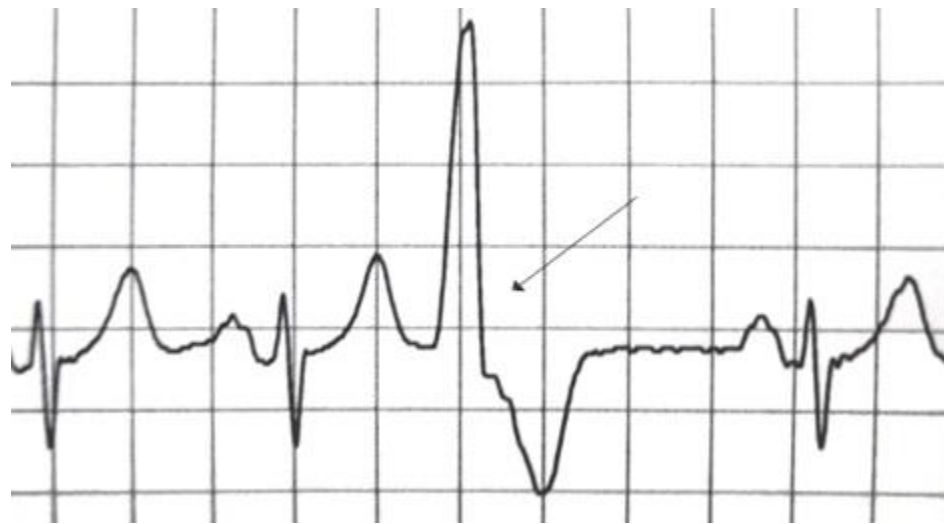
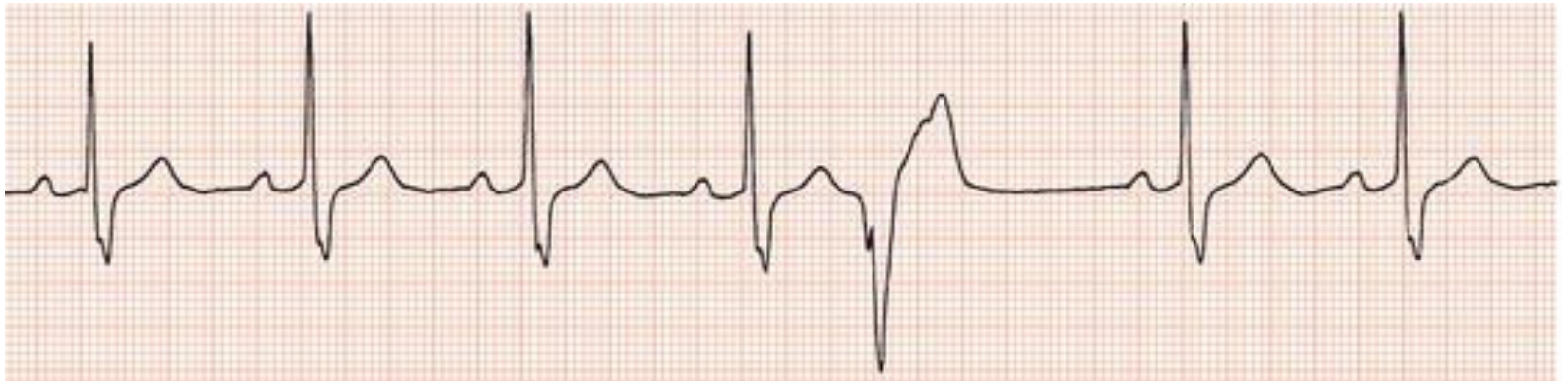


# Extrasystole



# Экстрасистолия

- a prematurely occurring beat of one of the chambers of the heart that leads to momentary arrhythmia but leaves the fundamental rhythm unchanged

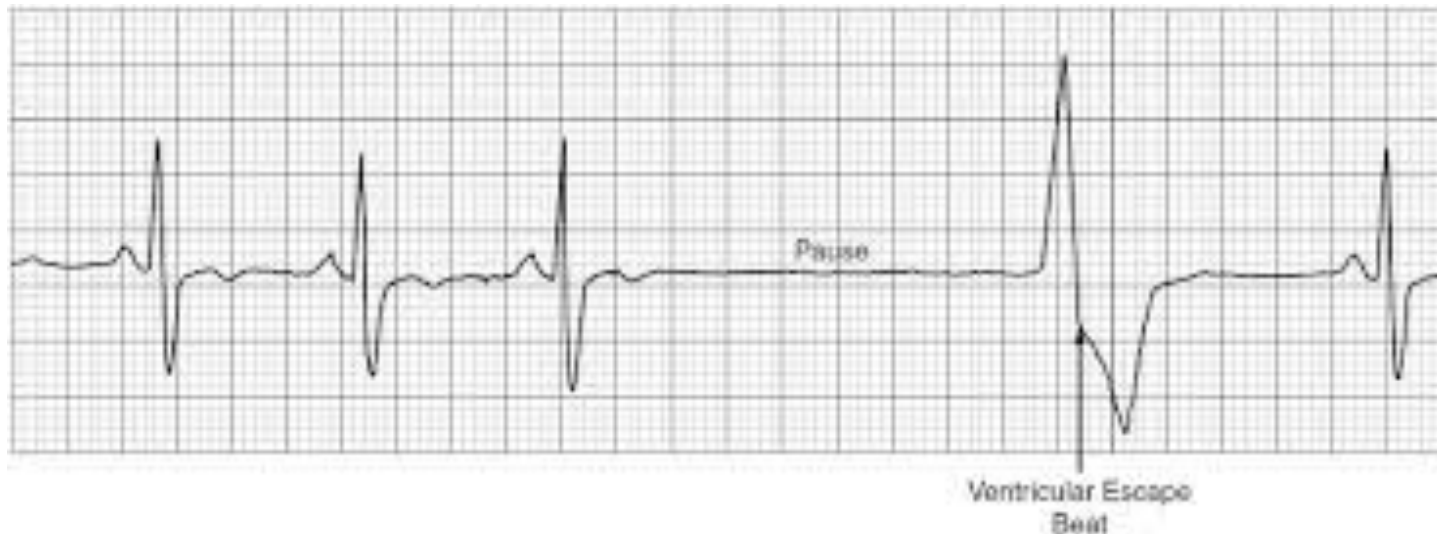


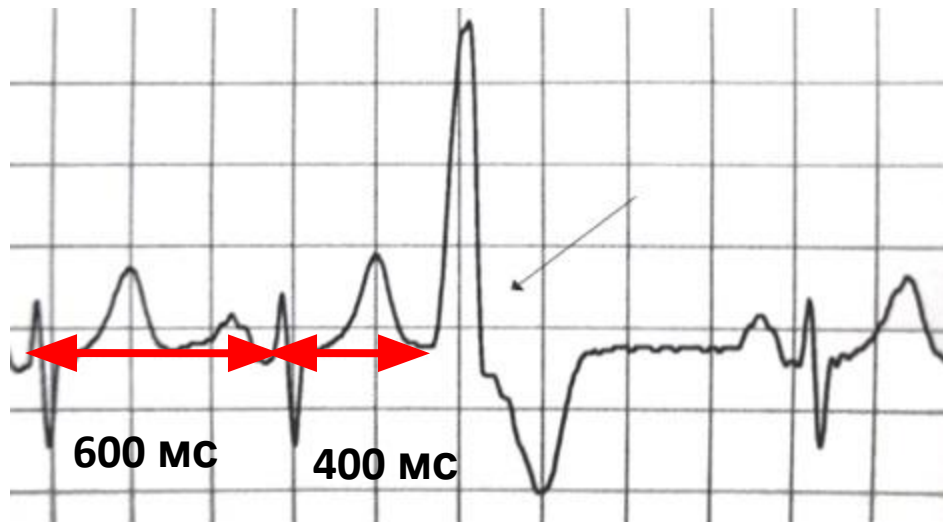
Extrasystole is a special case of ectopic beats.

Ectopic beat is myocardial excitation of non-sinus origin.

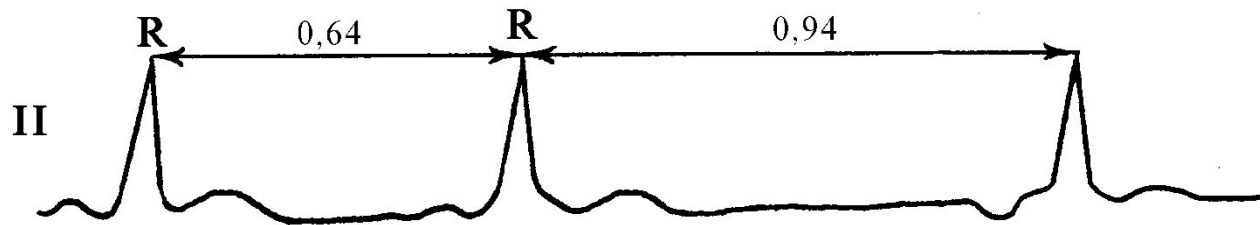
Premature ectopic beat - extrasystole (active rhythm disturbances)

Late ectopic beat is a replacement complex that saves from asystole – escape beat (passive)



