidneys or brain, followed by infarction of the involved organ.
  - The spleen is enlarged due to the response of the mesenchyma to the sepsis.
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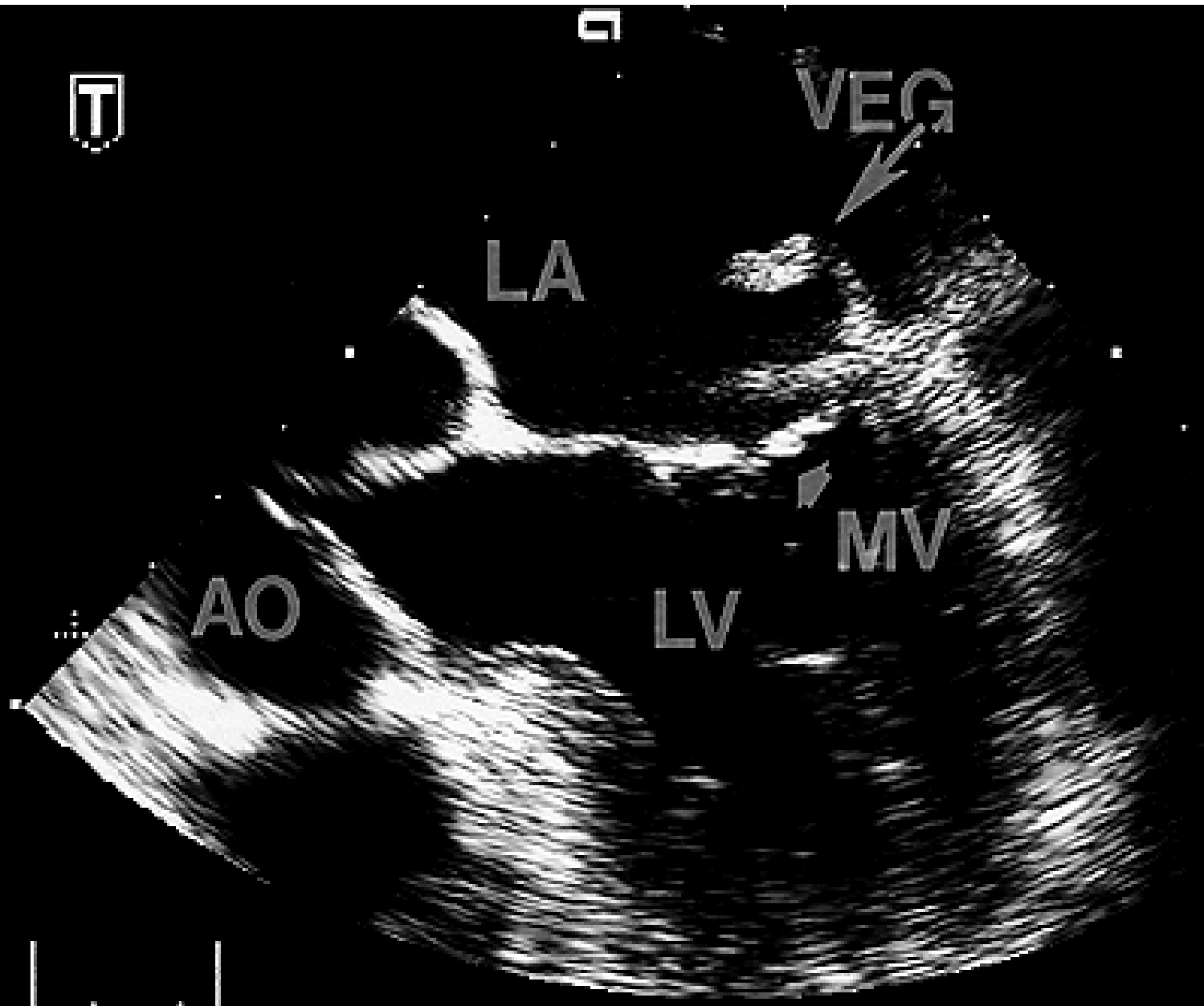


- Kidneys give picture of diffuse glomerulonephritis, less frequently focal glomerulonephritis (slight proteinuria and haematuria, insignificant cylindruria).

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- TBC : hypochromic anemia, increased ESR, leukocyte count varies, eosinophyl count decreases, tendency to monocytosis and histiocytosis.
  - Biochemical study : dysproteinemia.
  - Echocardiography : vegetation on the cusps of aortic valve (bacteria), less – mitral valve.
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DEPTH=  
UMMC  
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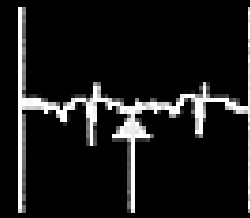
LA

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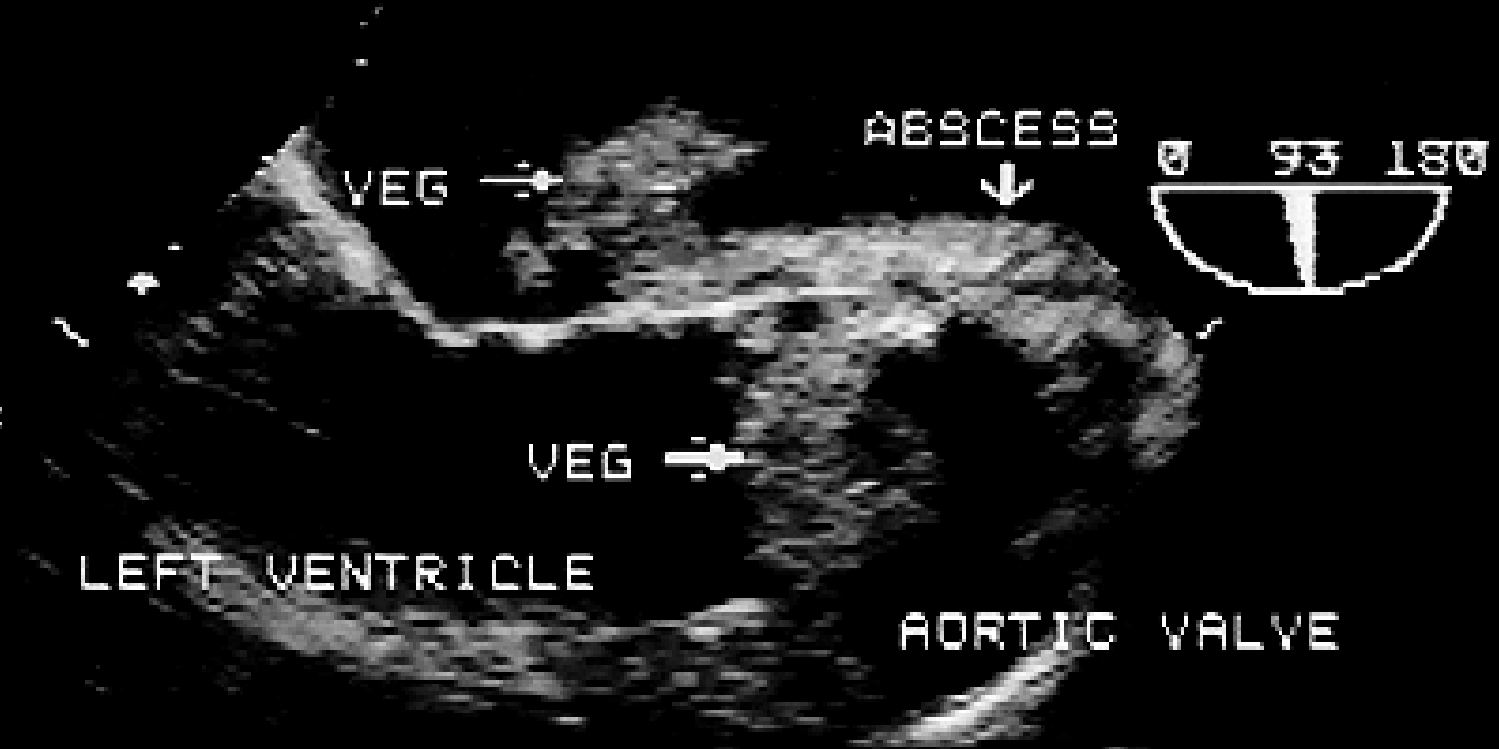
8.5  
/S. 0TZ  
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2/8/L  
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PAT T: 37.8C  
TEE T: 38.3C

