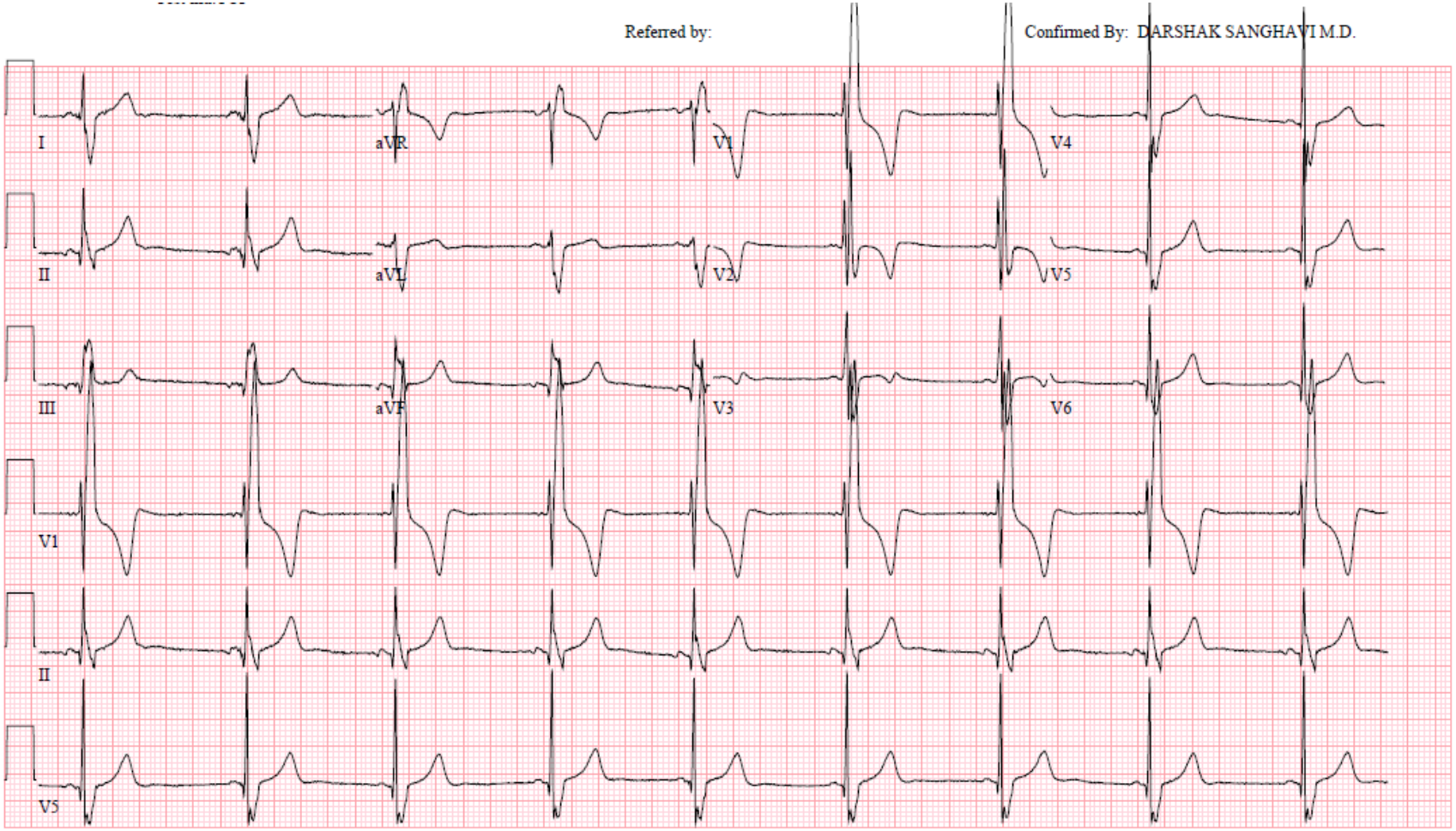
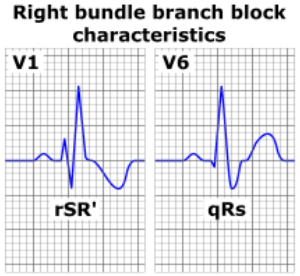
The week's EKG is from a 12 year old boy with a history of repaired tetralogy of Fallot with pulmonary stenosis. This is a normal rhythm, but the QRS complex looks funny.

1. Rate, rhythm, axis?
2. What is the proper term for the problem causing the abnormal QRS complex?
3. Why does this child have this finding?
4. Can you name at least 1 other condition where you would see this pattern?



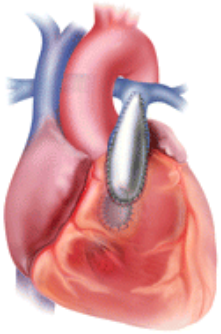
The week's EKG is from a 12 year old boy with a history of repaired tetralogy of Fallot with pulmonary stenosis. This is a normal rhythm, but the QRS complex looks funny.
1. Rate: 50, not sinus, axis ~90
2. What is the proper term for the problem causing the abnormal QRS complex?



Answer: This is a complete right bundle branch block. This is present given the wide QRS (> 110msec) and the predominant positive deflection and “rabbit ears” look in V1.

3. Why does this child have this finding?

Answer: It is a normal complication of the incision made in the right ventricle, in which a patch is placed to open up the stenotic pulmonary valve, and some osbtructing muscle bundles are removed. This surgery severs some of the conduction tissue in the right ventricle, resulting in the RBBB (see picture to the right).



4. Can you name at least 1 other condition where you would see this pattern?.

Answer: Other causes include large ASD (apparent RBBB occurs because the RV becomes dilated from excess volume load), myocarditis (from inflammation of the conduction system, which slows conduction), and several other causes.

For further reading, Medscape has some information at http://emedicine.medscape.com/article/894927-overview

Bonus: The rhythm in this patient does not appear to be sinus as the p wave in lead aVF has a negative deflection. Therefore, this rhythm likely originates in the low right atrium (remains positive in lead I) and is essentially a normal variant.