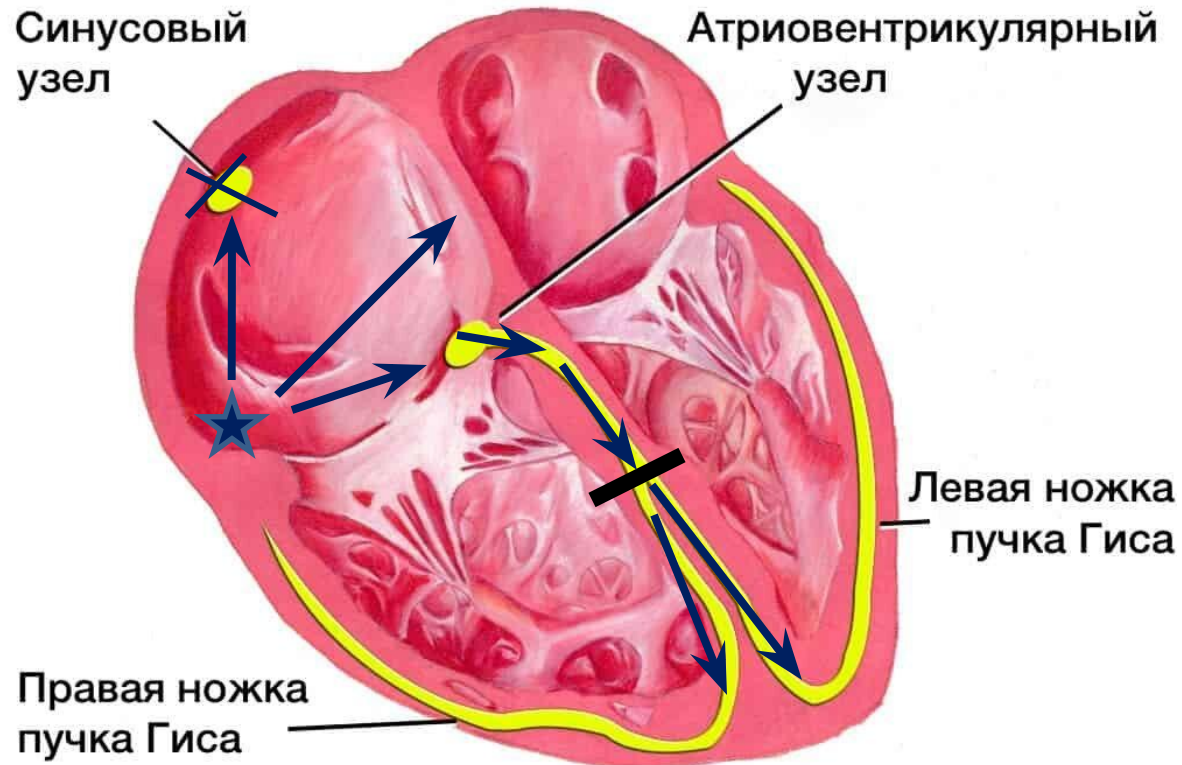


Ventricular extrasystole

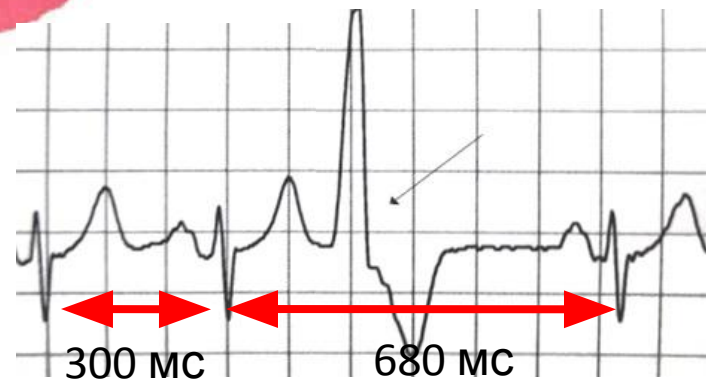
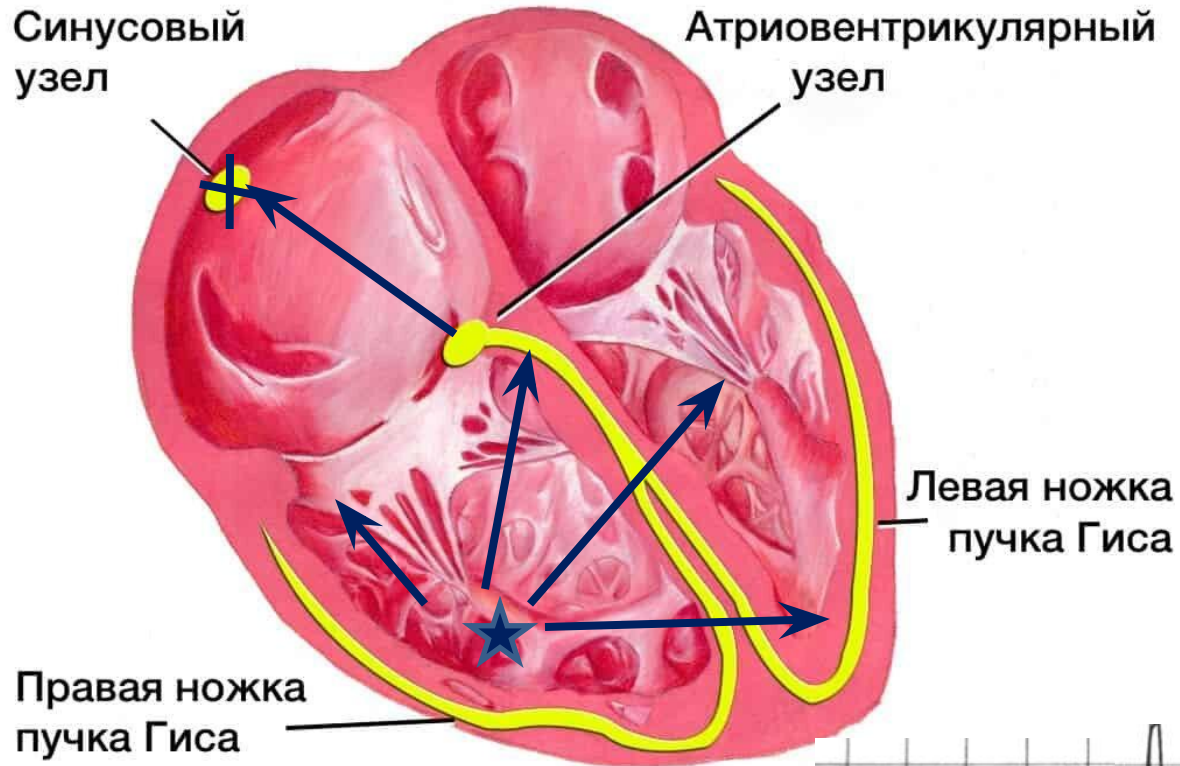


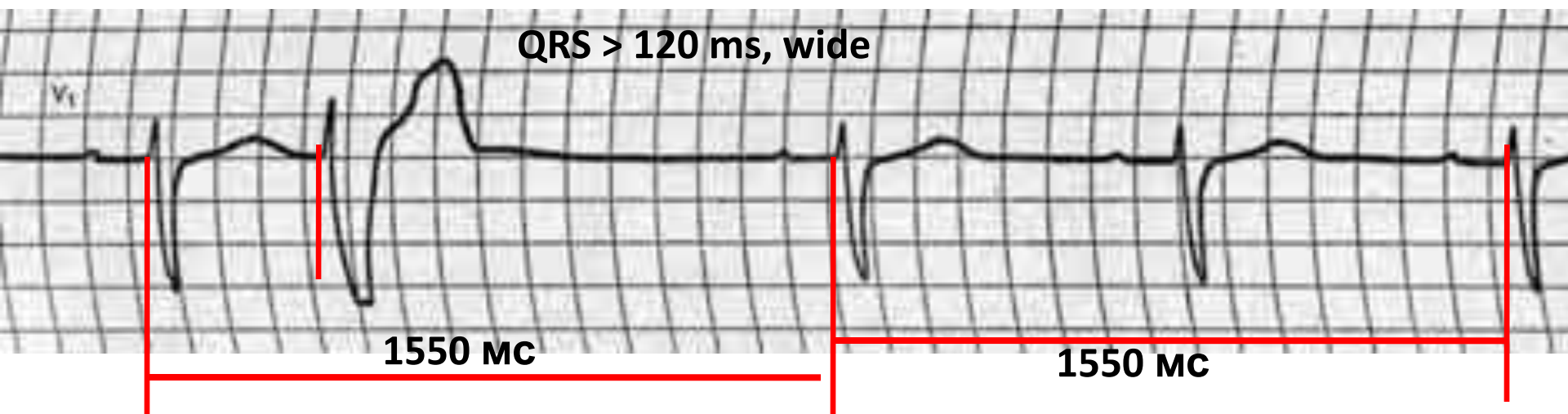
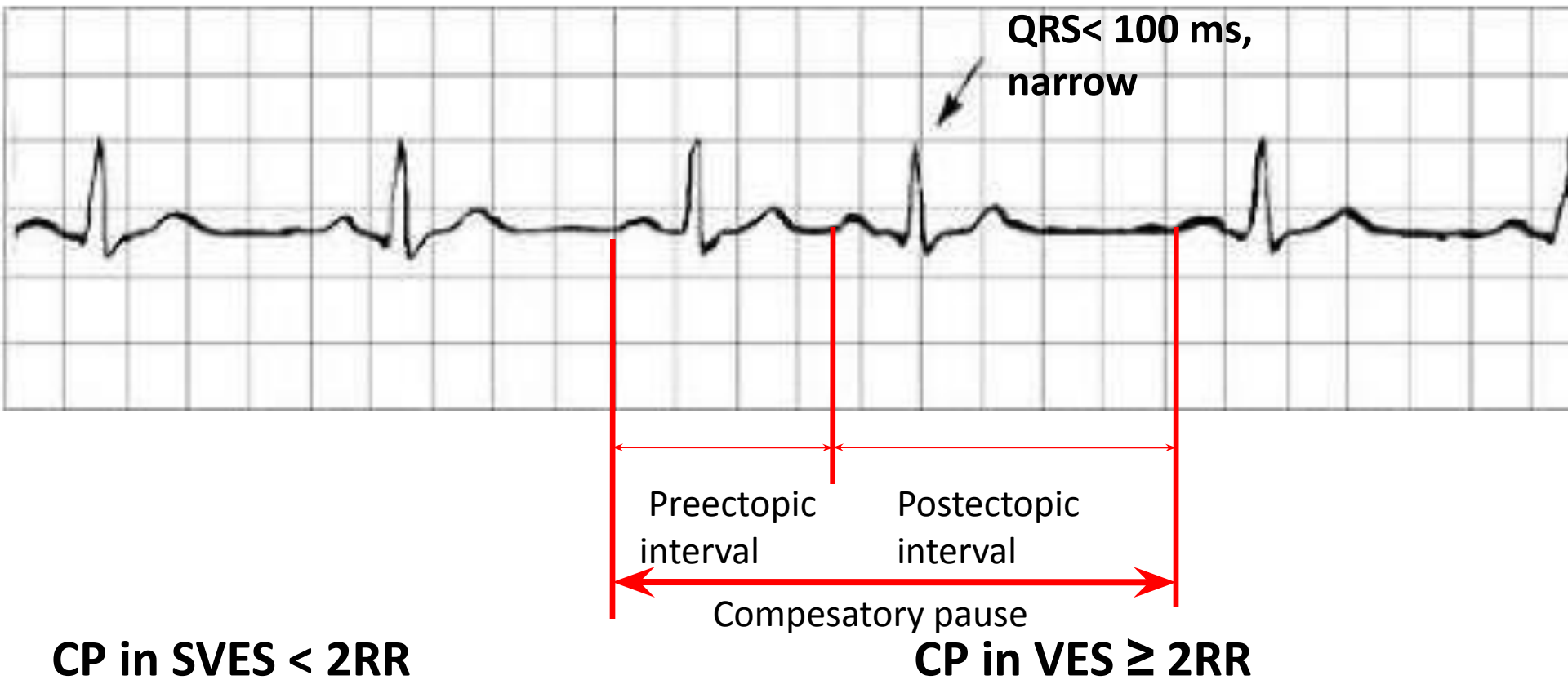
Atrial escape beat