LEFT ATRIUM

ADULT  
17

07:20  
AH, CD  
10:22.13  
84  
70  
PM





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# Myocarditis

- Myocarditis is inflammation of the myocardium.
  - Acute, subacute and chronic myocarditis are differentiated.
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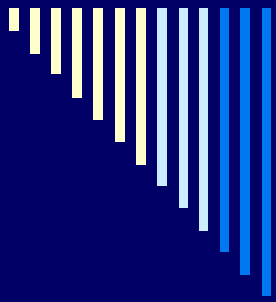


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# Etiology

The most common cause of myocarditis are:

- rheumatism,
  - sepsis,
  - diphtheria,
  - rickettsiosis,
  - carlet fever,
  - virus infections.
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The microbe antigen or its toxin acts on the myocardium and cause formation of tissue antigens in it, than an immune inflammation develops.

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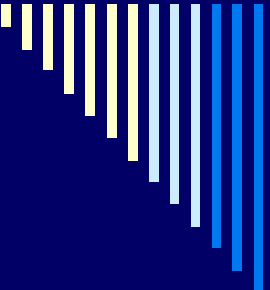


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# Clinical picture

## Complains:

- dyspnea in physical exertion,
  - extreme weakness,
  - palpitation,
  - dull and boring pain or attacks of pain in the heart (like in angina pectoris).
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- Skin is pallid with a slight cyanotic shade.
  - The neck veins become swollen
  - Pulse is small, soft, arrhythmic (extrasystole, paroxysmal fibrillation).
  - *Palpation* – decreased diffuse apex beat, displaced exteriorly (outwards).
  - *Percussion* – displacement of the heart to the left.
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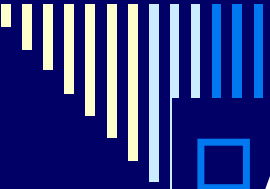


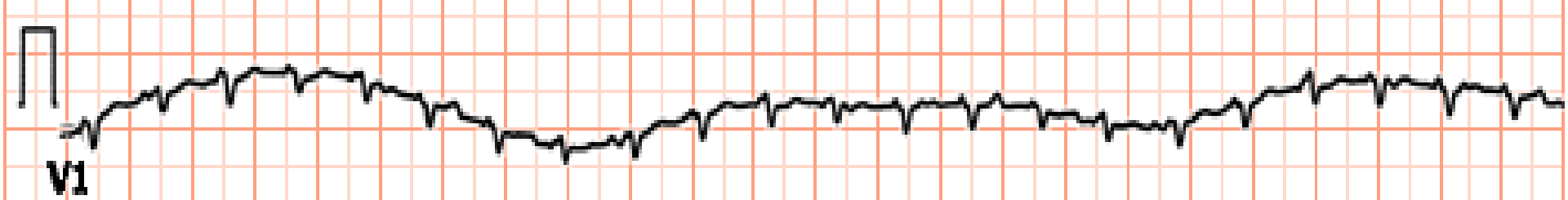
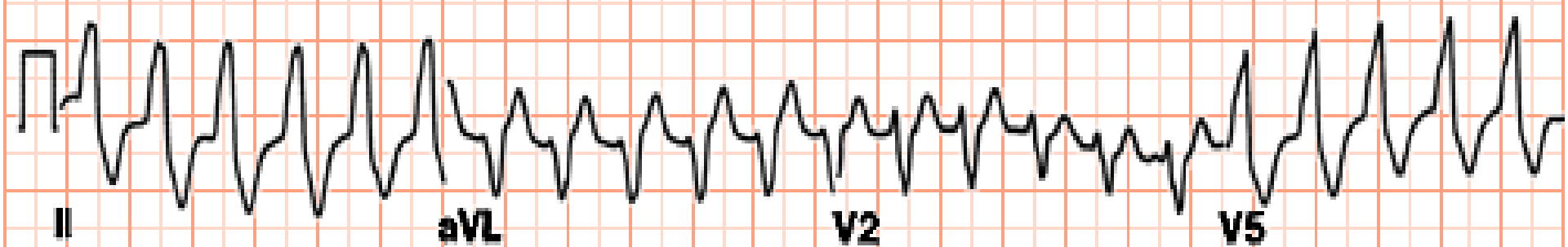
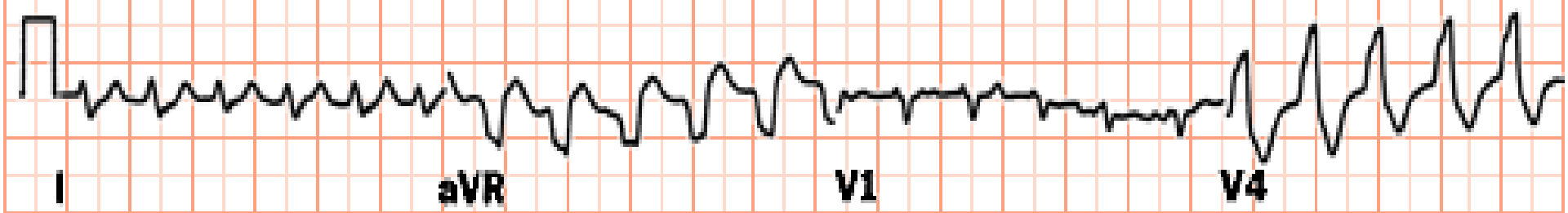
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# *Auscultation*

- decreased S1;
  - S2 unchanged or diminished,
  - gallop rhythm in decreased myocardial contractility (severe LV failure).
  - At the apex – systolic murmur (relative mitral insufficiency).
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- Arterial pressure (systolic) decreases.
  - *ECG* – sinus tachycardia, arrhythmia, extrasystole, diffuse affections of the myocardium – split and diminished R wave, changed QRS complex, decreased ST interval.
  - *Blood* – neutrophilic leucocytosis, increased ESR, hyperglobulinaemia.
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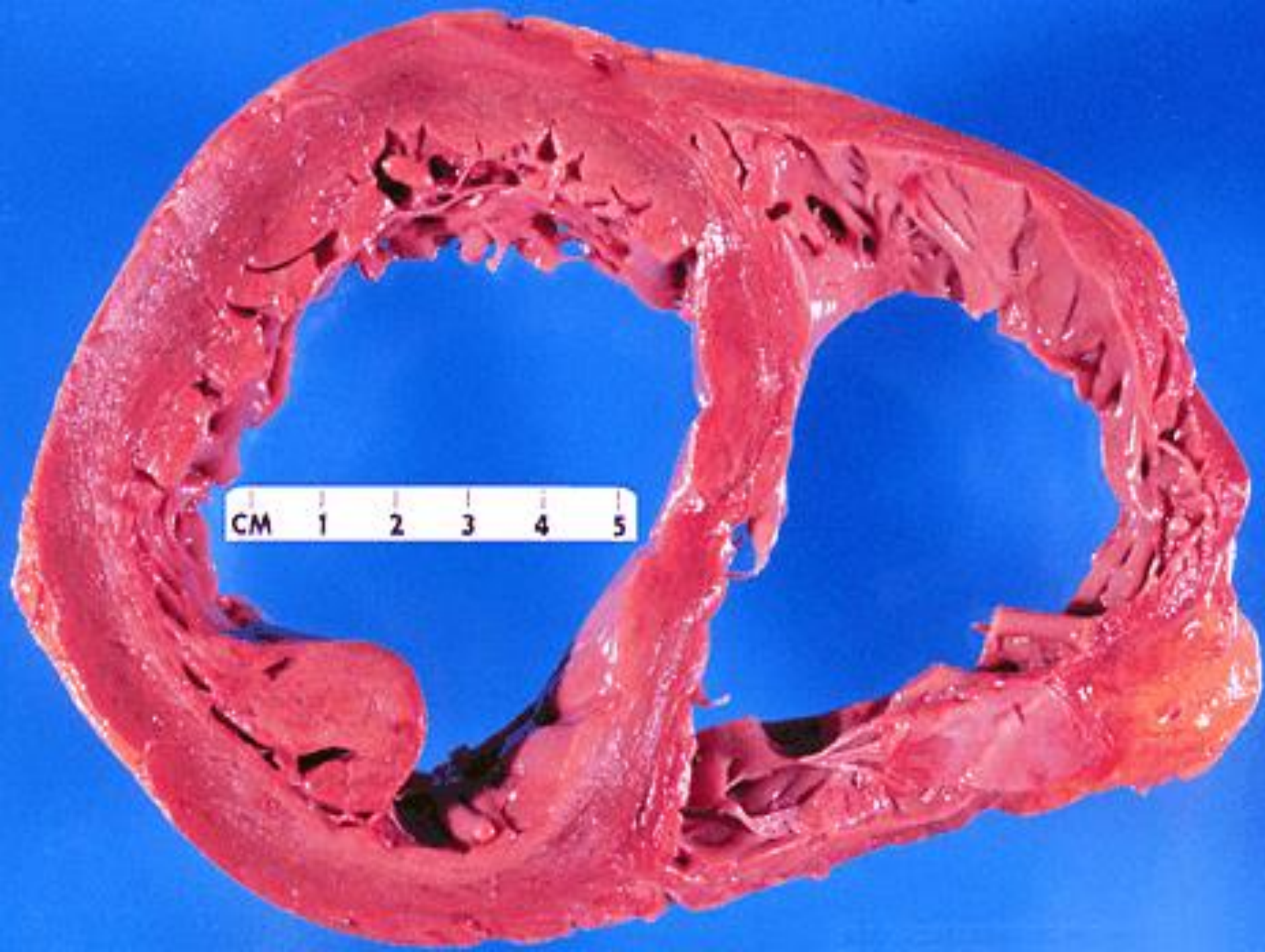


