

Sept 2025 - BBB Newsletter

STEMI or Just a Wide QRS? Untangling the LBBB Dilemma + New Pocket Cards!

QRS Educational Services <darlene@qrs-education.com>
To:

Thu, Sep 4, 2025 at 2:00 PM



STEMI Maskers or STEMI Mimickers... What's Your Take on Chest Pain and a Left Bundle Branch Block?

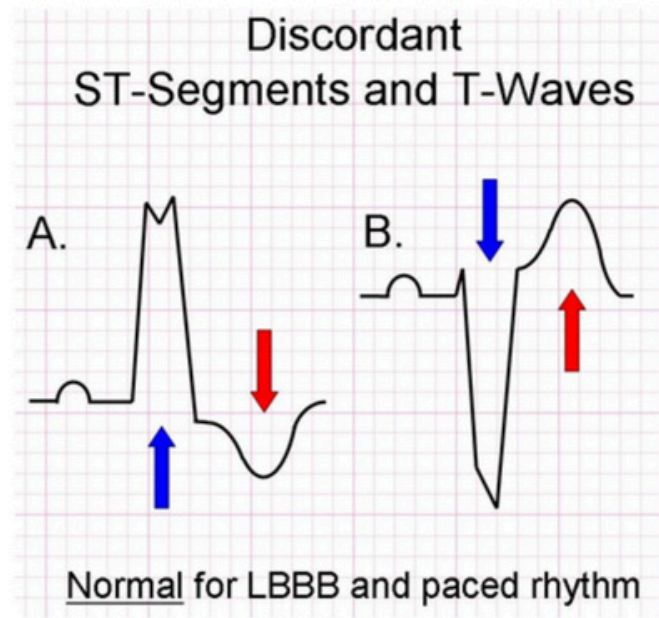
We're diving deep this month into one of cardiology's most frustrating conundrums:

👉 *Is this ST elevation due **just** to the LBBB and the abnormal ST segment that normally occurs **OR** is it truly a reflection of a STEMI?*

What's the big deal?

A bundle branch block increases the length of time of ventricular depolarization resulting in a widened QRS complex. There are a variety of reasons for a wide QRS with a BBB being the most common reason. A wide QRS complex causes **ST segment discordance**, meaning the ST segment shifts in the opposite direction of the QRS. See below:

Discordance Normal with Wide QRS



This is where things get tricky: this ST discordance can **mask** or **mimic** a STEMI, meaning it can hide a STEMI when there is a STEMI occurring, or it can look like a STEMI when a STEMI is not occurring, complicating ECG interpretation during an acute coronary event.

How do you know there's a BBB?

First, let's keep it simple.

Second, look for a sinus rhythm with a **wide** QRS complex.

Next, go straight to lead V1 on a 12-Lead ECG:

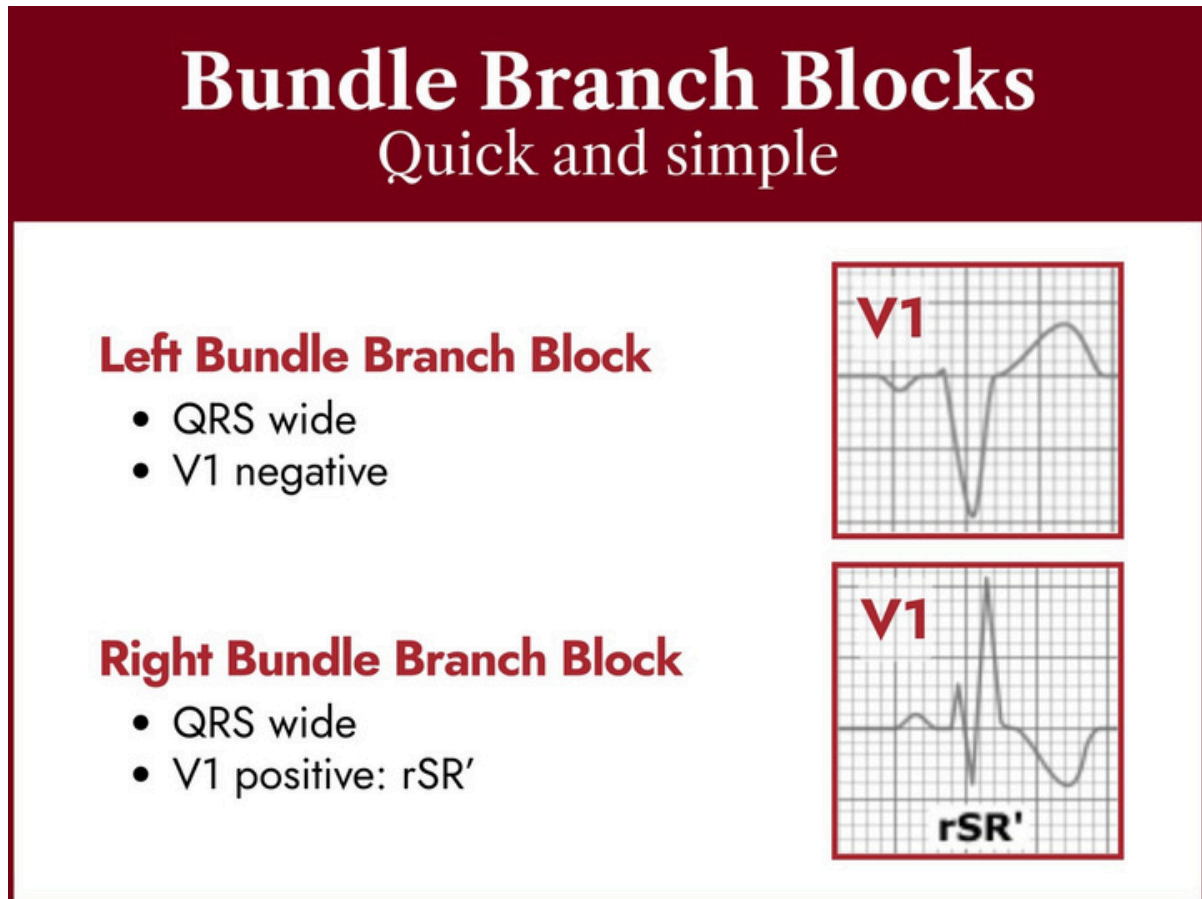
Left Bundle Branch Block (LBBB)