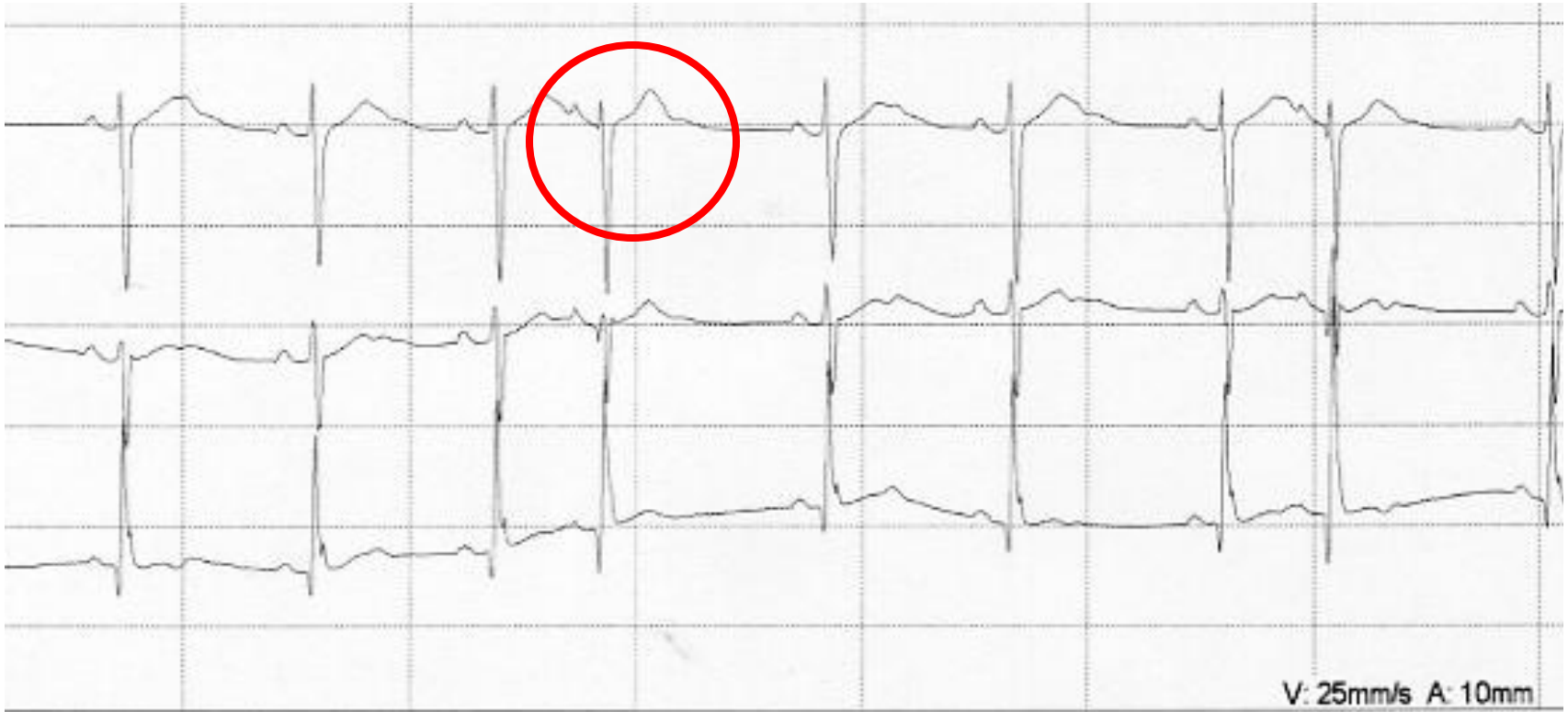
# Supraventricular ES



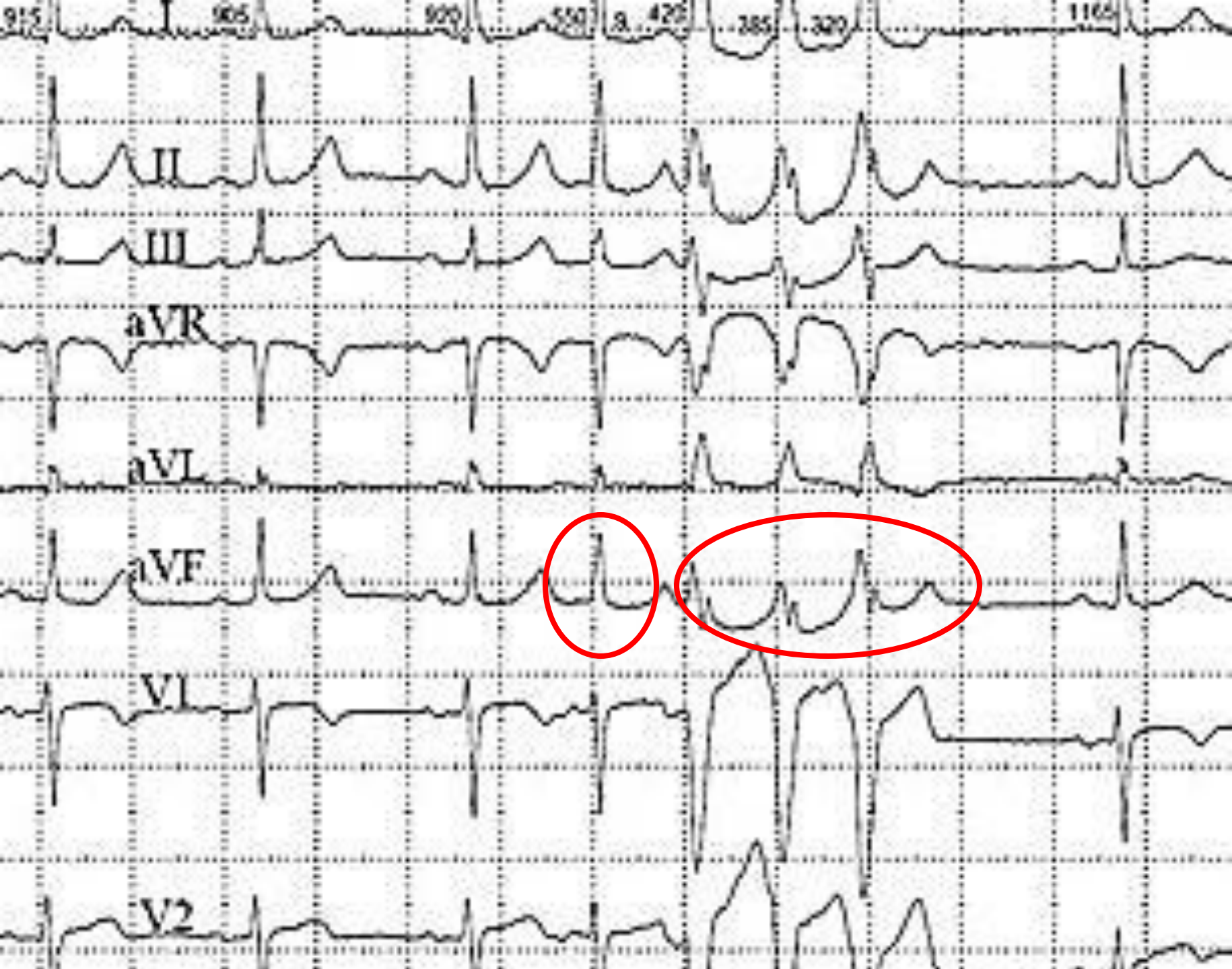
# Ventricular ES









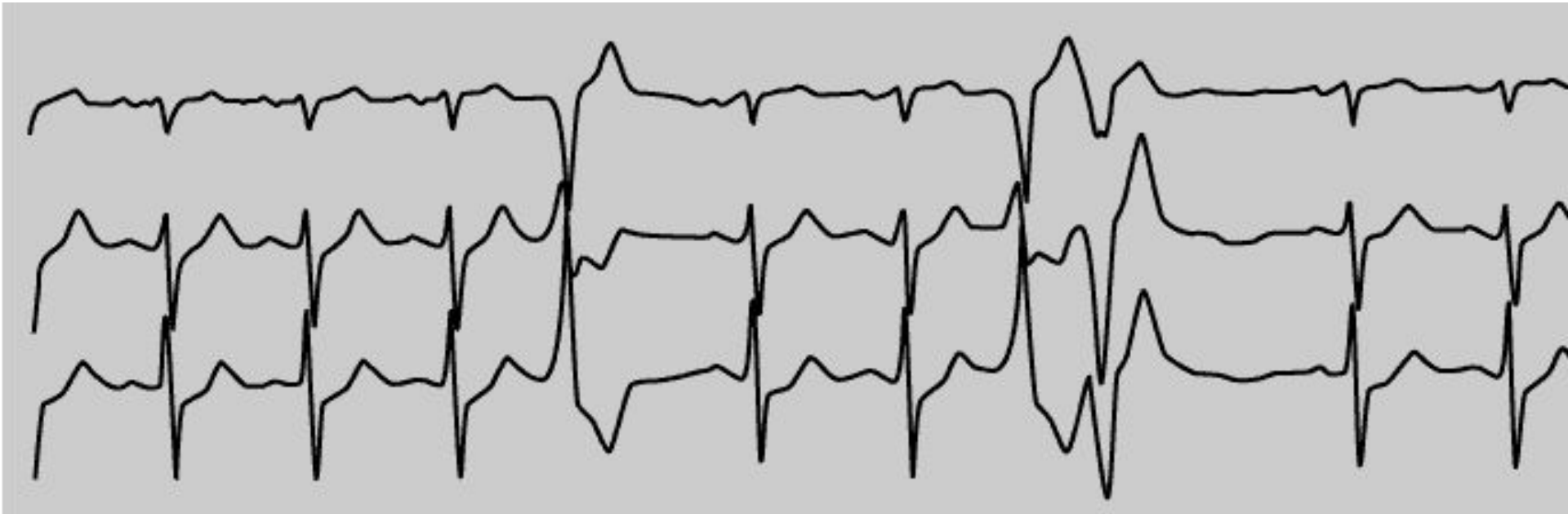


# Ventricular ES

## Classification (reference criteria):

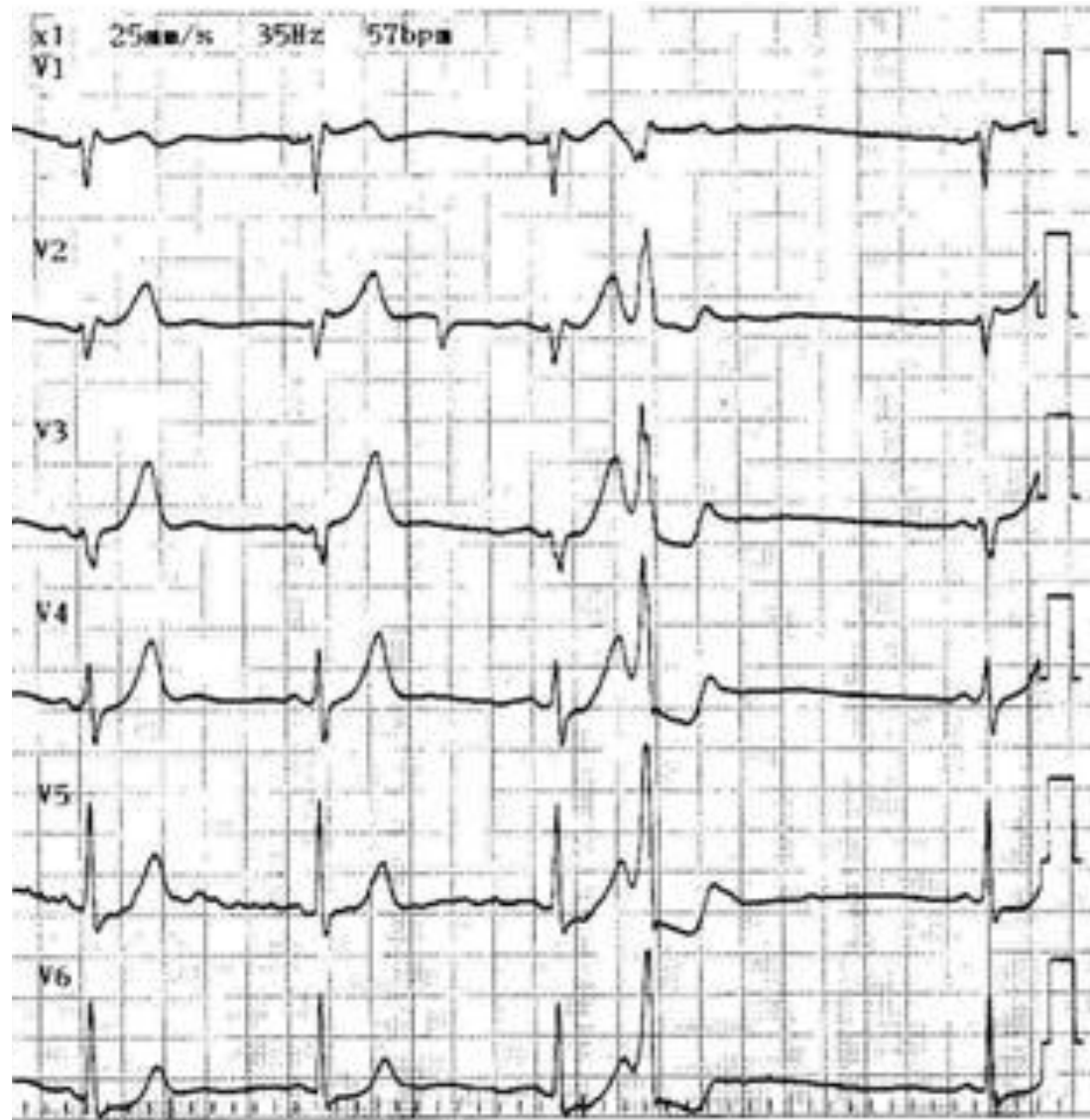
- The form
- A source
- Time of appearance
- Amount
- Allorhythmy
- Prognostic value (clinical)