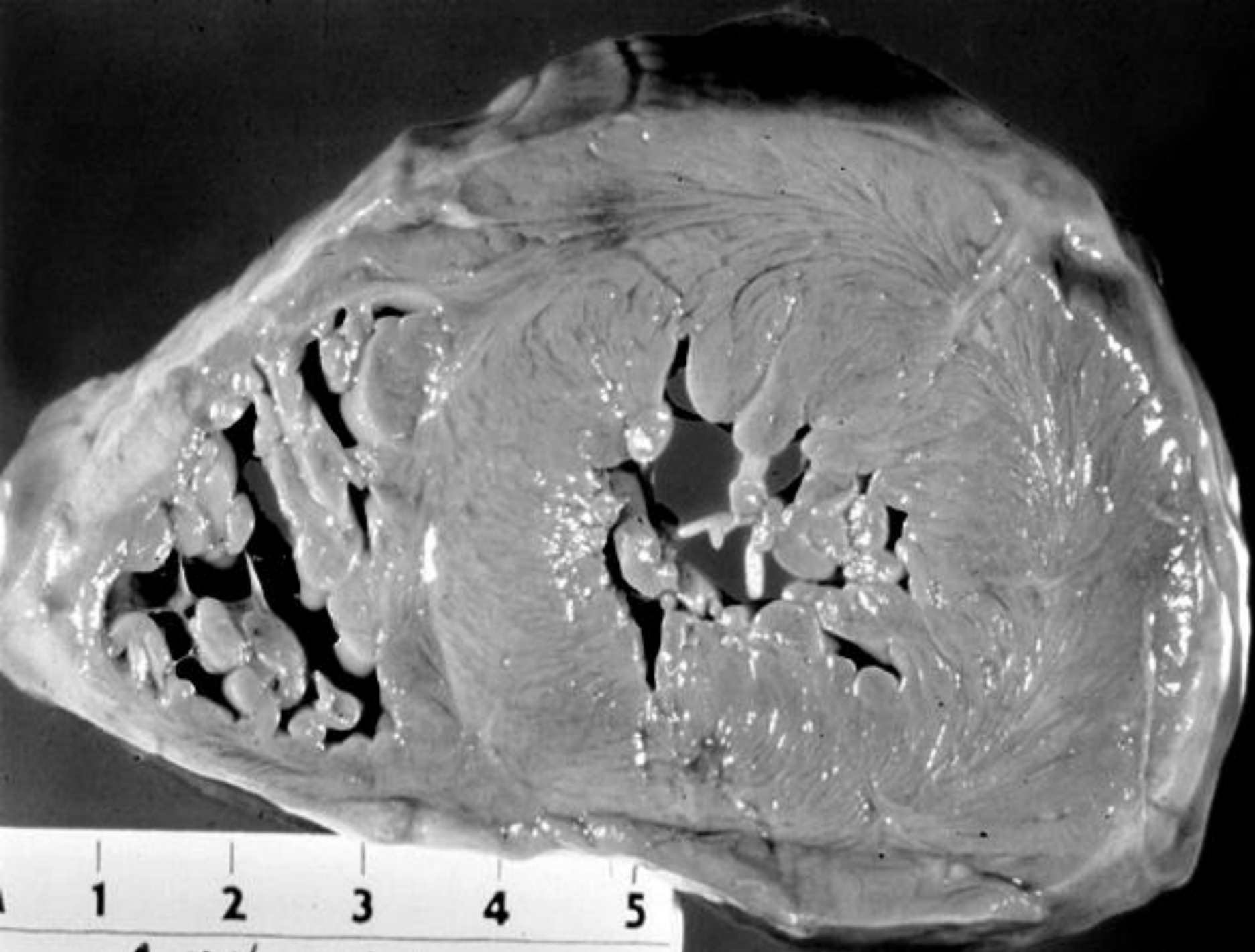
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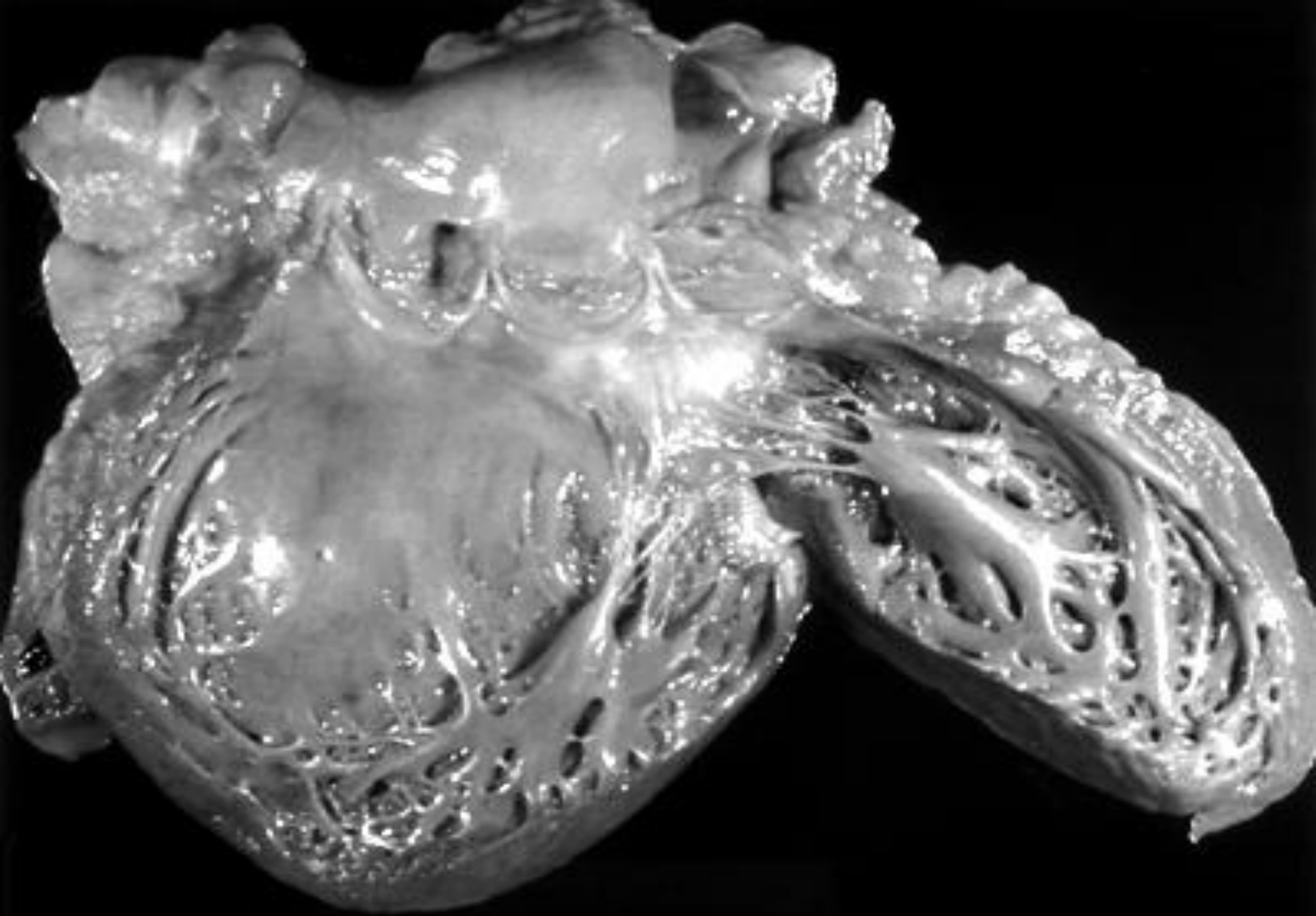
# Cardiomyopathy