☞ In V1, the QRS is predominantly negative 💡 Think "down low = Left"

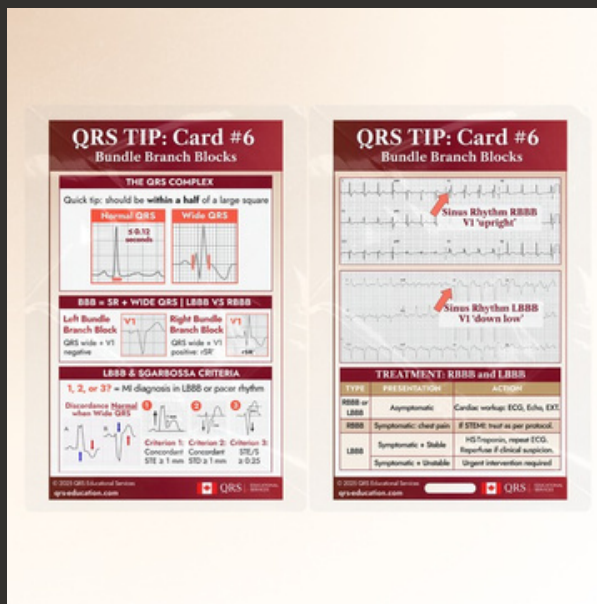
Right Bundle Branch Block (RBBB)

☞ In V1, the QRS is predominantly upright 💡 Think "up right = RBBB"

Take a look:



Product Spotlight: Pocket Card #6 – Bundle Branch Blocks



Wide QRS got you second-guessing? Meet the newest in our lineup, **Pocket Card #6** makes **bundle branch blocks** clear — from QRS clues to Sgarbossa Criteria to treatment. **Durable. Information-packed. Pocket-ready.**

*Please note this is a mockup image only. Final product design and finish will slightly differ in appearance.

**Get your
pocket card
today!**

⚠️ The Diagnostic Dilemma: is this ST elevation because of the wide QRS or because there is a STEMI?

There are **mismanagement risks** associated with BBB, especially a LBBB: Treating one as a STEMI when one isn't happening can lead to unnecessary interventions and risks. Missing a STEMI with a LBBB when one is actually happening will delay reperfusion and cost myocardium.

If a new BBB appears in a symptomatic patient, ask why and act fast. A sudden LBBB may be a red flag for a myocardial infarction.

The LBBB Guideline Pendulum

As a CCU nurse in the pre-reperfusion era, I witnessed poor outcomes in patients with chest pain and LBBB. Trials like GUSTO and ASSENT revolutionized care with fibrinolytics but patients with LBBB having a STEMI were excluded because there was not certainty the LBBB was an actual STEMI. Later evidence from these earliest trials revealed poor outcomes when lytics were withheld as many with a LBBB + symptoms had proximal LAD occlusions. So, the guidelines changed from *“Don’t treat LBBB + chest pain”* to *“Treat presumed new LBBB + MI symptoms”*.