# The form (morphology)

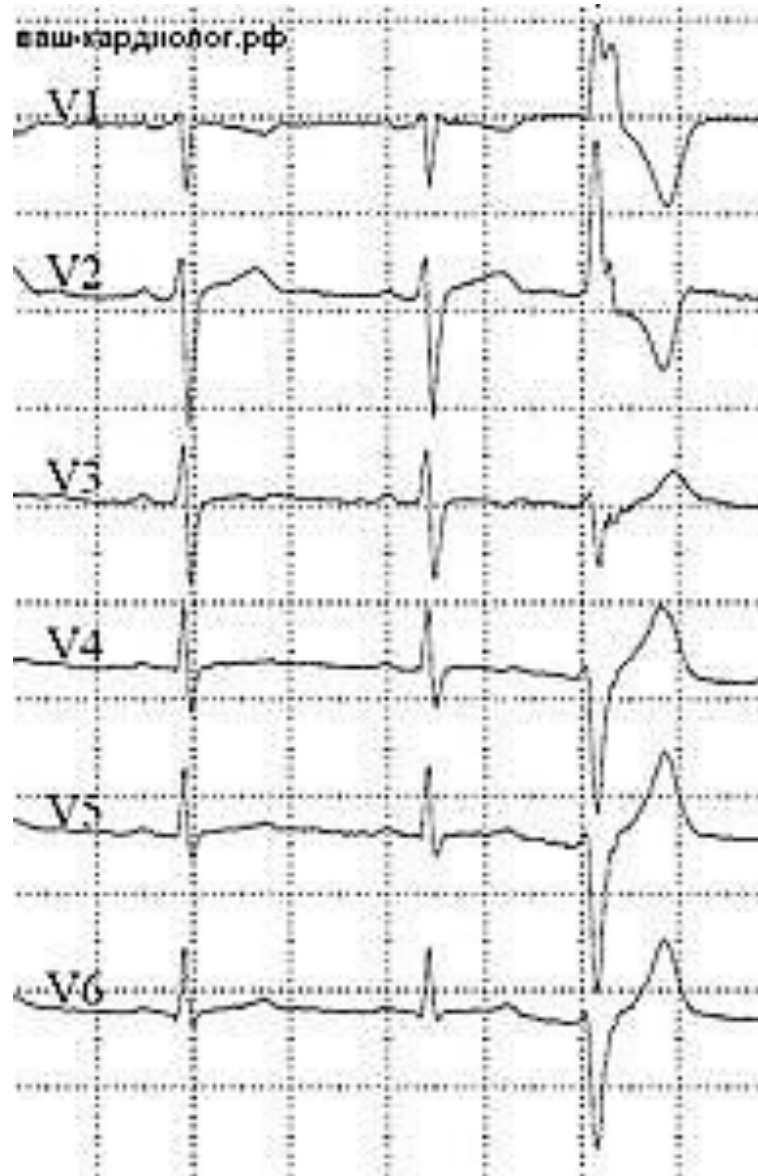


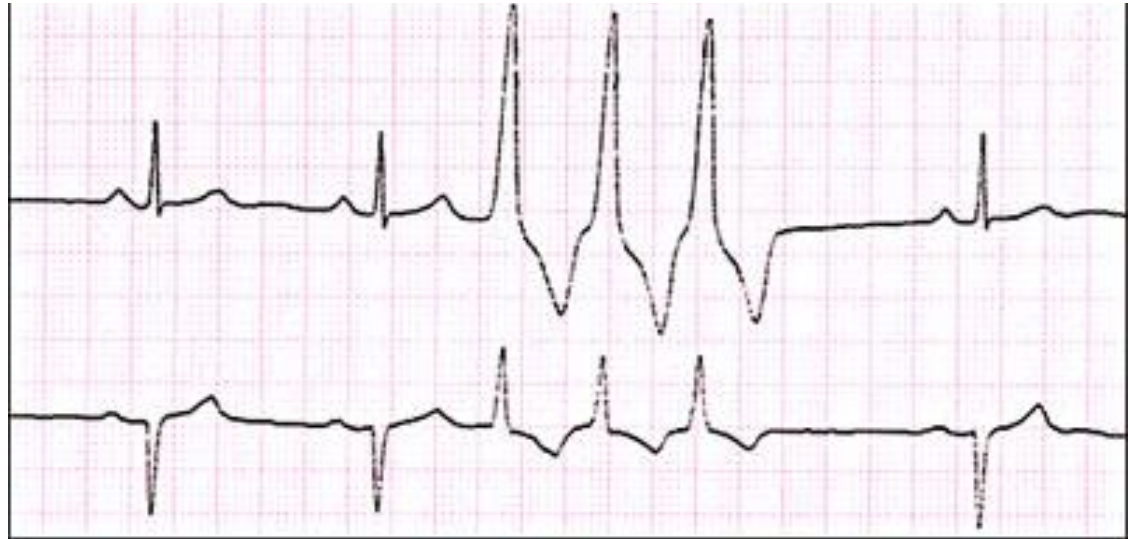
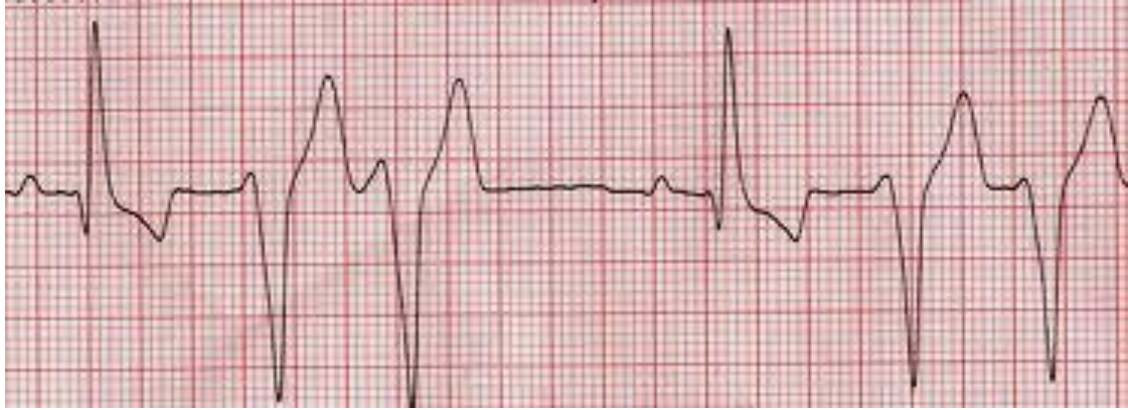


# Time of appearance



Amount:  
-single  
-paired



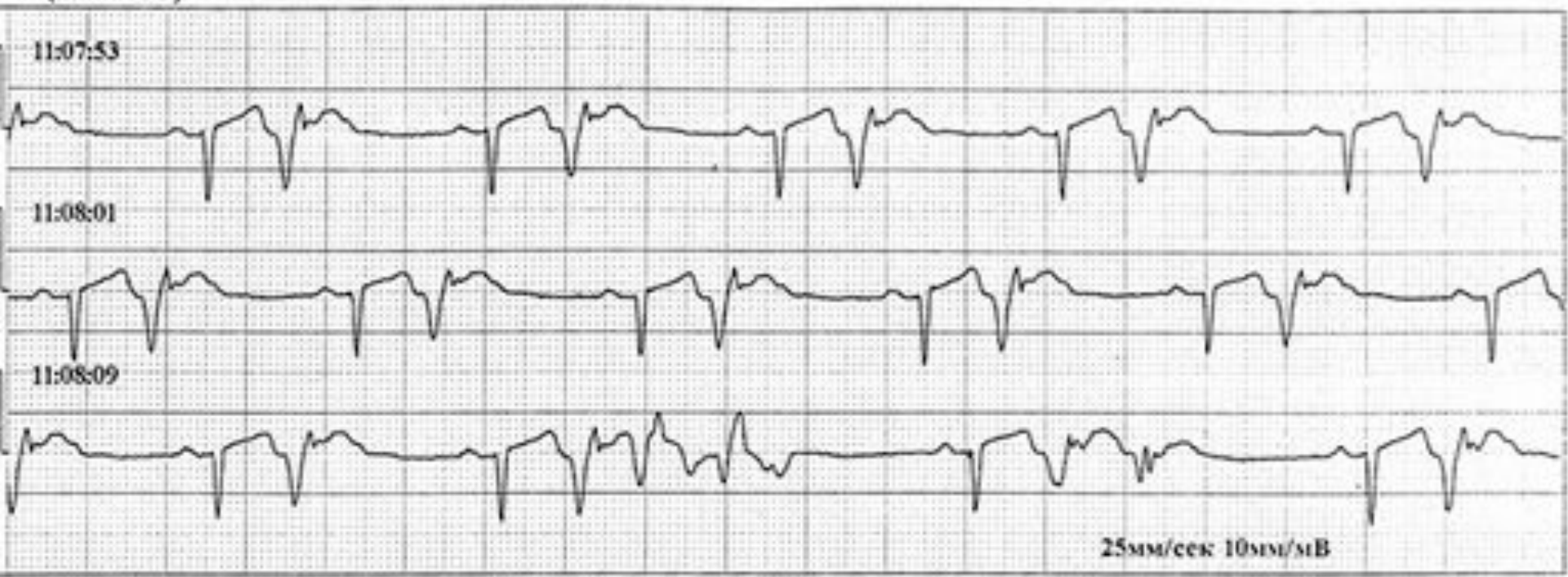


11:07:53

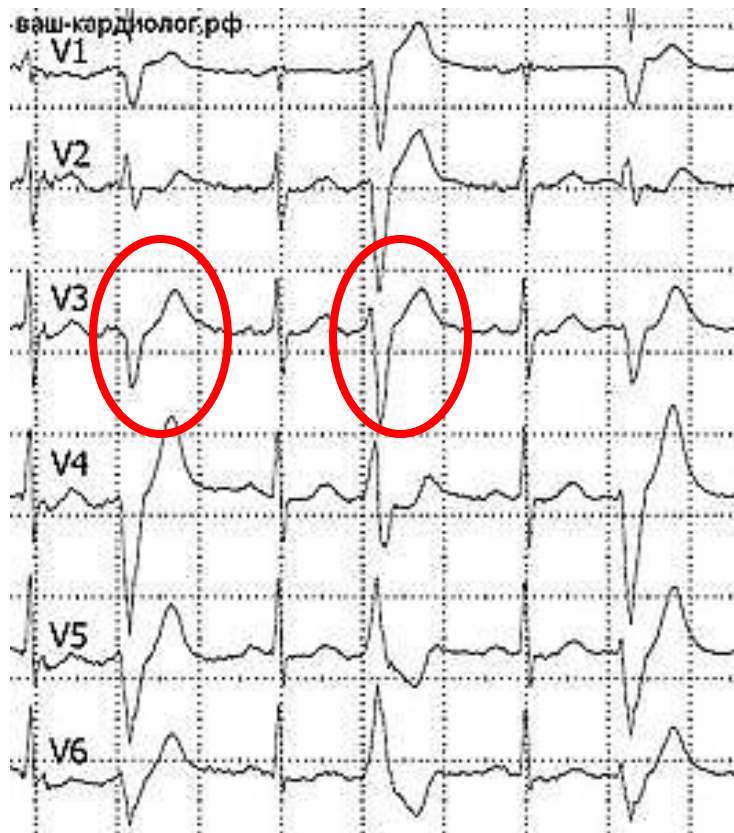
11:08:01

11:08:09

25mm/sec 10mm/mB

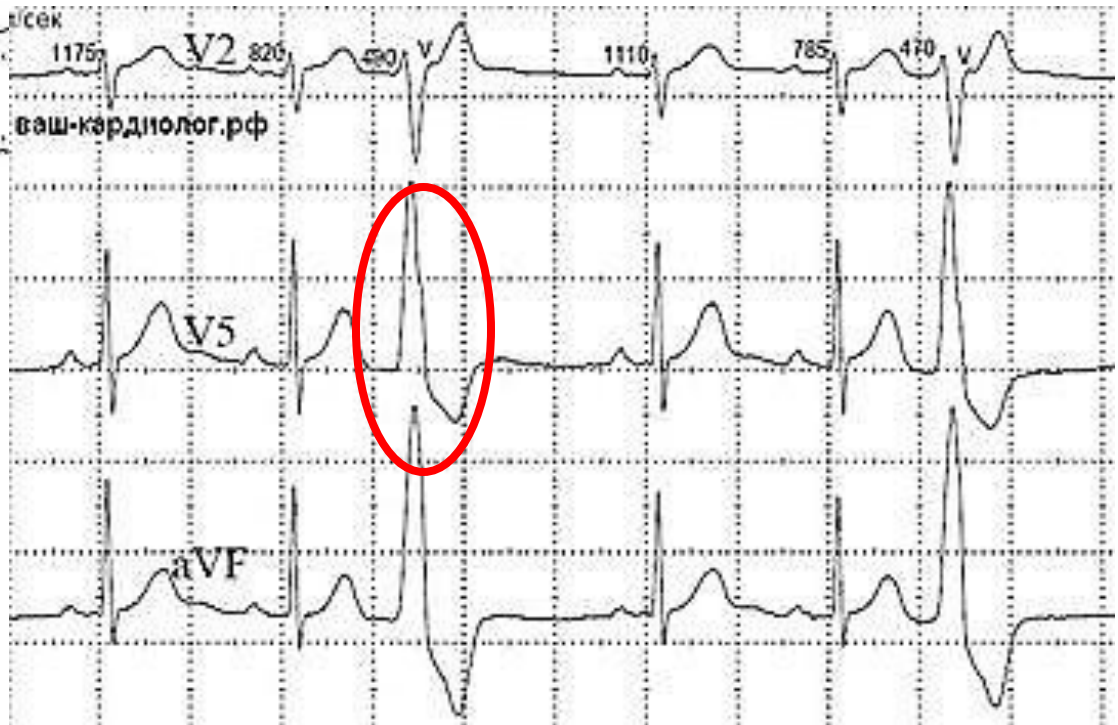




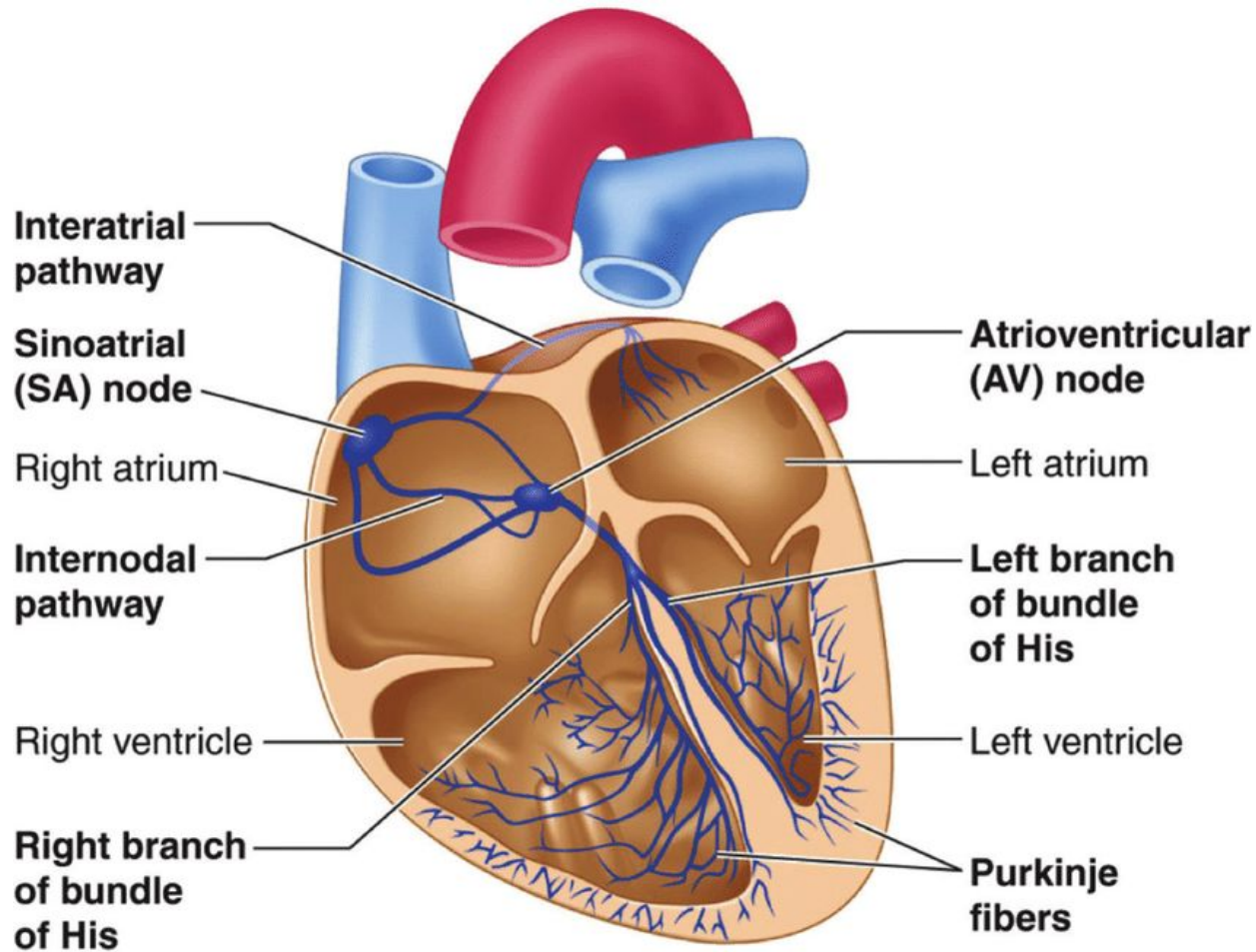


# Allorhythmias

- Bigeminy
- trigeminy



# Heart block



# Heart blocks

Classification:

By localization:

- **Sinoatrial block**
- Intra and inter atrial
- **Atrioventricular block:**
  - proximal (AVN)
  - distal (His Bundle)
- **Bundle branch block**

By duration: transitory and permanent

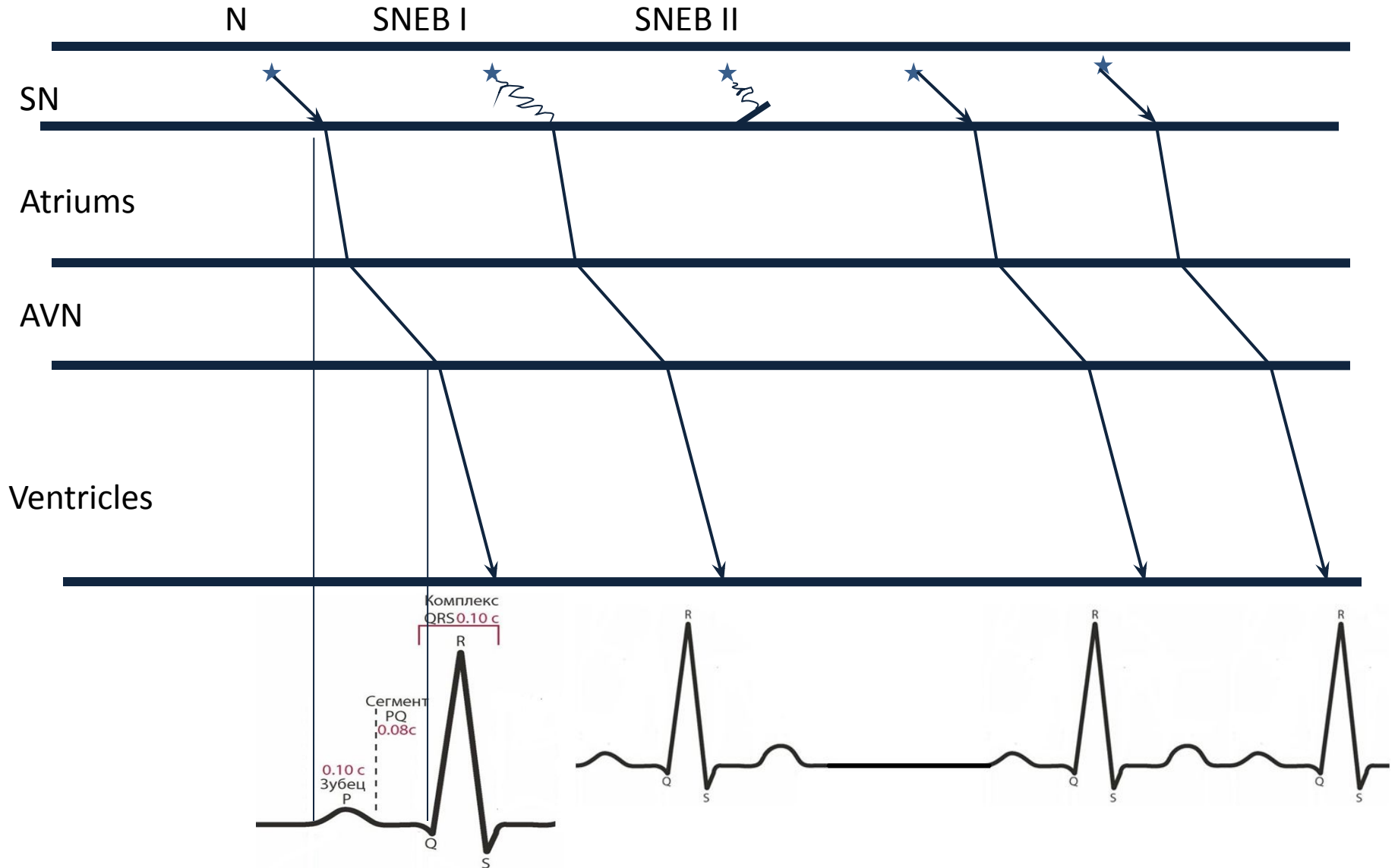
By origin: Structural and autonomic

# SN exit block

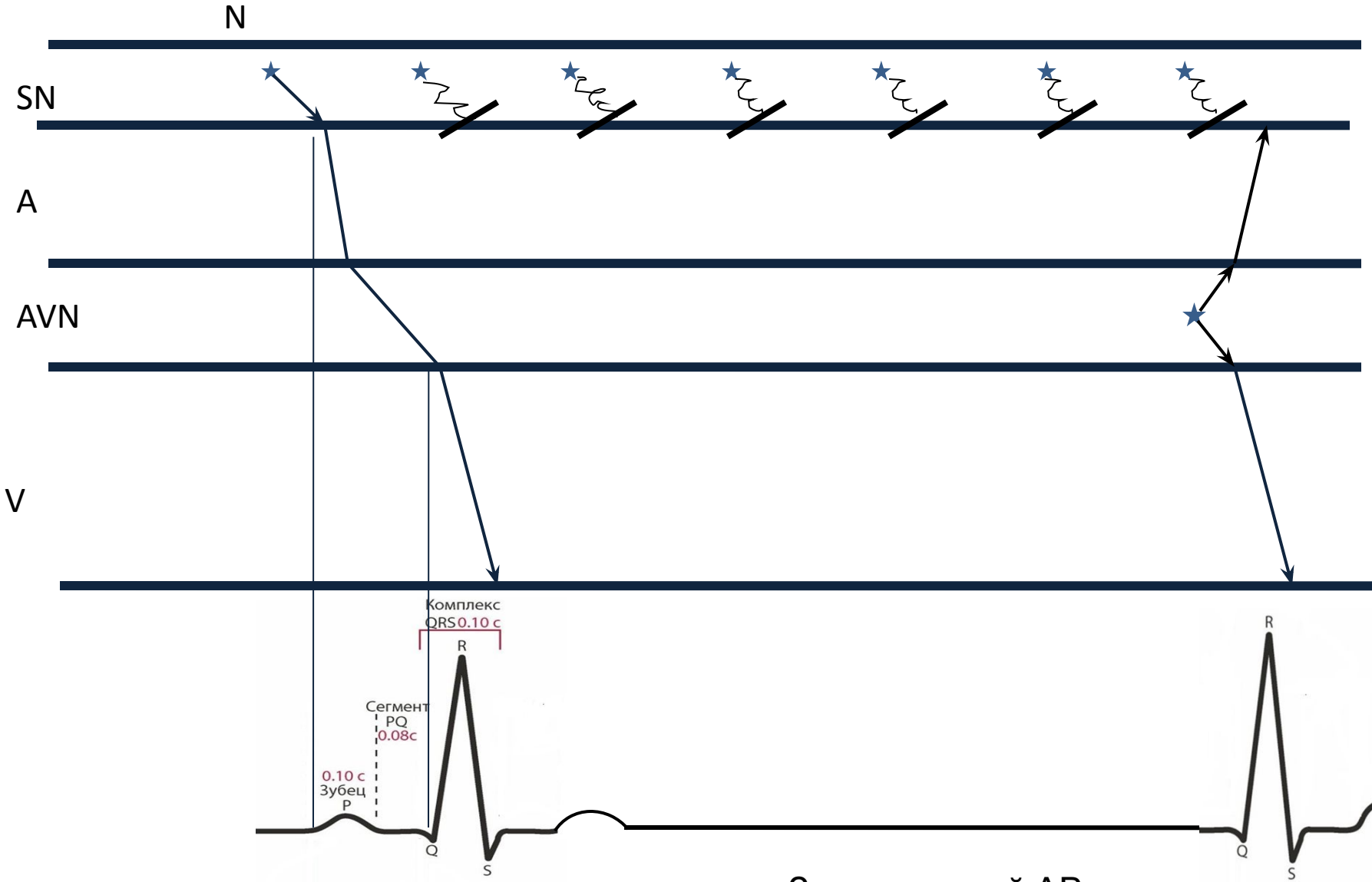


Sinus node exit block occurs when the action potential initiated by the sinoatrial node is suppressed or completely blocked before it leaves the SN and reaches the atrium - therefore, the SN block is an **exit block**

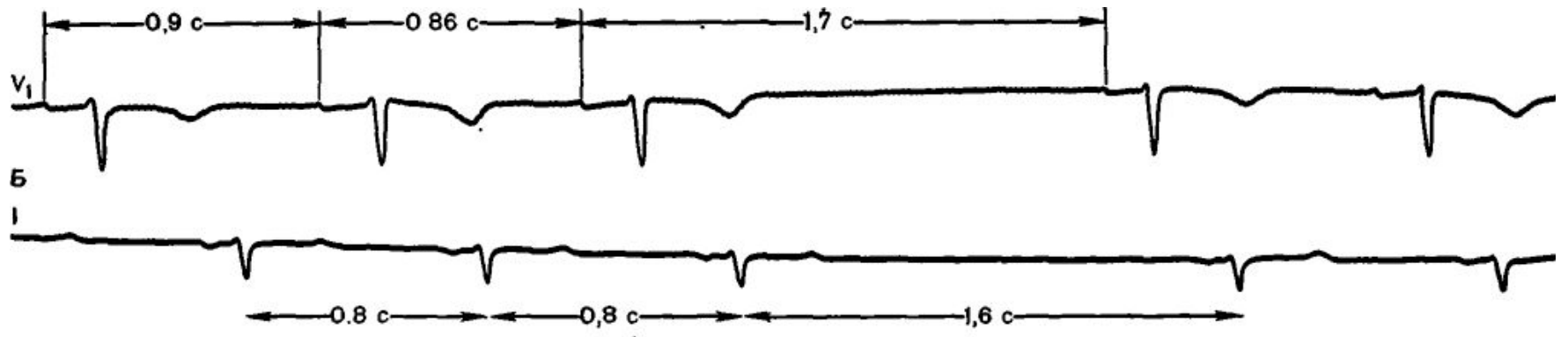
# SN exit blocks (SNEB)

