Positive QRS complex in limb lead 2 with negative QRS in lead 3 on surface electrocardiogram is not indicative of a Right sided accessory pathway.

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Abstract

We read, with interest, the article by Deb et al. entitled *"Positive QRS complex in limb lead 2 with negative QRS in lead 3 on surface electrocardiogram: A novel predictor for anterior location of right sided accessory pathways."* [1] We would like to raise a few concerns regarding the interpretation of the electrocardiographic (ECG) sign they have highlighted.

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We read, with interest, the article by Deb et al. entitled *"Positive QRS complex in limb lead 2 with negative QRS in lead 3 on surface electrocardiogram: A novel predictor for anterior location of right sided accessory pathways."* [1] We would like to raise a few concerns regarding the interpretation of the electrocardiographic (ECG) sign they have highlighted.

1. The authors propose that inferior lead discordance (ILD) with a positive in Lead 2 and negative in Lead 3 is indicative of a right anterior accessory pathway (AP); this relies on QRS polarity rather than delta wave polarity. This would imply that this sign would have the same implication as ventricular arrhythmia arising from the site of AP insertion. Based on this assumption, one would conclude that ILD would be an indicator of a "Para-Hisian" location of the AP rather than being removed from it as the authors conclude.[2]
2. Further analysis of the ECGs in Figure 2 shows us that the QRS transition is beyond V3 in all ECGs except the third one (ECG c).*D'Avila et. al.* [3] and *Taguchi et. al.* [4] have shown that a positive QRS in V2, or what we recognize as an early transition from V1 to V2, is indicative of a septal pathway while a late transition is indicative of a right sided pathway. So, based on this ECG finding, one would diagnose a right sided pathway away from the septum. This simple sign was not highlighted in the article.
3. *D'Avila et. al* .[3] have already published that a positive QRS in Lead II and a negative in Lead III is indicative of a Right sided pathway, suggesting the sign described in this article is not novel.. This makes intuitive sense too since right sided pathways would be expected to have greater negativity in Lead III. The authors of this author did not use the term "inferior lead discordance"
4. The authors use this sign as indicative of a right anterior location while we believe a right lateral pathway may also have a negative Lead III. *Sternick et. al.* [5] described the ECG features of right sided pathways, especially atriofascicular pathways; in their publication one can see an atriofascicular pathway with the same discordance identified by the authors of this publication. We have also observed this discordance in most of the posteroseptal accessory pathways we have ablated from the right side. (unpublished)

In conclusion, we disagree with the authors and believe that this proposed "discordance" is an oversimplification, and not reliably indicative of a right anterior pathway.

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