

Trigger :

You are a GP you are assessing John an 80 yo M, you have never seen him before. He is new to town, and you are doing a general checkup. The nurse hands you his 'abnormal ECG'.

Task 1: Interpret the ECG and identify the abnormalities.

Vent. rate 58 bpm
PR interval 304 ms
QRS duration 136 ms
QT/QTc 462/453 ms
P-R-T axes 62 -73 41

Unconfirmed



150 Hz 25.0 mm/s 10.0 mm/mV

4 by 2.5s + 1 rhythm ld

MAC25 0000

8 1981 11 299

Rate	58 BPM	
Rhythm	Sinus rhythm regular	
Axis	Left axis deviation	
Intervals (ref. ranges)	PR (120-200ms)	320 ms
	QRS (<120ms)	136 ms
	QT (<480ms)	WNL at 460
Segments	<p>PR interval is elevated at 320 ms consistently, this is highly indicative of a 1st degree block.</p> <p>No ST elevation seen.</p> <p>M waveform in V1 and W waveform seen V6 is highly indicative of RBBB.</p>	
Interpretation	<p>This is an ECG of an 83 yo M with. He is bradycardic with a rate of 58 with a regular rhythm and there is left axis deviation.</p> <p>His PR interval is elevated at ~ 320ms and is consistently 320 ms with no skipped beats this is indicative of a 1st degree heart block.</p> <p>The QRS is broad complex and there is obvious M waveform in V1, and W waveform seen in the deep S wave in leads V6,5,4,3. This is indicative of a RBBB.</p>	

Follow-up questions:

Question 1: What are the causes of RBBB?

Question 2: What is done about an asymptomatic 1st degree heart block?

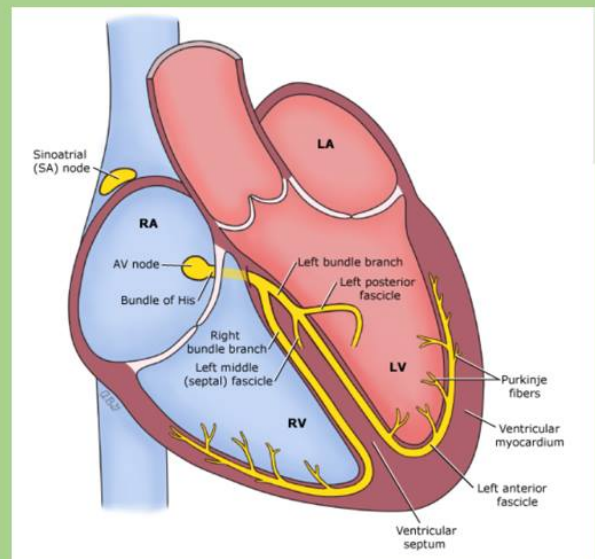
Answers:

Q1: Right bundle is especially vulnerable to stretch and trauma of the right ventricle, potentially aetiologies include:

- Right ventricular hypertrophy / Cor Pulmonale
- COPD
- Pulmonary Embolus
- Ischaemic heart disease
- Rheumatic heart disease
- Congenital heart disease (e.g., ASD)
- Myocarditis
- Cardiomyopathy

To learn more:

UpToDate: Right Bundle Branch Block



Answers:

Q2: An asymptomatic 1st degree heart block is not treated with anything. Considering the patient has a concurrent prolonged QRS due to his RBBB he might be a candidate for pacing, but this is a decision for the cardiologist to make. As a GP you would monitor the patient and safety net around when to represent. You would talk about re-presenting to the practice or ED should the patient develop:

- Syncope
- Episodic pre-syncope
- Exertional dyspnoea
- Fatigue

If patients were symptomatic, you would consider firstly:

1. Stopping AV nodal blocking medications (B-Blockers and non-dihydropyridine calcium channel blockers and digitalis)
2. Infrequently in patients with severe symptoms permanent pacemaker implantation should be considered.

To learn more:

Up To Date: "First Degree AV Block article"

BMJ : AV Block