- Dilatative
  - Hypertrophic
  - Restrictive
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# Pericarditis

## Pericarditis is inflammation of the pericardium

### Etiology

- In most cases pericarditis develops in the presence of rheumatism or tuberculosis.
  - Pericarditis can develop in other infections as well (scarlet fever, measles, influenza, cancer or sepsis).
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# Dry (fibrinous) pericarditis

- Chest Pain is often the only complaint of a patient with dry pericarditis
  - The pain varies in character from discomfort and pressure to strong torturing pain with radiation to the left part of the neck and the shoulder blade
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# Auscultation

- The most important, and sometimes the only sign of dry pericarditis is the sound of **pericardial friction**
  - Dry pericarditis ends with complete recovery in 2-3 weeks or may convert into
    - pericarditis with effusion**
    - or adhesive pericarditis**
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# Pericarditis with effusion

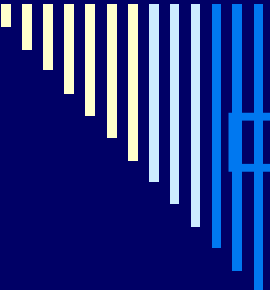
- Patients complain of the pressing sensation in the chest and pain in the heart. As effusion is accumulated, dyspnoea develops and the pain diminishes.
  - Dysphagia develops in compression of the oesophagus and hiccup when the phrenic nerve is compressed.
  - Fever is an almost obligatory symptom.
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# Objective examination

- The face is oedematous and the skin is cyanotic and pallid.
  - The neck veins are swollen.  
Compression of these veins accounts for the oedematous appearance of the face, neck, and the anterior surface of the chest (Stokes collar).
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- If much exudates is collected in pericardial sac, the patient assumes a characteristic posture: he sits in bed and inclines forward, his hands resting against the pillow lying on his knees. (prayer position)
  - The feeling of heaviness in the heart is thus lessened and respiration made easier.
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## Inspection of the heart region