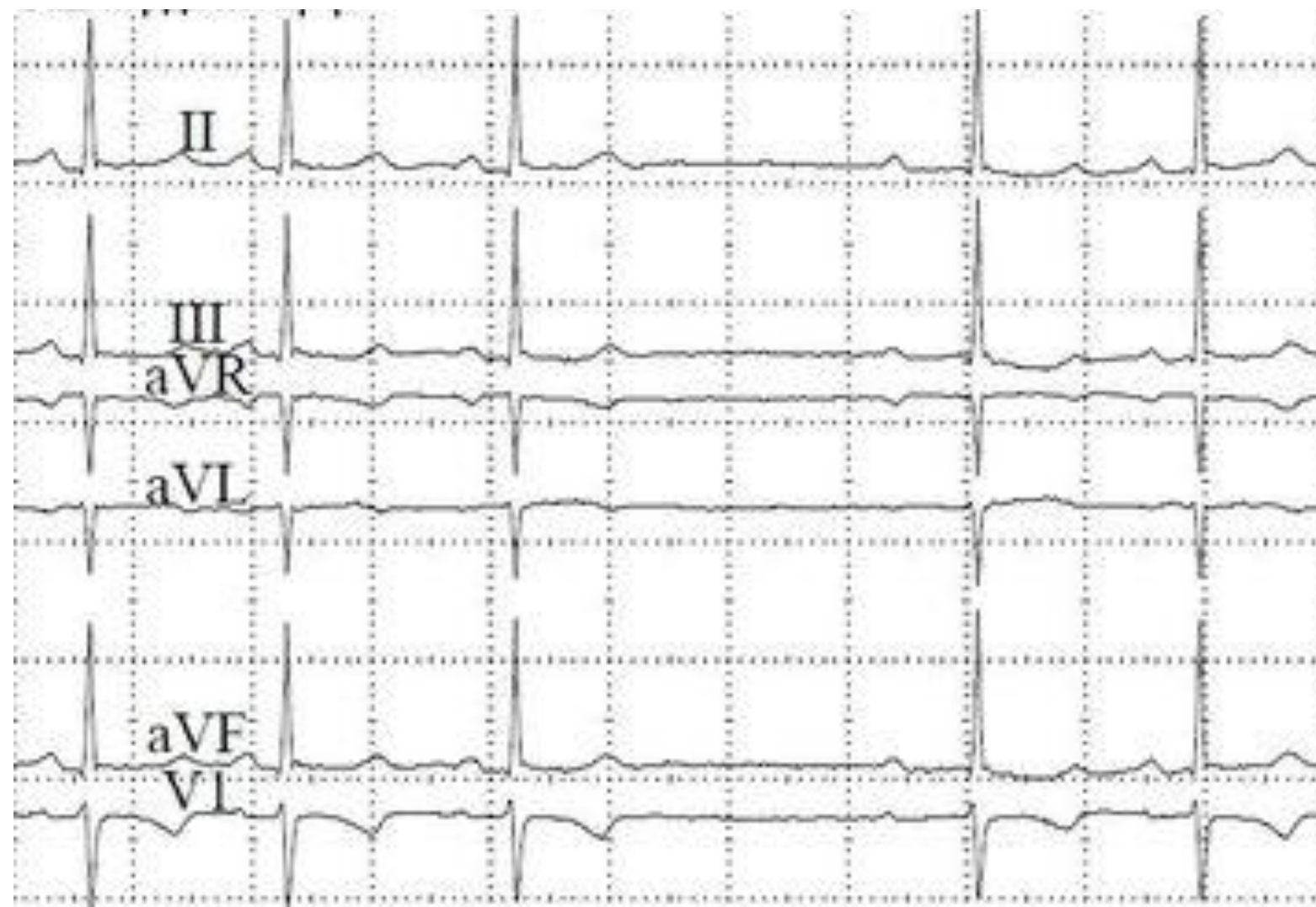


# SNEB III degree

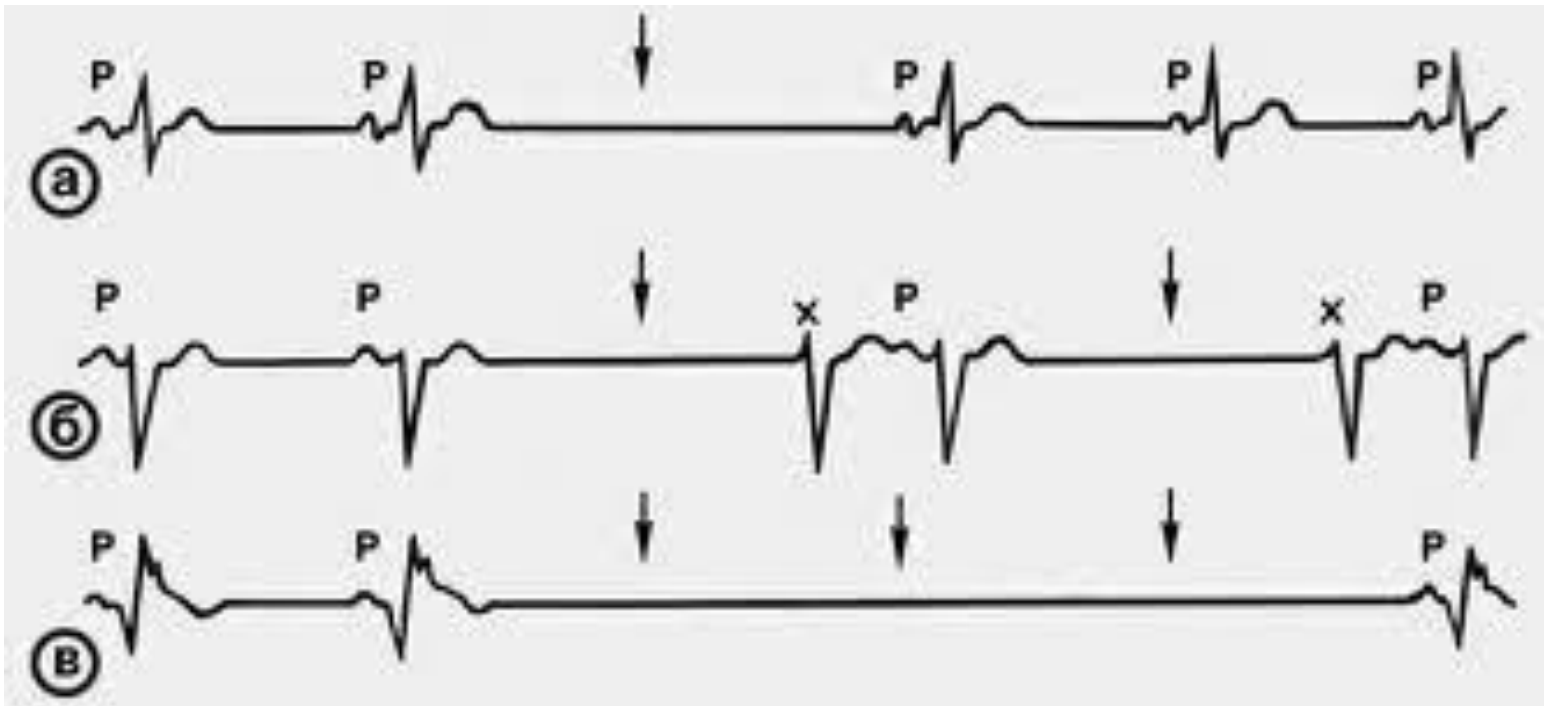


Замещающий АВ комплекс

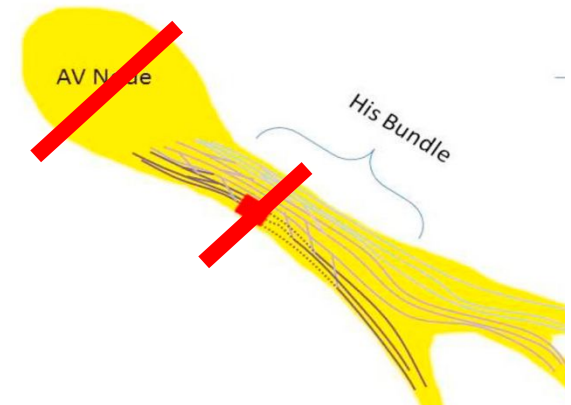








# AV blockade

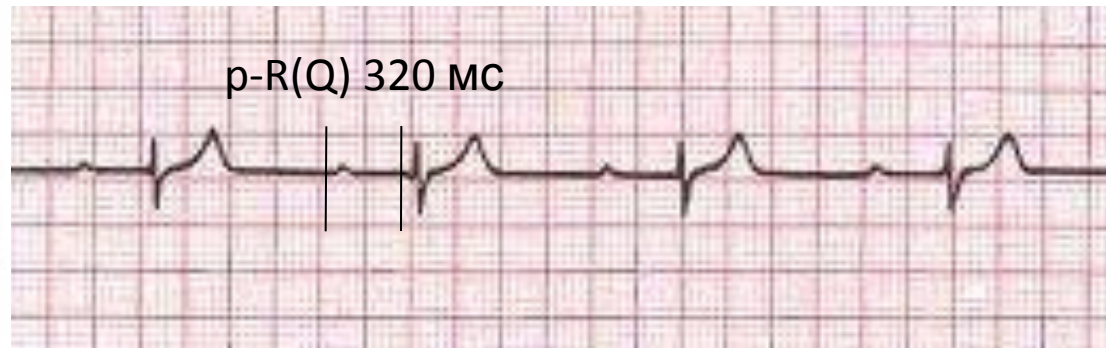
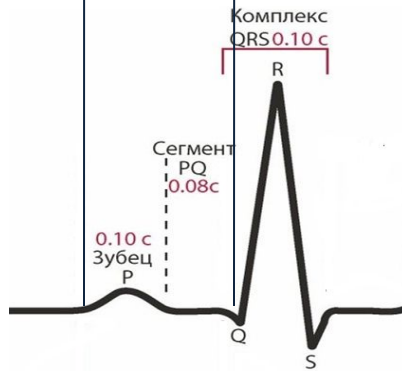
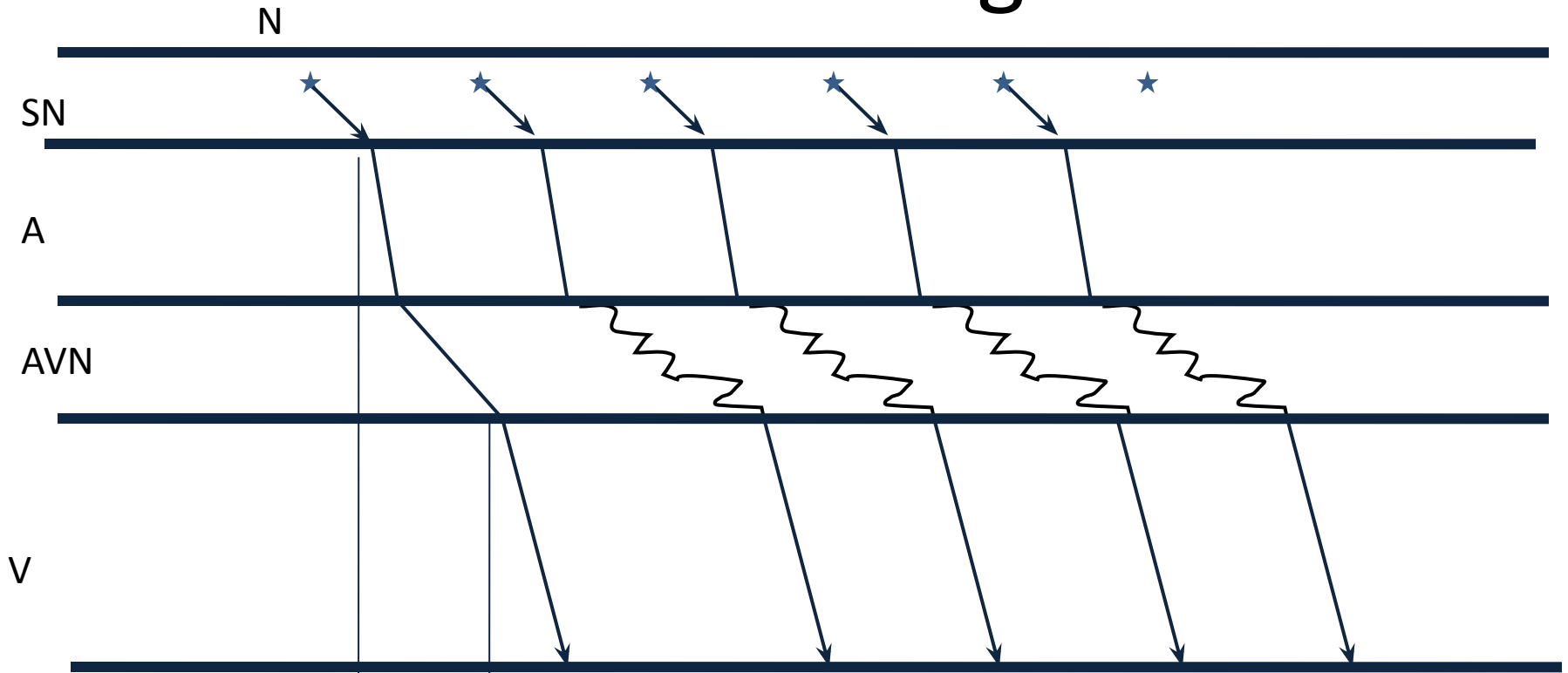


