Tunnel Vision to Code Blue: The Perils of a Consulting Provider

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Introduction

- Cardiomyopathy in the pediatric population is a difficult diagnosis to make. Often discovered during the workup for other illness, cardiomyopathy presents a challenge to the anesthesiologist when unrecognized.
- Cardiomyopathy is exceedingly rare in pediatrics, present in approximately 1 in 100,000 children. Most diagnoses are made before the age of 12 months old.

Case Report

Our patient is a 10 year old African American Male who presented for a Renal Biopsy under Interventional Radiology guidance. Our patient had a PMH significant for Complex Partial Seizures at the age of 3 for which he was treated with Carbamazepine, last seizure at age of 5 and weaned off medication. Five months prior to presentation he was diagnosed with Streptococcal Pharyngitis confirmed by ASO testing. He was treated with antibiotics with resolution of symptoms. He returned to clinic two weeks afterwards with swelling, fatigue, nausea and vomiting. His workup included a urinalysis which showed large blood and 2+ proteinuria. Patient was diagnosed with Poststreptococcal Glomerulonephritis, and treated with steroids. He returned to his PCP for repeat UA showing resolution of proteinuria, but persistent microscopic hematuria. Eight weeks later he presented to his PCP for episodes of emesis and epigastric pain, for which he was diagnosed with gastritis secondary to antibiotic and steroid use, treated with omeprazole. Eight weeks later he followed up with nephrologist for PSGN. Noted to have continued and worsening edema. Differential diagnosis of IgA nephropathy vs. RAAS activation vs. Vasculitis vs. Immune Complex Mediated MPGN vs. Cardiomyopathy considered. Patient scheduled for IR guided renal biopsy. On day of surgery, patient was noted to be edematous and lethargic, which was patients state of health for past month. Initial VS: HR 130, BP 94/73, SpO2 100 % on RA, RR 25. Patient was taken to IR suite, induced with 80 mg (2mg/kg) Propofol, 60 mg (1.5mg/kg) Succinylcholine and intubated. Initial VS HR 130, BP 98/45, SpO2 100%, PCV.

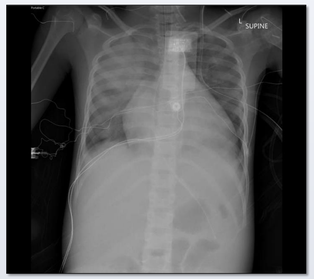

Figure 1: Chest X-Ray

Figure 2: EKG

Case Report

Patient turned from supine to prone for procedure with resultant Bradycardia. 0.4 mg Atropine administered without improvement. Patient immediately turned from prone to supine for bradycardia, HR noted 45 bpm. Upon supination, patient noted to be asystolic on monitor and pusleless. CPR immediately initiated, with three rounds of Epinephrine given before ROSC. Patient taken to PICU on dopamine drip. Workup of pathology ensued with EKG and Chest X Ray displayed above.

Patient underwent an echocardiogram showing a dilated cardiomyopathy with global hypokinesis, systolic and diastolic dysfinction. Patient treated with diuresis; dopamine was changed to epinephrine for hypotension. Patient was extubated on day 8 of hospitalization . He was transitioned from epinephrine to digoxin and discharged after 21 days of hospitalization. His heart function slowly and mildly improved. Patient continues to follow with pediatric cardiology for monitoring.

References

- AAP Policy statement. The Pediatrician's Role in the Evaluation and Preparation of Pediatric Patients Undergoing Anesthesia. *Pediatrics.* 2014.
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Discussion

- In reflection of this case, it was apparent that the child was in heart failure on presentation for procedure, however signs and symptoms were attributed to nephrotic syndromes and re-assured by nephrologist on questioning.
- As a consultant, what is our role of involvement in the workup of a sick child? Should we routinely take a full H&P on each child, formulate a differential, and order our won tests to diagnose the medically complicated patient?
- What is our role in patient safety for a diagnostic procedure? In this case we obviously had a sick child with a range of differentials sent for an invasive procedure. Is our role to stop the invasive procedure and require further non-invasive workup (EKG, Echocardiogram, CXR) before taking a patient to the OR?
- How well do the ACC/AHA guidelines pertain to children , specifically to children with Cardiomyopathy. How strongly should we apply these guidelines to children preoperatively?

Conclusion

As a clinician we should consider differential diagnosis when presented with a difficult case . As anesthesiologists, we are the intensivist in the OR and in the perioperative setting, and should guide ourselves as such.

In addition if there is suspicion that further workup should be warranted before taking a child into the OR, have a low threshold to order non invasive diagnostic tests., especially in the pediatric population where ACC/AHA guidelines have limited application.

Awareness of Pediatric Cardiomyopathy, signs, symptoms and it's implications to anesthetic management is paramount to clinicians who practice in this subspecialty.