- - reveals leveling of the interspaces
- - The apex beat is absent

**Percussion** shows considerable enlargement of cardiac dullness in all directions

## Auscultation

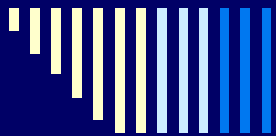
- - Heart sounds are markedly decreased

The pulse is small, accelerated, paradoxical

Arterial pressure is normal or decreased

**Liver** is enlarged.

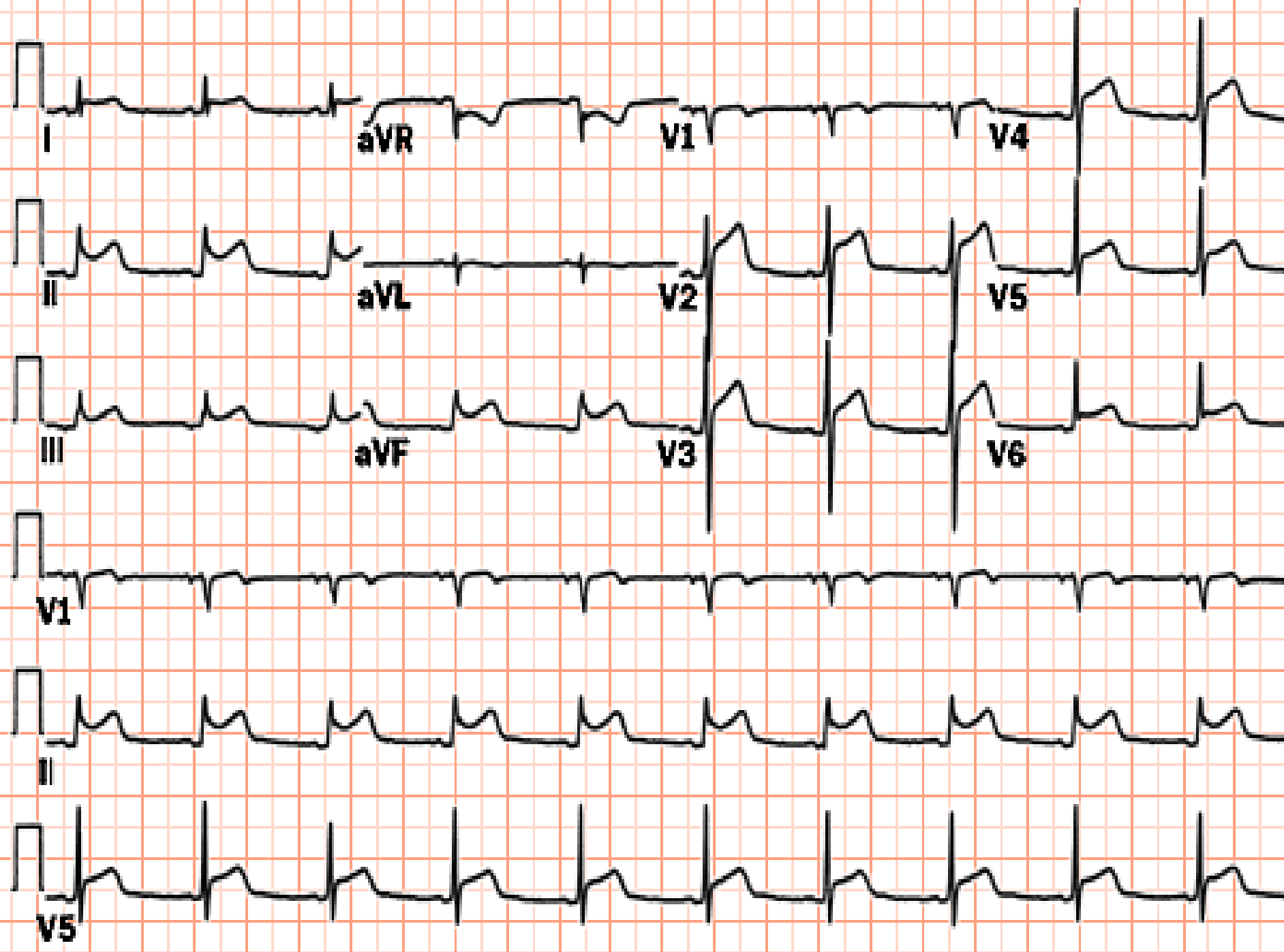
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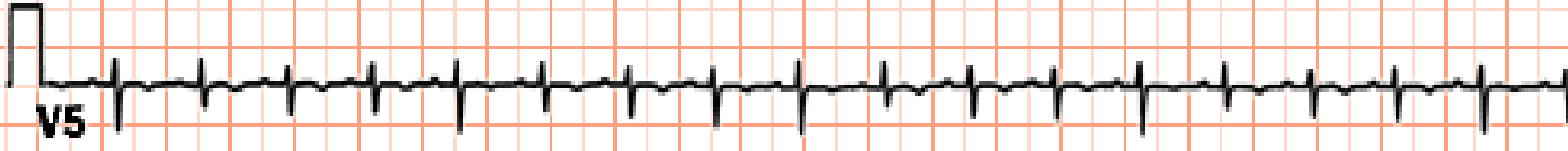
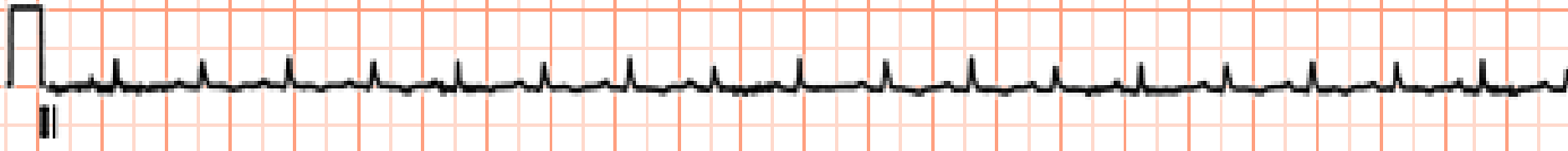
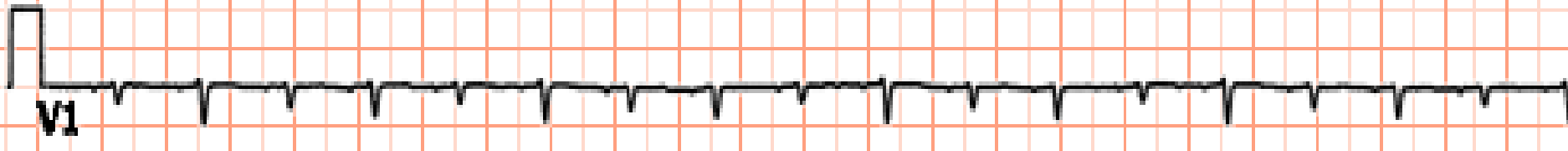
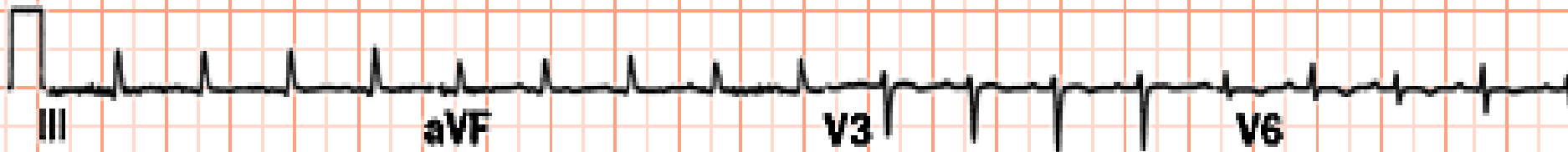
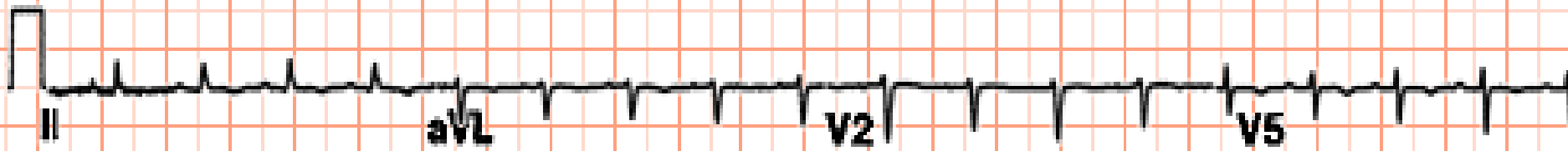
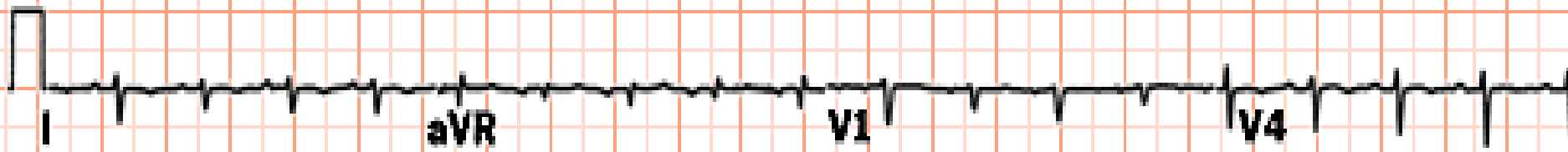


# Lab exams

## ECG

- ❑ low voltage of all the waves,
- ❑ ST interval first located above isoelectrical line and then is coming back to it.
- ❑ The picture looks like myocardial infarction, but all the pathological changes are equally pronounced in all leads and Q remains unchanged (**no necrosis** – no pathological Q wave).









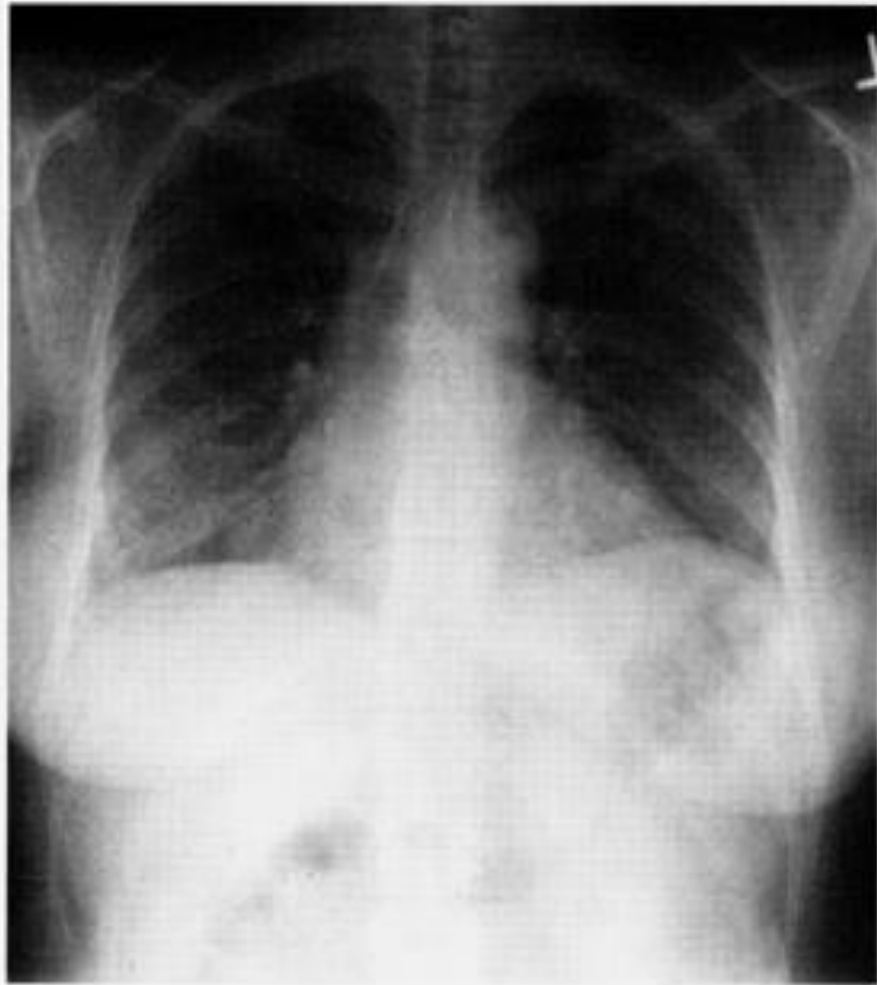
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# Echocardiography

- – reveals the space between pericardium and endocardium which is filled with effusion.