1. Proximal, nodular (benign).
  2. Distal, bundle (irreversible).
- 

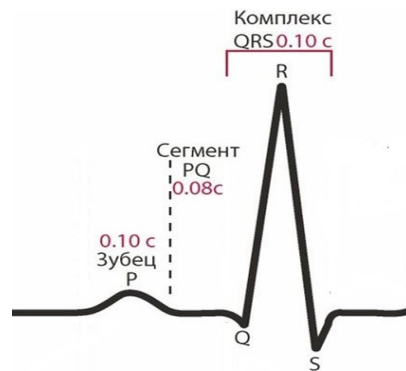
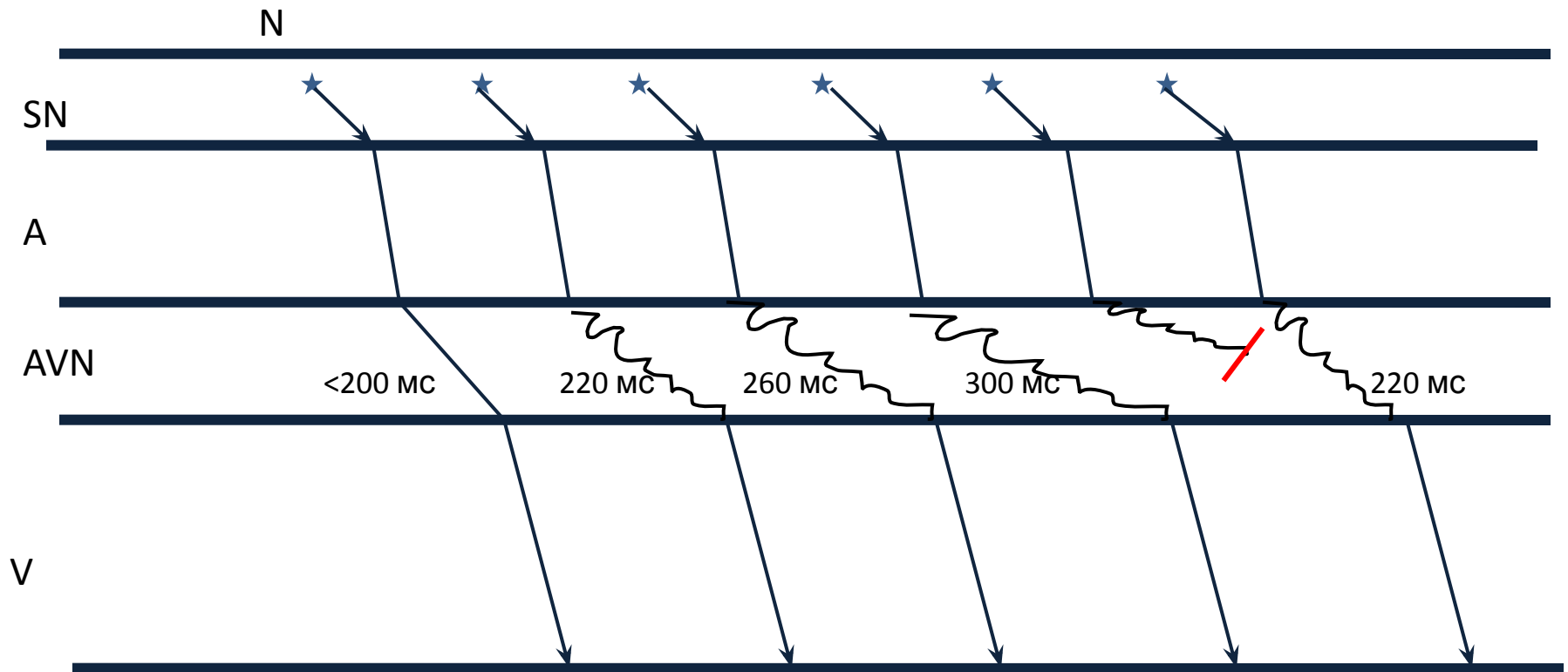
1. Transient (usually nodular): lower AMI, myocarditis, drugs, hyper K<sup>+</sup>.
  2. Persistent (often bundle): anterior AMI, idiopathic fibrosis.
- 

1. Functional (usually nodal and up to II degree type 1) - vagotonic, in athletes.
2. Structural (AMI, myocarditis, cardiomyopathy).

