

Poor Precordial R Wave Progression

DISCUSSION

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Female

Vent. rate 96 bpm
PR interval 164 ms
QRS duration 118 ms
QT/QTc 376/475 ms
P-R-T axes 53 -73 85

Normal sinus rhythm
Abnormal ECG

Recorded 2011

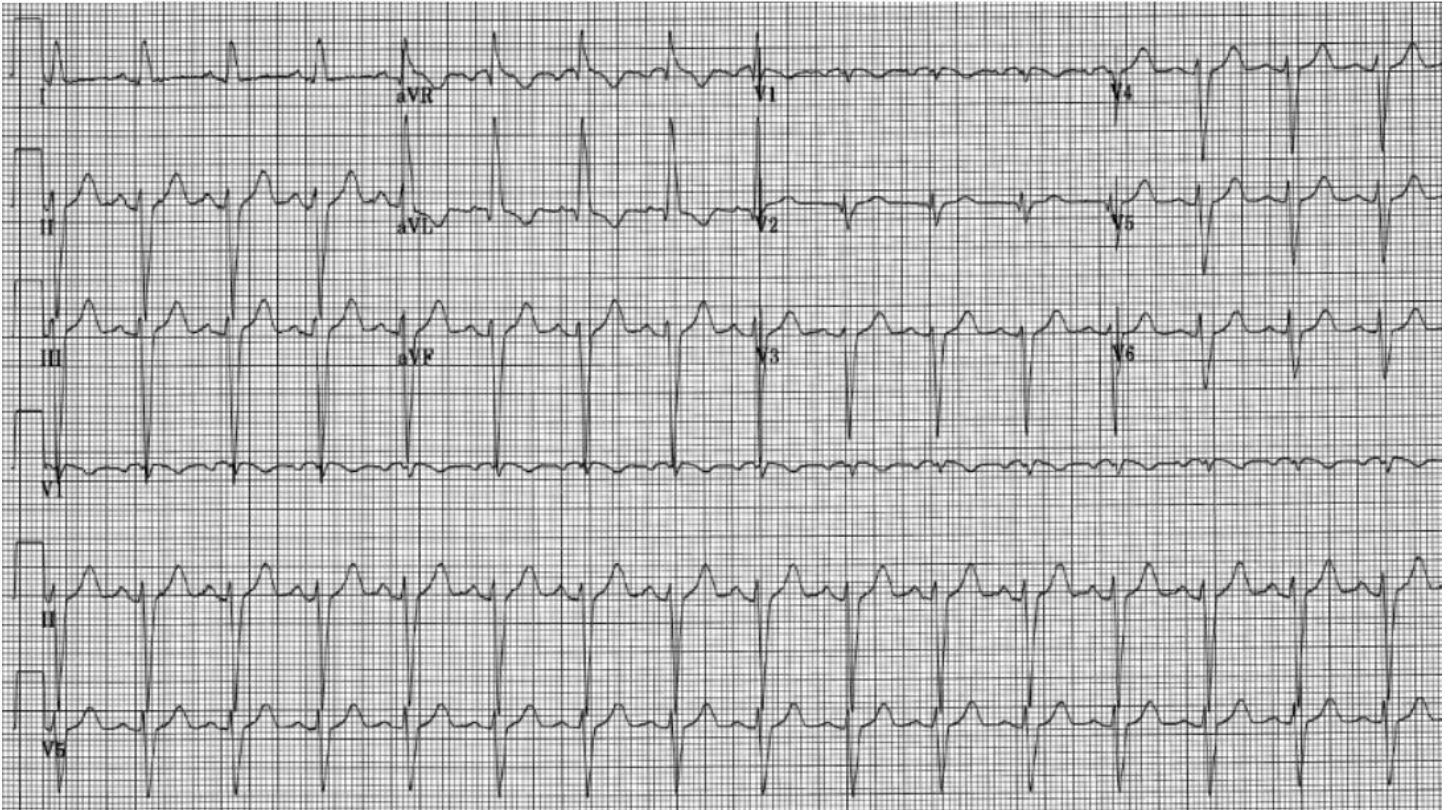


Figure 1

This ECG was recorded in an emergency room on an 88 year old female. I do not know why she presented to the ER, but let's assume – for teaching purposes – chest pain and shortness of breath.

If you rushed to state that there is a “poor precordial R wave progression” on this ECG, my response would be, “So? What are you trying to tell me?” That would be my reply BECAUSE SO FAR YOU HAVEN'T TOLD ME ANYTHING! Are you trying to tell me that there is an old anterior MI on this ECG? Good guess! There actually IS a remote septal MI present on this ECG... but you should not have diagnosed it based on a “poor precordial R wave progression!”

What else tipped you off that there is a previous septal MI present? Was it the qs complex in Lead V1? That is only supporting evidence but it certainly is NOT diagnostic! The diagnosis is made by the small q wave in Lead V2 which should NEVER be present! That is

NOT a septal q wave! There are NEVER any septal q waves in Leads V1 or V2! That is how I diagnosed the old MI, but let me assure you that the qs in Lead V1 and the “poor precordial R wave progression” played absolutely NO PART in my DIAGNOSIS! They were *supportive* findings but NOT *diagnostic*! Why? Because there are other causes of a qs (or QS) complex in Lead V1 that are more common than a previous MI and there are many more causes of “poor precordial R wave progression” than a previous MI.

“Poor precordial R wave progression” is *an electrocardiographic symptom – NOT a diagnosis!* When you see a “poor precordial R wave progression” think first of advanced COPD, anterior fascicular block or a Type C right ventricular hypertrophy (RVH). Yes, you read that correctly – RVH!

Here’s a PEARL for you: for a Q wave (or q wave) to be designated a Q wave, it must be followed by an R (or r) wave; if not, then it is a QS (or qs) complex. Since a qs complex – or even a qR complex – in Lead V1 *may not* represent a previous MI, we depend heavily on a Q (or q) wave in Lead V2 (or Leads V3 and V4) as being unequivocally diagnostic.