**X-ray study** – enlarged heart silhouette in the traverse direction.

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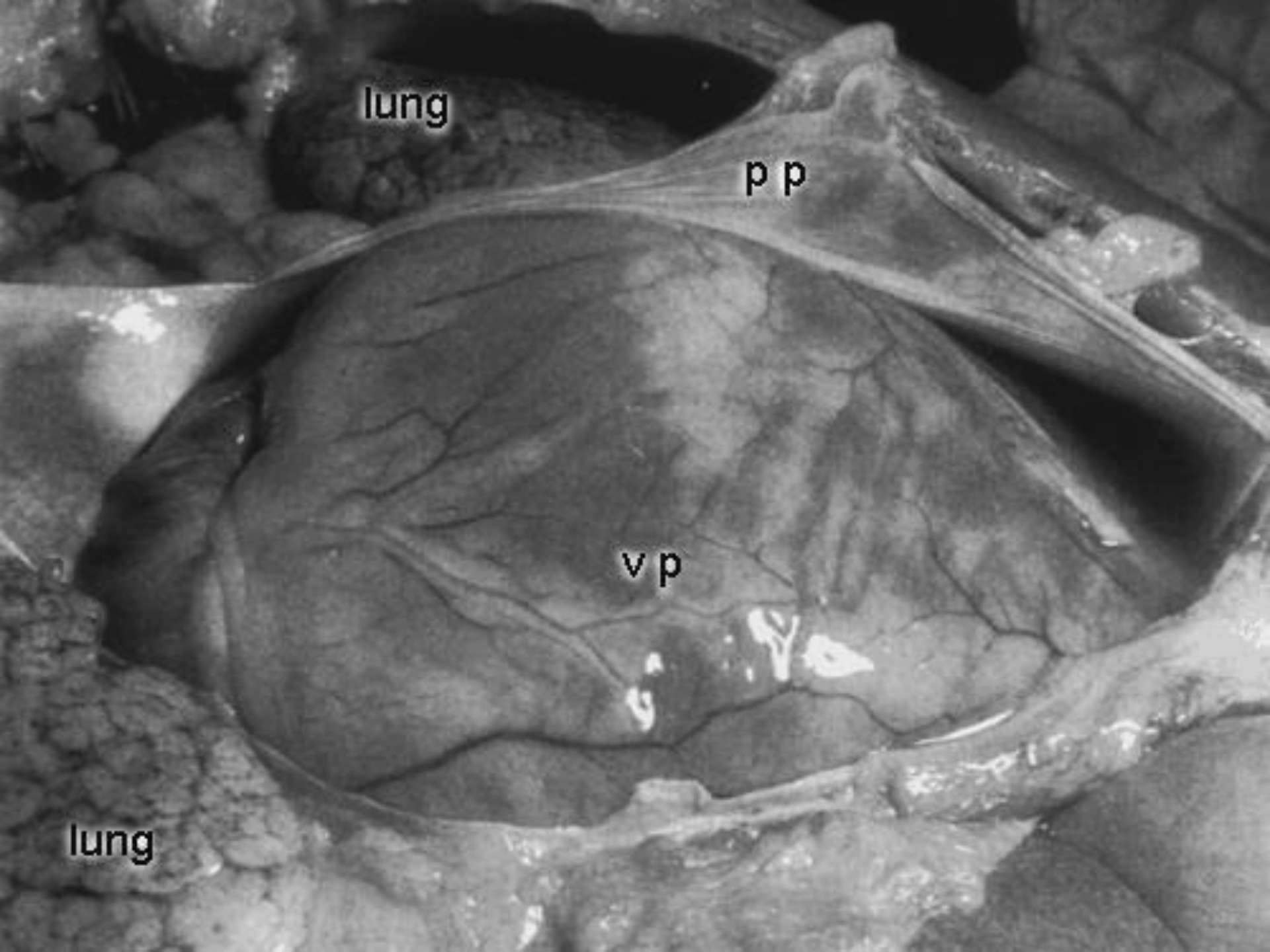


