2 Year Old with AVSD s/p Surgery Requiring Cardiac Pacemaker

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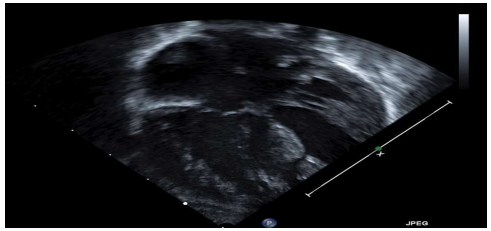
Background

- Post-operative heart block is one of the most threatening complications of surgical atrioventricular septal defect (AVSD) repair.
- Incidence of transient heart block is 2.3%, and lasts between 1-14 days (1).
- Permanent heart block occurs in 1.4% of cases, and pacemakers are implanted 6-20 days post-op (0.9% of cases) (1).
- Late onset heart block has been known to occur up to 16 months, with incidence of 0.3% (1).

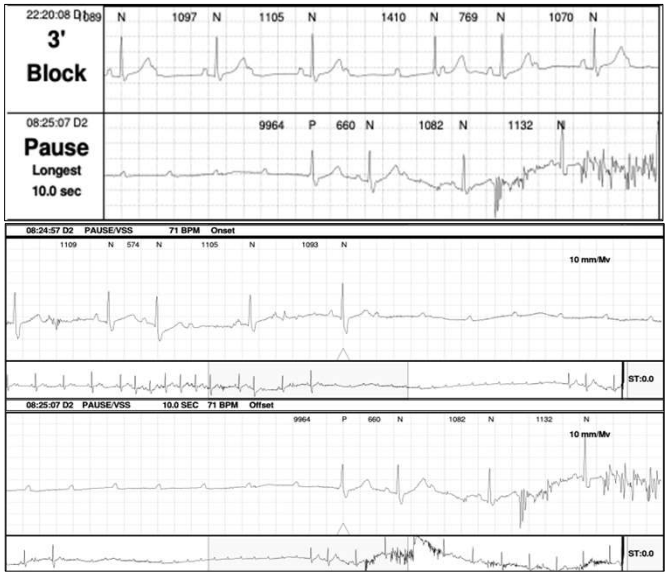
Case Presentation

- 2-year-old female with PMH of AVSD at birth and equivocal deletion in the DiGeorge region of chromosome 22 presented to clinic for follow up.
- At six months of age, underwent cardiac surgery with two-patch repair of AVSD.
- Operative record noted transient third degree heart block in the operating room with spontaneous recovery of normal sinus rhythm.
- Seen once for a post-op visit in the following month, but then lost to follow-up.
- Two years later, repeat ECG was concerning for second degree heart block.
- 72-hour holter data showed intermittent and unreliable atrioventricular conduction consistent with third degree heart block.

Diagnostics



Apical four chamber view demonstrating complete balanced atrioventricular canal defect (primum ASD, inlet VSD, common AV valve)



Pauses occurred 47 times, the longest of which was 10.0 seconds

Management

- The patient underwent urgent placement of an epicardial dual chamber Medtronic device without complications.
- Parents reported that she has been more active and energetic after receiving the pacemaker.

Conclusion

- Pacemaker is indicated for postoperative 2nd or 3rd degree AV block that is not expected to resolve or persists >7 days after cardiac surgery (Level B) (2).
- Permanent pacemaker not indicated for transient postoperative AV block that converts to normal AV conduction in an otherwise asymptomatic patient (Level B) (2).
- This case illustrates that third degree heart block can occur anytime after cardiac surgery for congenital heart disease.
- Emphasizes the importance of lifelong cardiology follow-ups.

References

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- Perez: Nothing to disclose.
- Dyke: Nothing to disclose.
- Panchangam: Nothing to disclose.