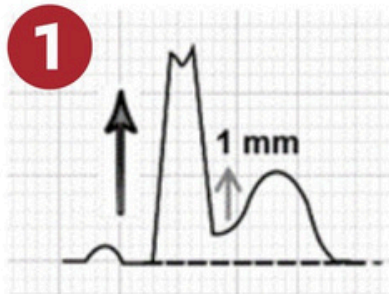
New research then showed that not all LBBB + chest pain = STEMI. Concern about overtreatment led to more conservative guidelines guided by Dr. Elena Sgarbossa. The original Sgarbossa Criteria helped in making a diagnosis of a STEMI in the setting of a LBBB, but were too restrictive, leading to missed STEMI.

Then in 2013, the Smith-Modified Sgarbossa Criteria improved diagnostic accuracy by identifying:

1. Concordant ST elevation
2. Concordant ST depression
3. Proportional ST elevation (relative to preceding S wave)

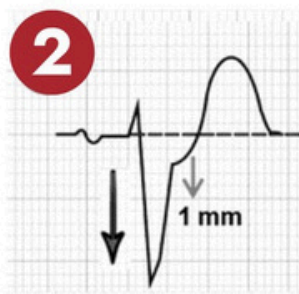
Important caveat: A negative Sgarbossa score does *not* rule out MI.

LBBB and Smith-Modified Sgarbossa Criteria



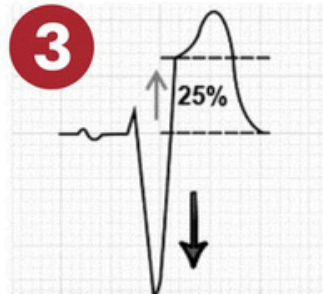
Criterion 1:

Concordant
STE ≥ 1 mm



Criterion 2:

Concordant
STD ≥ 1 mm



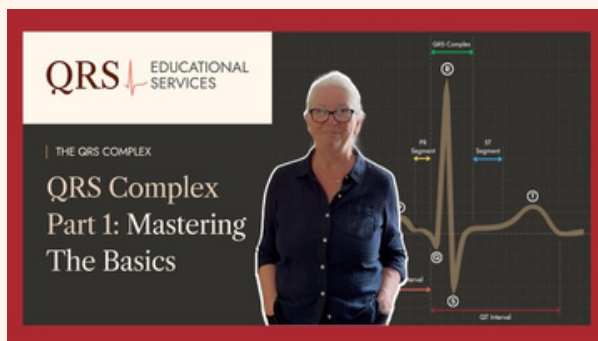
Criterion 3:

STE/S
 ≥ 0.25



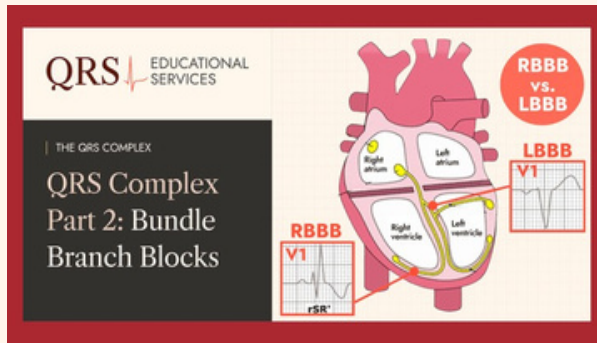
NEW MICROLEARNING SERIES!

We're excited to share our new microlearning **3-part video series on the QRS Complex**.



Build your foundation in ECG interpretation by **mastering the basics** of the QRS Complex.

**Click to
watch!**



Learn to recognize, understand, and differentiate **bundle branch blocks**.

Click to watch!



Explore how to apply the **Smith-Modified Sgarbossa Criteria** when assessing ECGs.

Click to watch!

My Take

An ECG with LBBB isn't 100% sensitive or specific for MI. Context is key. Remember that the presence of meeting Smith-Modified Sgarbossa criteria is an extremely high predictor of a STEMI with a LBBB; however, the absence does not rule out a STEMI.

I'd love to hear about your experiences with this topic. As a travelling nurse educator, I'm always fascinated by the different ways this presentation is handled across settings. Of note, the 2025 ACC/AHA/NAEMSP/SCAI Guidelines for ACS management have not provided specific updates to the management of LBBB.

Warm regards,

References

Rao, O'Donaghue, Ruel, et. Al., American Heart Association: Clinical Practice Guidelines for the Management of Patients with Acute Coronary Syndromes. *Circulation* April 2025.

Cai Q, Mehta N, Sgarbossa E. *Am Heart J*. 2013

Smith S, et al. *Ann Emerg Med*. 2012

Sgarbossa E, et al. *N Engl J Med*. 1996



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