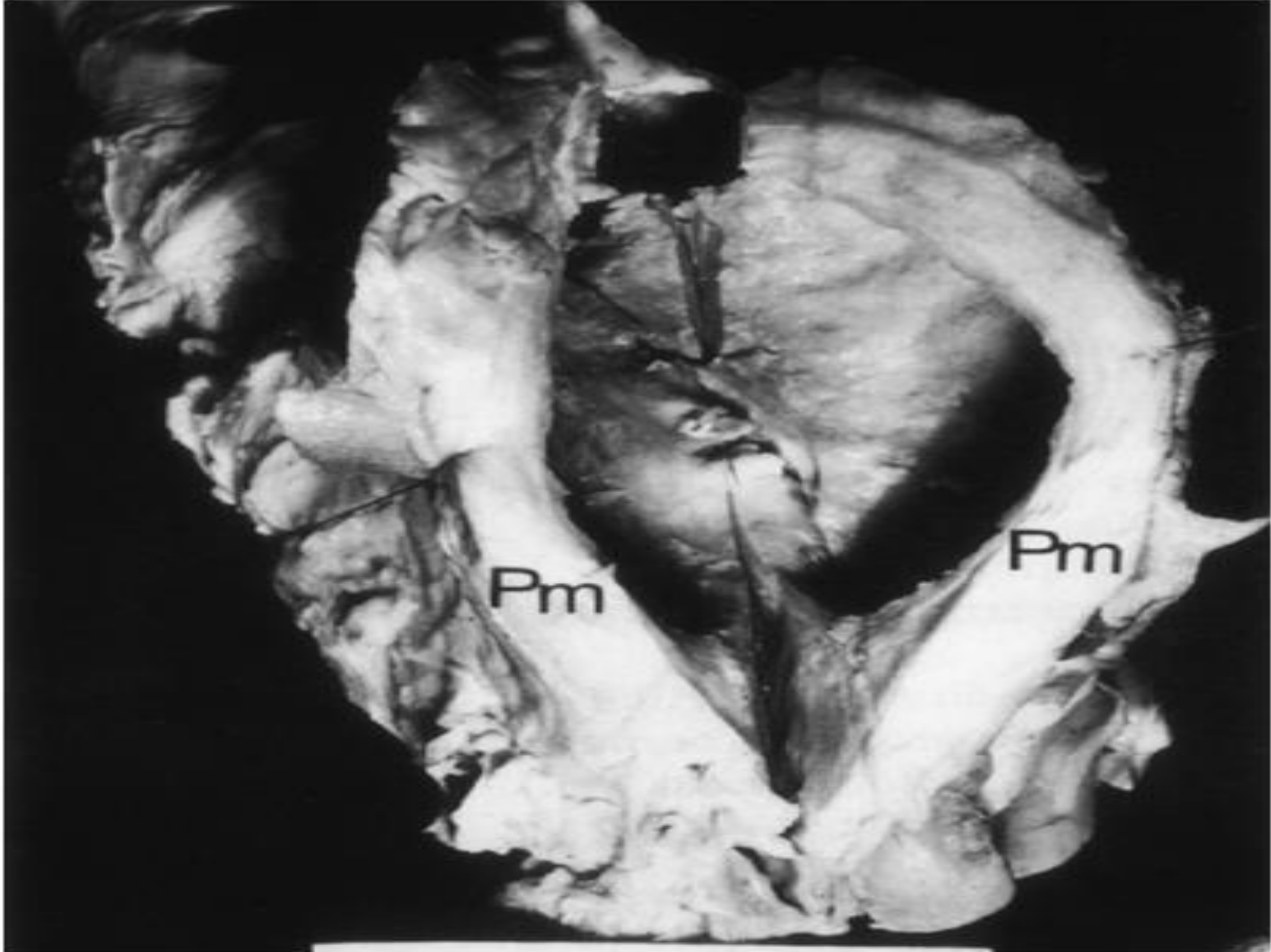
lung

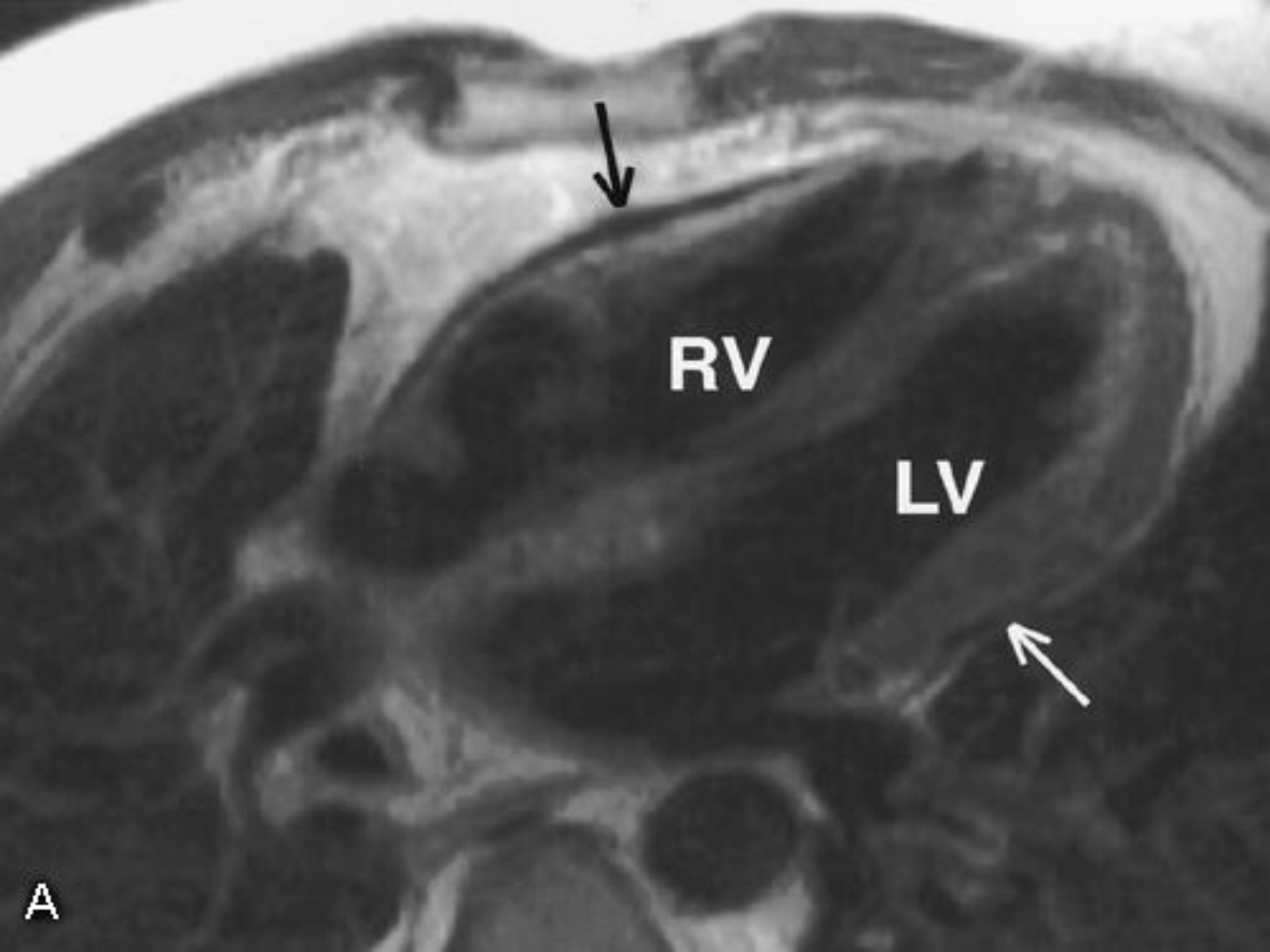
p p

v p

lung



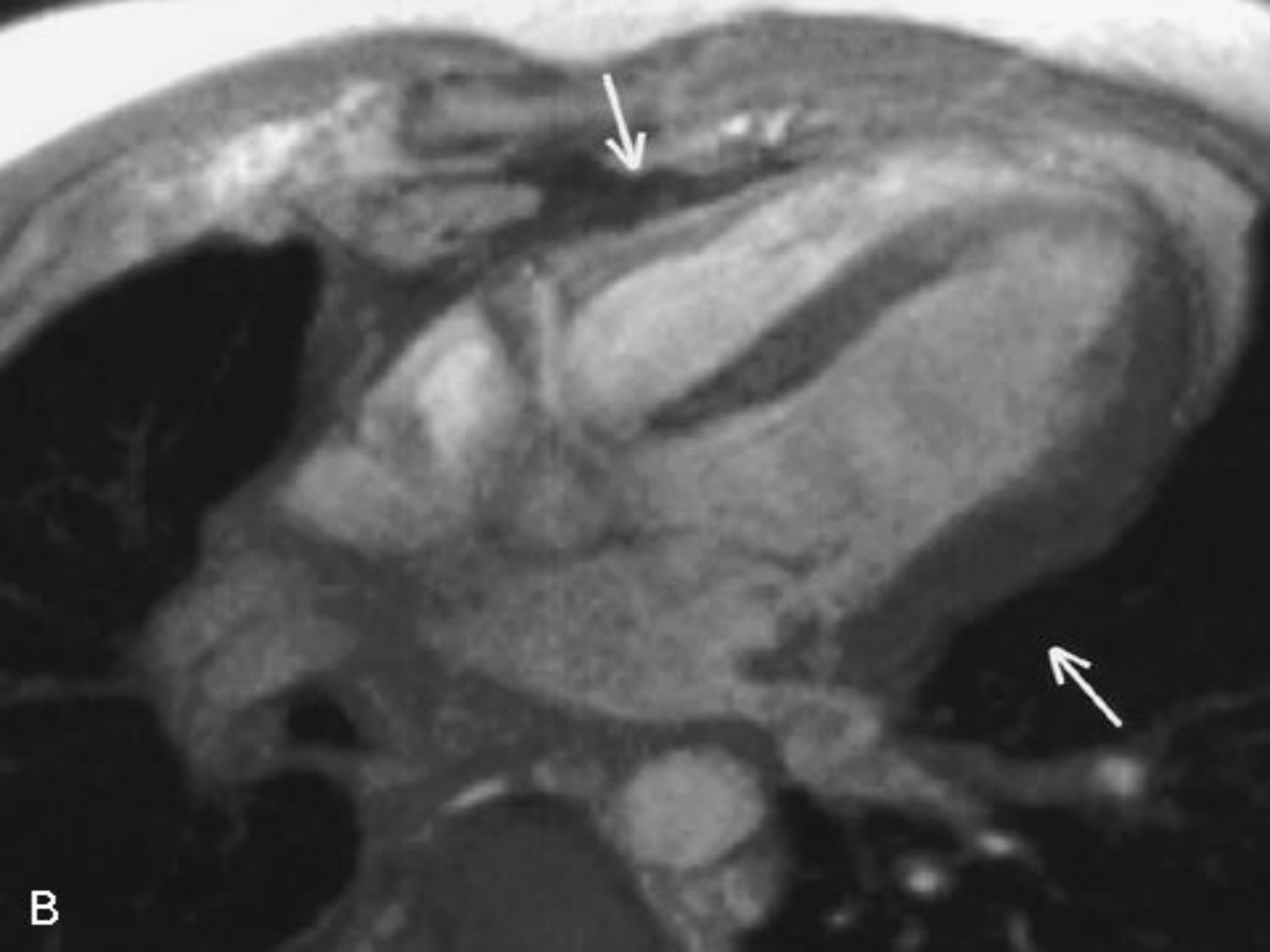




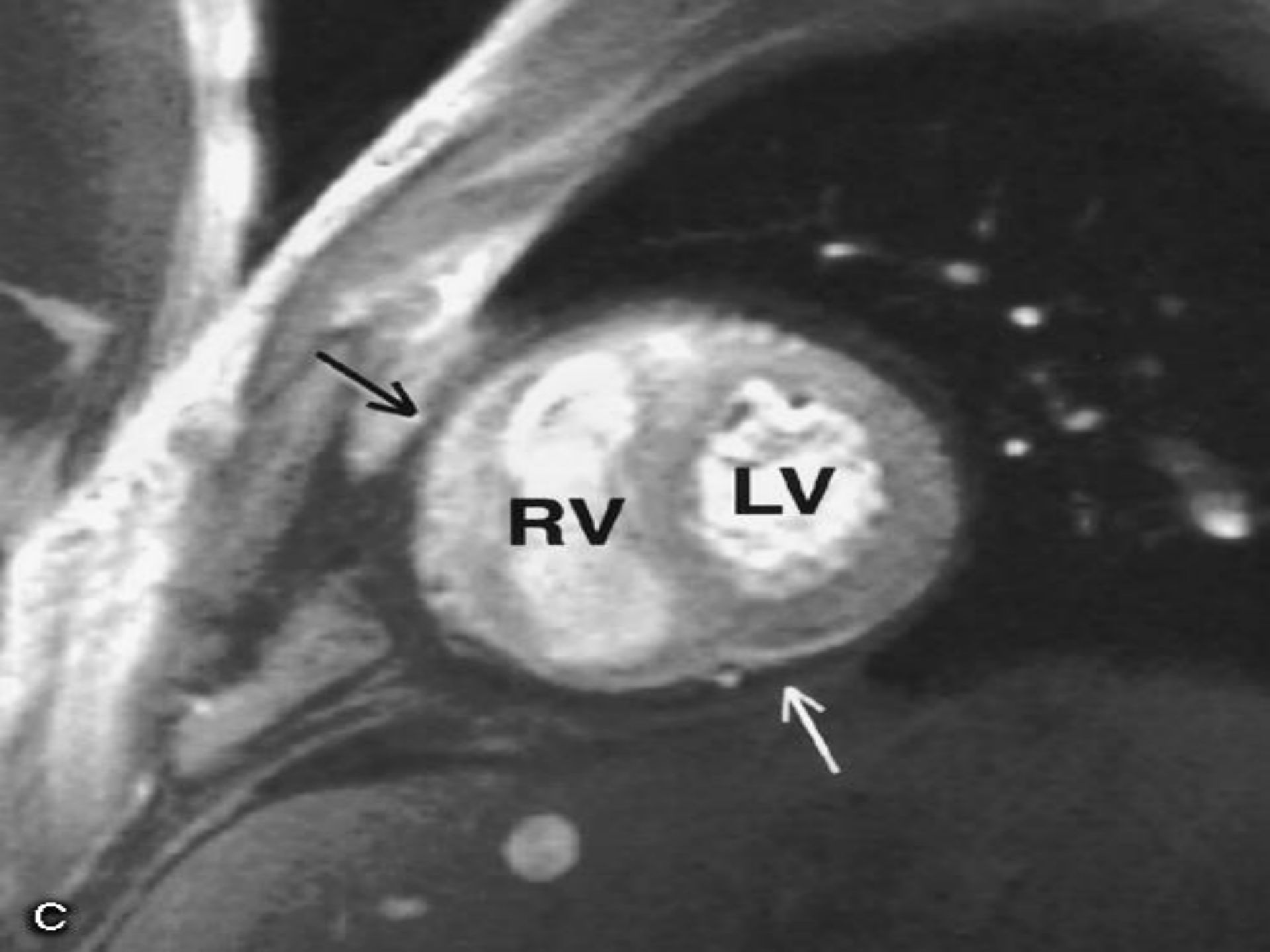
RV

LV

A



