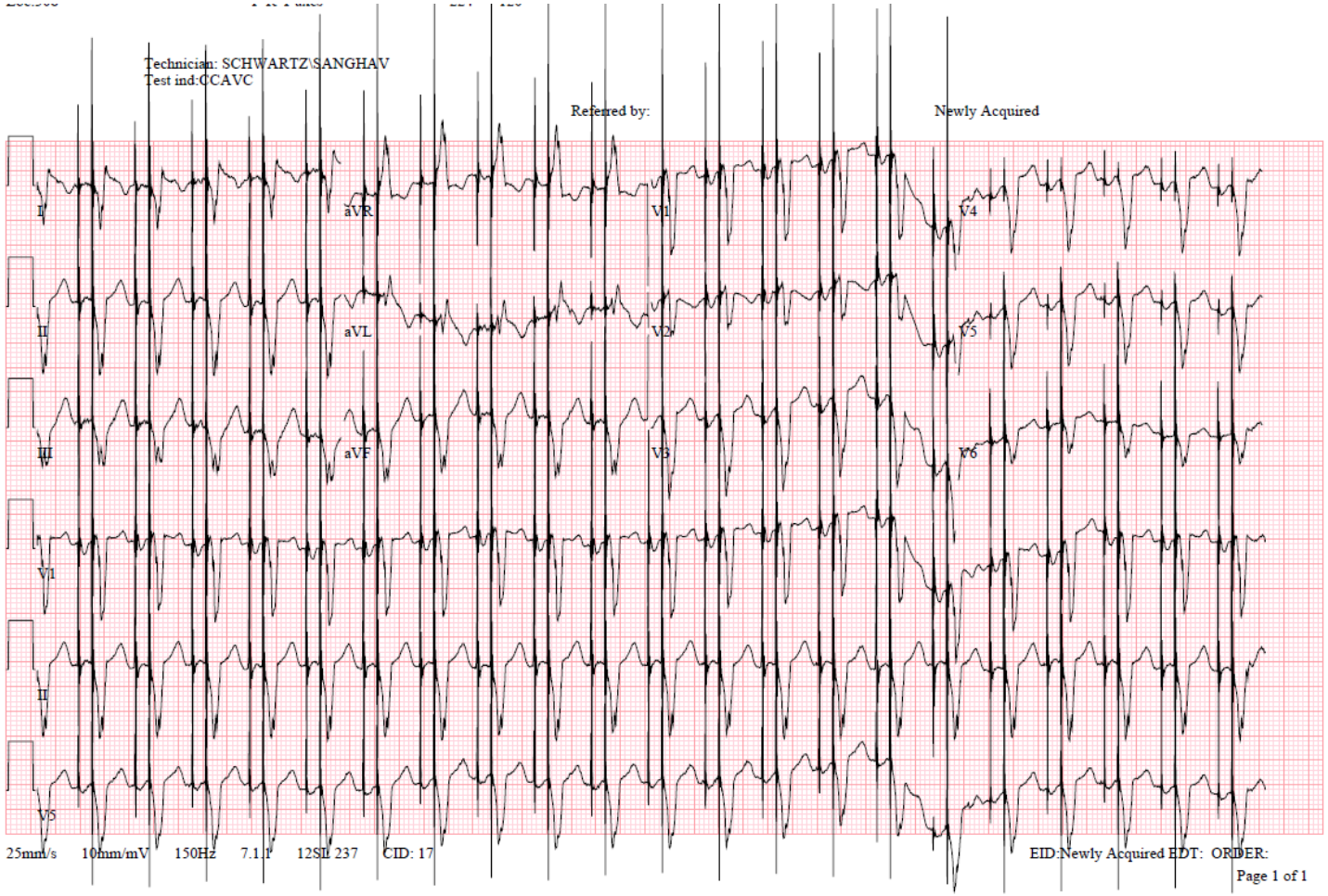
EKG of the Week Aug 9 2010

This EKG is from a 1-year-old female with known cardiac disease seen in the cardiology clinic this week.

1. What is the name of the underlying rhythm problem that this child has?
2. Describe the patient's rhythm at this time, and the therapy that was used to treat the underlying problem.
3. Name one structural (congenital) and one acquired cause of this underlying rhythm problem in young children.



ANSWER FOR EKG of the Week Aug 9 2010

This EKG is from a 1-year-old female with known cardiac disease seen in the cardiology clinic this week.

- What is the name of the underlying rhythm problem that this child has?

This child has underlying third-degree ("complete") heart block, with no A-V conduction.

- Describe the patient's rhythm at this time, and the therapy that was used to treat the underlying problem.

This child has dual chamber (that is, both the atrium and ventricle) pacing, achieved by implanting a pacemaker. Note that the P wave is preceded by a spike, and then the wide-complex QRS is also preceded by a pacing spike. (The QRS is wide complex since the impulse does not propagate normally via the AV node, but instead like a premature ventricular contraction, via a pacing lead inserted into the ventricular myocardium.)

- Name one structural (congenital) and one acquired cause of this underlying rhythm problem in young children.

A structural defect causing complete heart block is L-transposition of the great arteries, and an acquired cause is maternal lupus (anti-SSA and anti-SSB antibodies) which cause destruction of the AV conduction tissue. Bonus: Another cause of acquired heart block can be Lyme disease or a AV node injury from cardiac surgery.