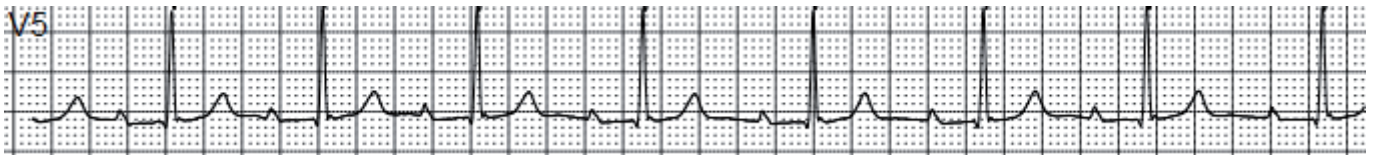


# ANSWER TO A QUIZ ON PAGE 163: ELECTROCARDIOGRAM AND CASE DISCUSSION

**Correct answer: E – Atrioventricular (AV) block II degree, advanced**

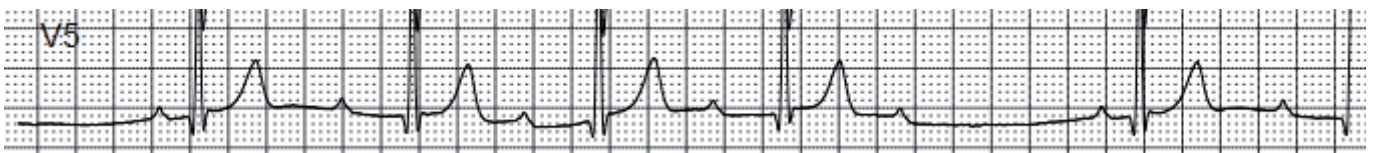
The main characteristic of the first-degree AV block is that all P waves are conducted via AV node to ventricles, but with some delay and interval PQ is prolonged - more than 200 ms (Fig. 1).



**Figure 1. AV block I degree**

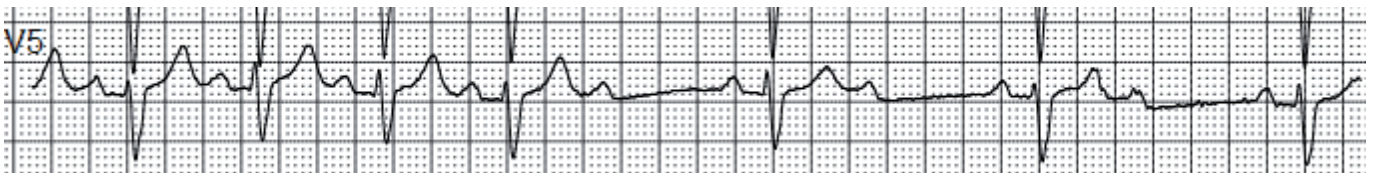
The second degree of AV block with Wenckebach phenomenon can be recognized with gradual prolongation of PQ interval and fallout of one QRS complex, which is blocked in AV node. PQ

interval observed after the blocked QRS is shorter comparatively to next ones. Then PQ interval progressively increases (Fig 2). The rate of P waves and QRS complexes can be 6:5, 5:4, 4:3 etc.



**Figure 2. AV block II degree with Wenckebach phenomenon**

The main feature of the second degree of AV block Mobitz type is that drop of the QRS complex appears without segment PQ prolongation (Fig.3).



**Figure 3. AV block II degree, Mobitz type**

AV block II degree, 2:1 can be registered on ECG, when the rate of P waves and QRS complexes is 2:1, but there is no possibility to obtain how it appears. AV conduction with the Wenckebach

phenomenon rate can gradually decrease to 2:1 rate or AV block 2:1 can occur according to the Mobitz type (Fig.4).