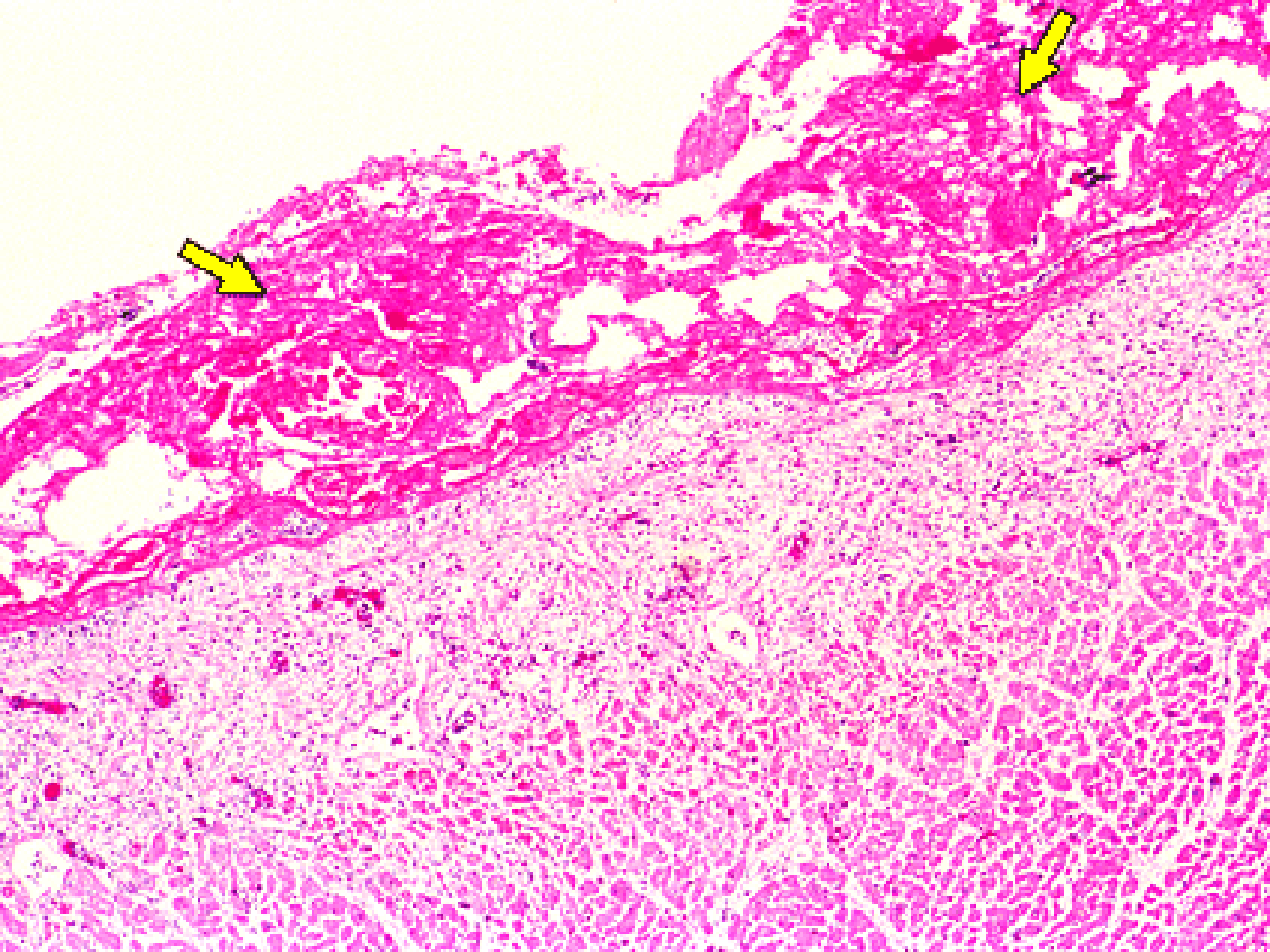
B



**RV**

**LV**

C





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# COMPLACATIONS

- One of severe complication is  
Tamponade
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