

Left bundle branch block

Left bundle branch block (LBBB) is a defect of myocardial conduction occurring due to damage of electrical conduction system of the heart, being responsible for **late depolarization** (as well as cardiac activity) of left ventricle. Entire left ventricle is depolarized by right bundle branch, with ECG showing **widened** QRS complexes and **abnormal morphology** of QRS.

Types

According to the wideness of QRS complex we differentiate **two** types of LBBB:

1. **Complete LBBB** (QRS is prolonged over 0,11 s);
2. **Incomplete LBBB** (QRS is in range of 0,06–0,11 s).

Physiological duration of QRS complex is 0,06–0,11 s.

Etiology

LBBB itself is hemodynamically insignificant, although it is signaling defect and/or higher demands on left ventricle, which can be caused by these conditions:

- cardiomyopathy,
- valvular heart disease,
- hypertension (hypertensive cardiomyopathy),
- ischemic cardiomyopathy.

Complications

LBBB increases risk of heart failure, myocardial infarction, Second-degree AV block, Third-degree AV block.

Diagnostika

Diagnosis of LBBB is dependent on **ECG**. In case of **complete LBBB**:

- **QRS complex is widened over 0,11s** (3 small squares), in lead **V6** there should be also a **notched (M-shaped)** R wave (RsR');
- In lead **V1**, there should be **QS** or **qRS** (W-shaped) complex;
- In lateral leads (V5, V6, I, aVL) the **T wave** should be **inverted** and there should be also descendent depression of ST segment (=secondary repolarization changes);
- Axis – normal or left axis deviation is present

In case of incomplete LBBB, the duration of QRS complex is 0,06–0,11s.

Alert! CAVE! The presence of LBBB disables diagnosis of myocardial infarction. If we have LBBB patient with myocardial infarction suspicion (pain of coronary origin), there is always need for hospitalization!

Differential diagnosis

- Hypertrophy of left ventricle
- Lateral myocardial infarction
- Preexcitation syndrome

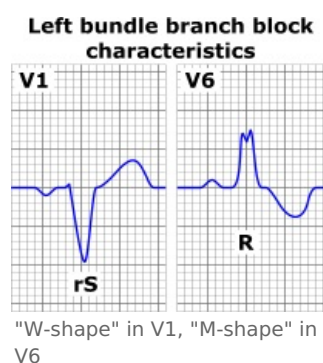
Links

Related Articles

- Right bundle branch block
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- Arrhythmias

External links

- Jak poznat STEMI u bloku levého Tawarova raménka (<http://kardioblogie.blogspot.com/2012/07/pokrocili-jak-po-znat-na-ekg-stemi-u.html>)



- Blokáda levého Tawarova raménka (TECHmED) (<https://www.techmed.sk/blokada-laveho-tawaroveho-ramienka/>)
- STEMI a blokáda levého Tawarova raménka (TECHmED) (<https://www.techmed.sk/stemi-a-blokada-laveho-ramienka-sgarbossa-kriteria/>)
- Úvod do EKG – prof. Jan Malík (<http://www.medicalmedia.eu/cs/Detail/1272%7C>)

Bibliography

- HOLAJ, Robert. Kardiologický kroužek. III. interní klinika VFN a 1. LF UK v Praze, 2009.
- VILIKUS, Zdeněk. Interpretace EKG v klidu a při zátěži. Ústav tělovýchovného lékařství 1. LF UK a VFN; 2010.