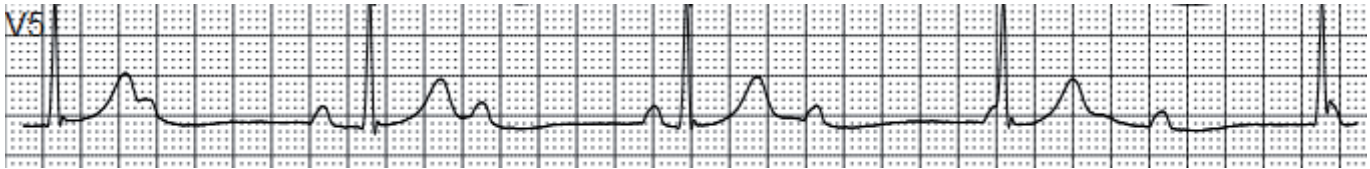
**Figure 4. AV block II degree, 2:1**

**Address for Correspondence:** Mykhaylo Sorokivskyy, Danylo Halytsky Lviv National Medical University, Lviv Regional Cardiology Center, Lviv, Ukraine; Email: msorokivskyy1@gmail.com

**Received:** 14.10.2019 **Accepted:** 15.10.2019

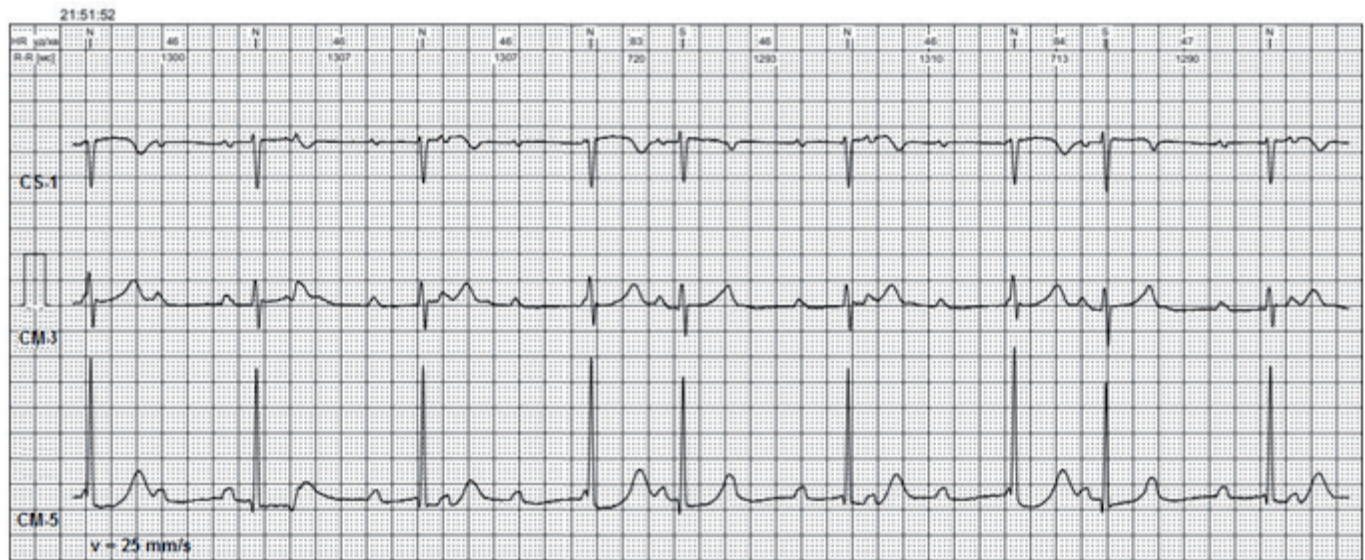
**Copyright**© 2019 Heart, Vessels and Transplantation

Complete AV block is characterized by complete absence of the P waves and the QRS complexes accordance. Any signs of atrioventricular conduction cannot be revealed on ECG. QRS complexes narrow or wide appear with own very often slow rhythm (Fig.5).



**Figure 5. AV block III degree, complete**

Advanced AV block II is shown on Figure 7 (Fig. 1 on page 163) and is recognized by rare episodic signs of the AV conduction. Only 5th and 8th QRS complexes (Fig.7) are conducted via AV node. There is no accordance between P waves and other QRS complexes on this ECG. AV conduction is severely disturbed in this case and only single conducted P waves suggest that AV block is not complete.



**Figure 7. Fragment of the 3-channel Holter monitoring**

Mykhaylo Sorokivskyy, Ulyana Chernyaha-Royko  
Danylo Halysky Lviv National Medical University,  
Lviv Regional Cardiology Center, Lviv, Ukraine

**Peer-review:** internal

**Conflict of interest:** None to declare

**Authorship:** M.S. and U.C-R. equally contributed to preparation of quiz

**Acknowledgement and funding:** None to declare