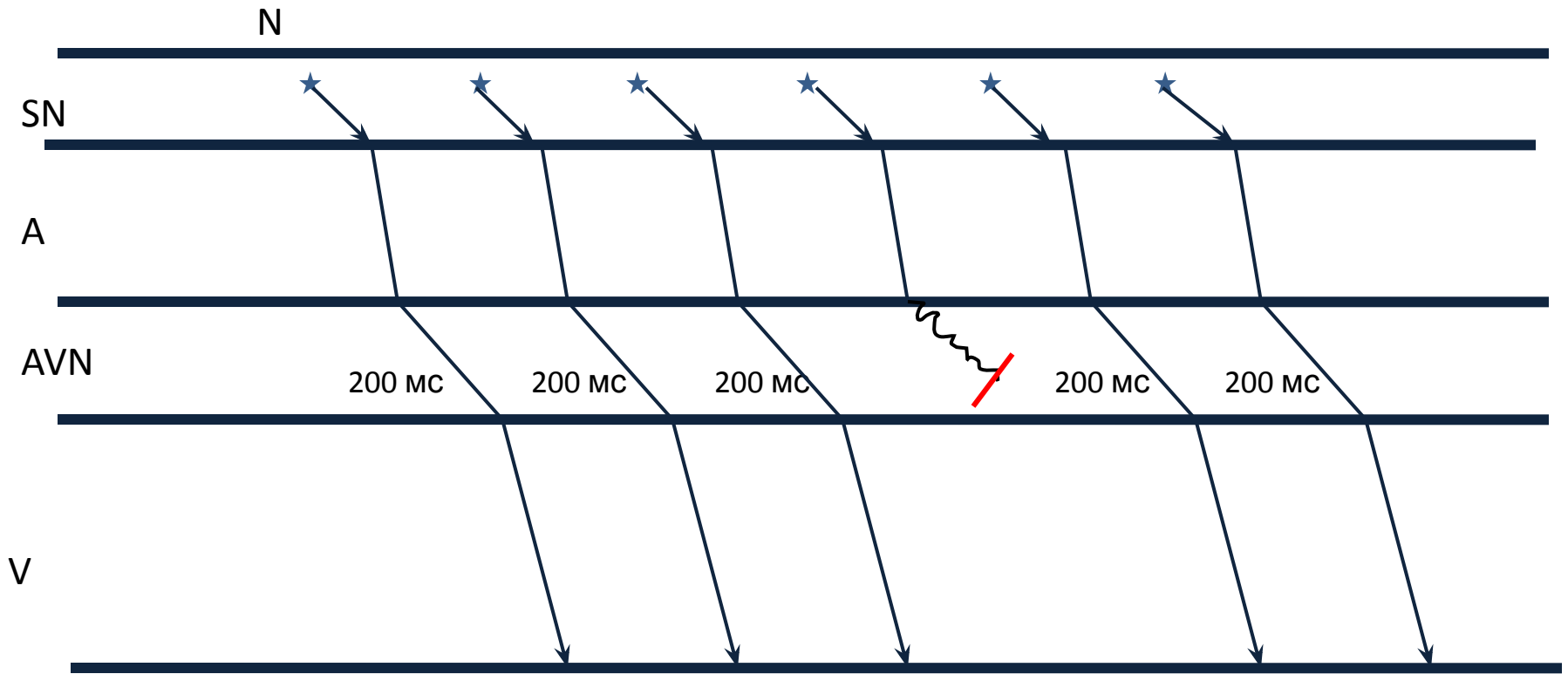
# AV block I degree



# AV block II degree 1 type



# AV block II degree 2 type

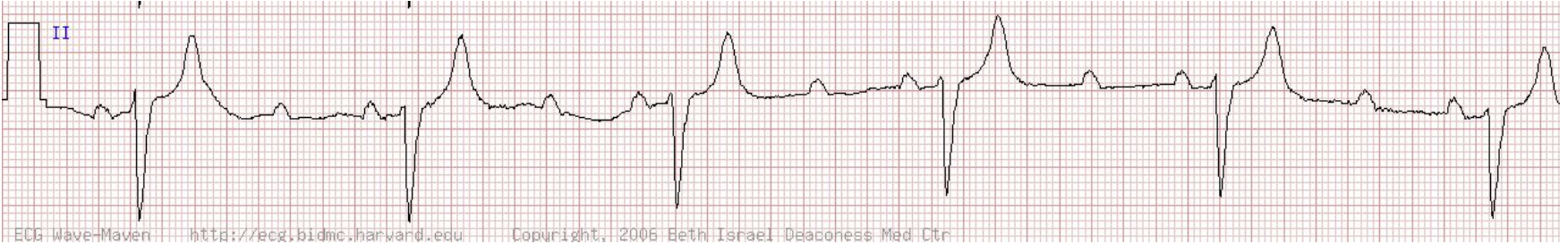


Mobitz II

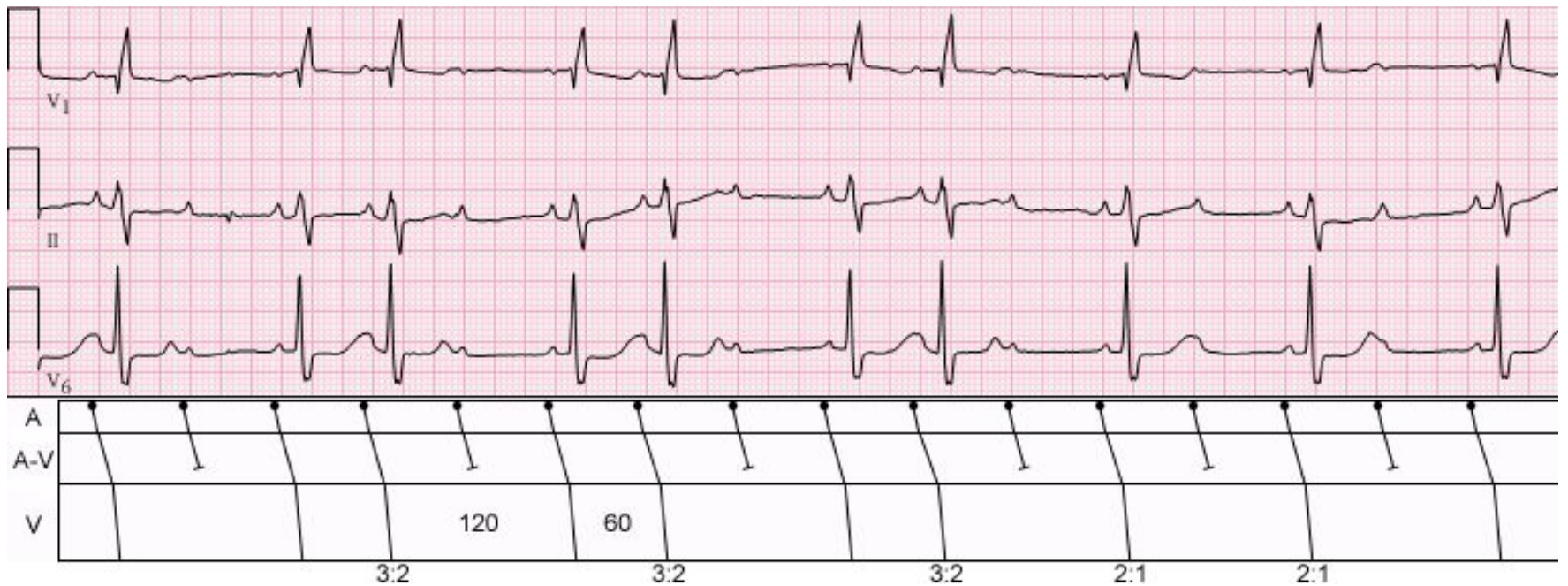


# AV block II degree 2:1

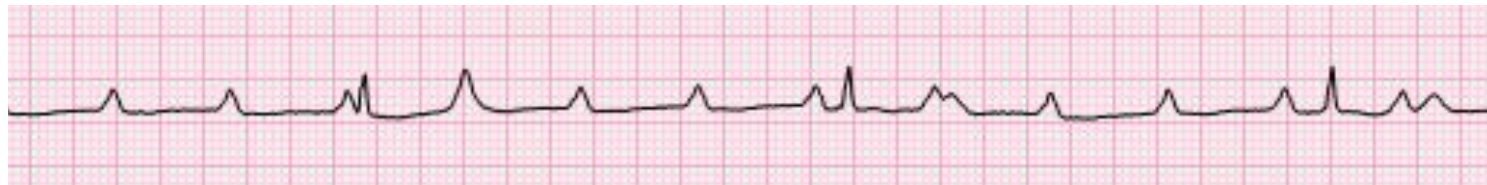
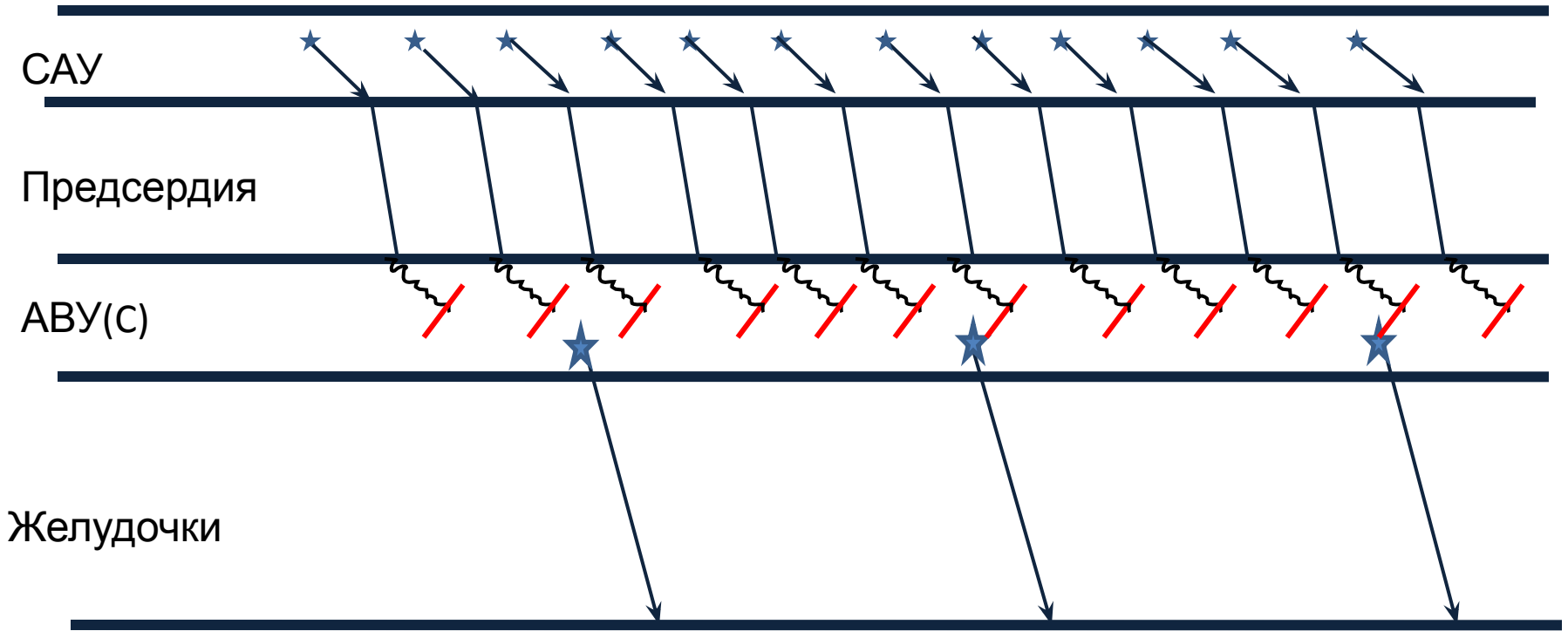
1

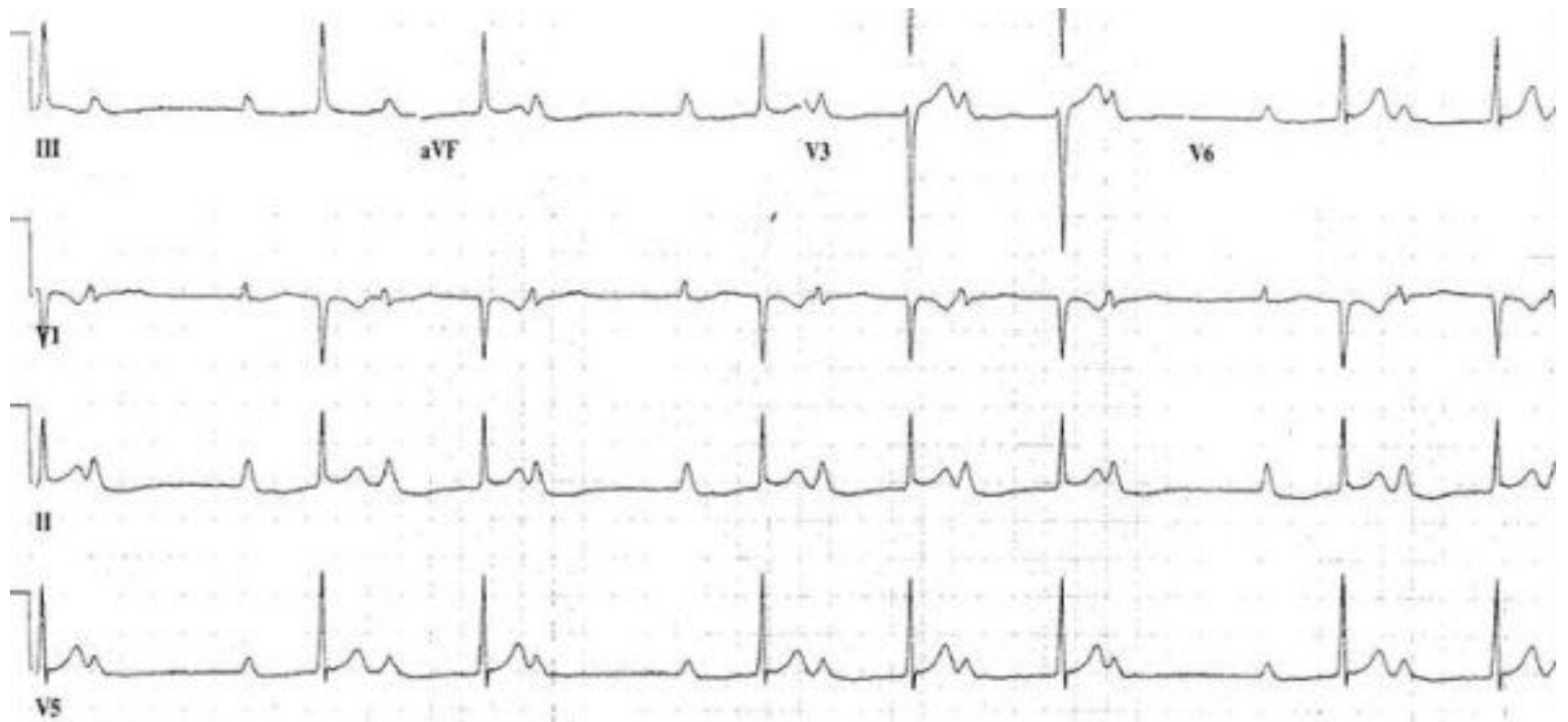


2

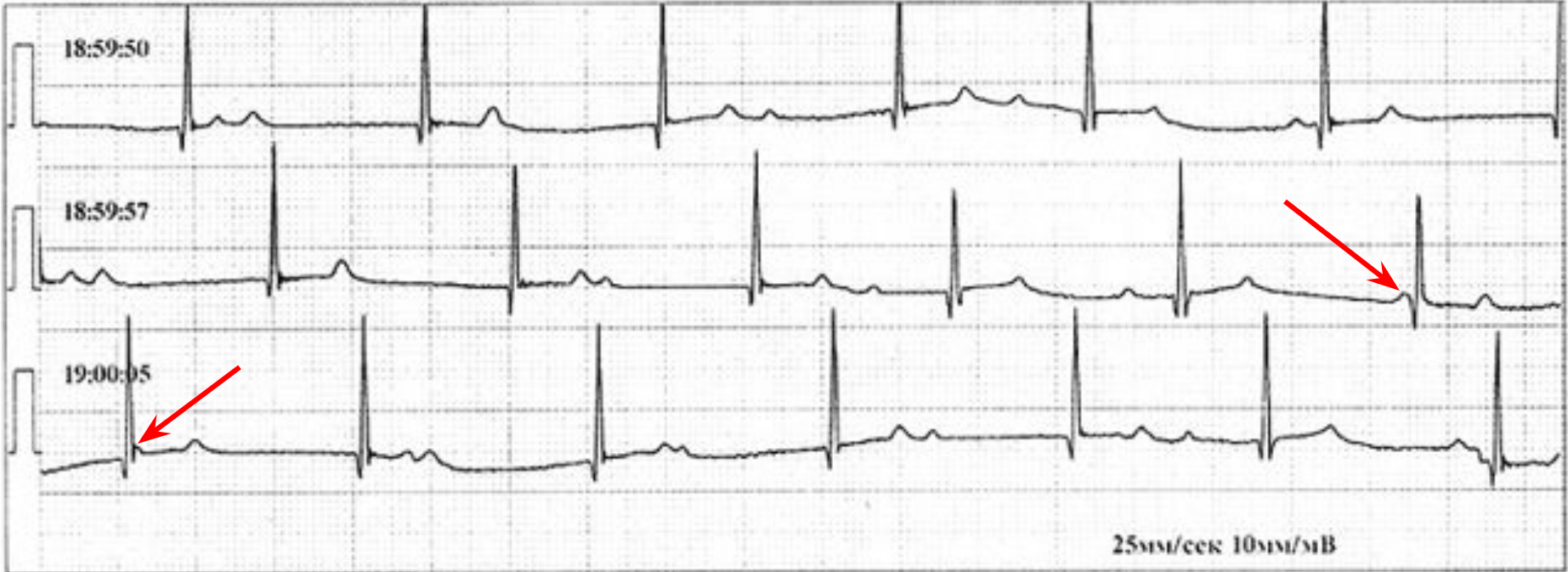


# AV block III degree (complete)





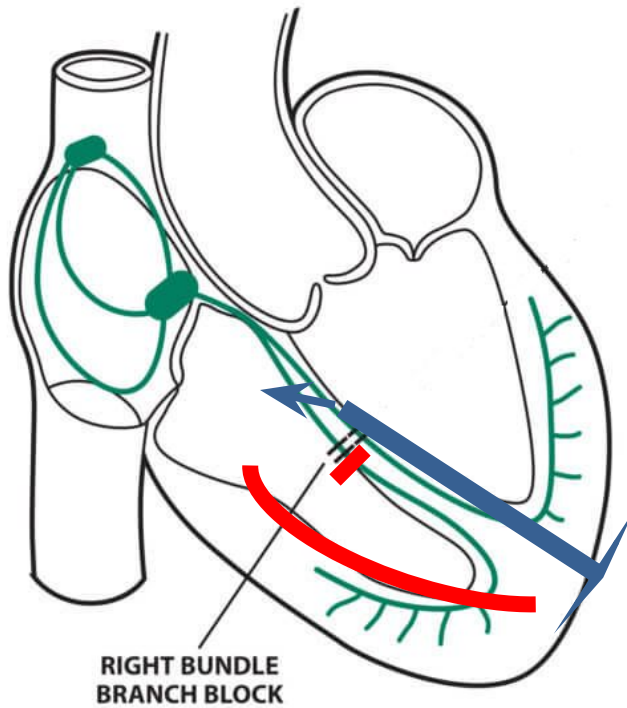




# His bundle branch block

## RHBBB

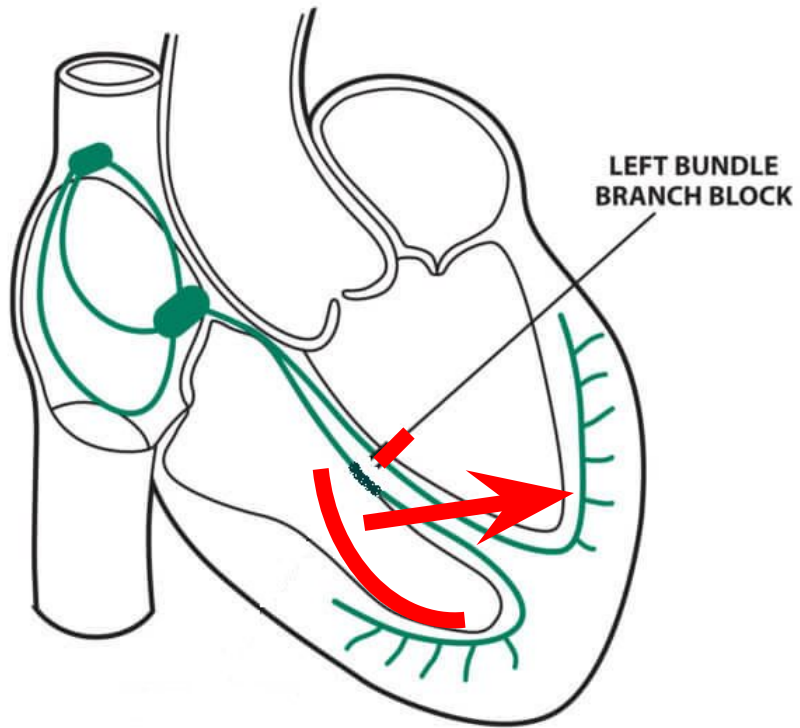
**Sign of block:** deformity of QRS  
**Completeness attribute:** QRS width >120 ms



# Causes of RBBB

- Congenital heart disease
- Coronary artery disease
- PE
- COPD
- Pulmonary hypertension
- Cardiomyopathies
- Degenerative damage to the cardiac conduction system (with aging)

# LBBB



# Causes of LBBB:

- AH
- CAD
- LVH
- Myocarditis
- Valve defects
- Cardiopathies
- Degenerative damage to the conducting system