Pediatric “Stroke” due to Left Ventricular Myxoma

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Background

Most pediatric cardiac tumors are of primary cardiac origin and are relatively rare with an incidence of less than 3%.[1] Types of pediatric tumors include rhabdomyoma, teratoma, fibroma, and least of these, myxoma.. The majority of myxomas in pediatric patients are found in the left atrium. We describe a case of a 14 year-old with a left ventricular myxoma. Not only is this a rare location, but these types of tumors usually present asymptomatically.

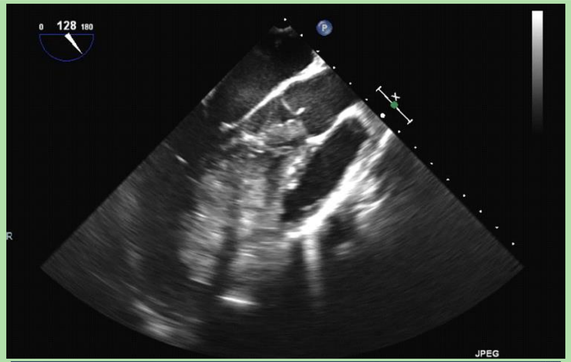
Significance of the Case

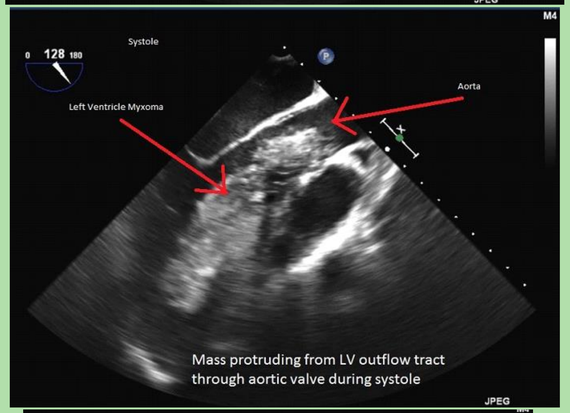
A LV myxoma is a rare cause of stroke in pediatric patients. Although myxomas are benign tumors, their location in the heart can lead to outflow obstruction, which can impede cardiac flow. This impedance can sometimes lead to syncopal events and even sudden cardiac death.

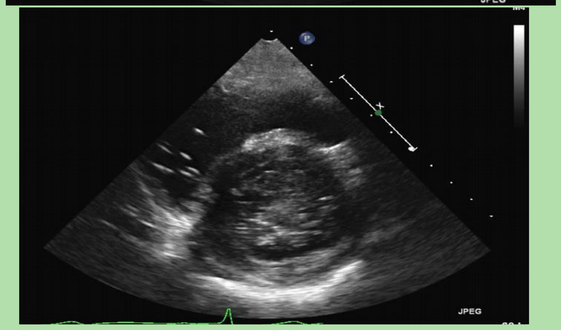
Patient Description

A 14 year-old female presented to an outside ED after an episode of acute stroke-like symptoms including hemiparesis and expressive aphasia. She had a previous episode of heart racing and pressure in her chest a few days before at dance practice, which resolved after rest. Significant findings showed elevated troponins and T-wave inversions. By the time she presented to our Pediatric ED, neurologic symptoms had completely resolved, and both the chest x-ray and head CT showed no obvious abnormalities. An echocardiogram showed a large mass in the LV that obstructed the LV outflow tract during systole. The patient was taken to the operating room within four hours of the echocardiogram results.

Echocardiogram







Surgical and Anesthetic Course

The patient underwent a complex surgical resection under cardiopulmonary bypass. The initial surgical approach showed that the entire LV outflow tract and most of the LV cavity was completely filled with friable tumor. The pedicle of the tumor arose from the interventricular septum toward the left lateral free wall. The initial surgical approach included cannulation of the right atrium and ascending aorta, however, this did not allow for adequate access to the entire tumor. For better visualization, both the Superior and Inferior Vena Cava were cannualized for an extended superior septal approach. The anesthestic course was uncomplicated with the patient extubated several hours after surgery in the ICU.

Conclusion

The stroke symptoms in our patient initiated a prompt medical evaluation in a tertiary center, which the led to the transfer of the patient to our pediatric specialty hospital. A relatively quick diagnosis and prompt surgery likely saved the patient from further thromboembolic events. In this case, the mass was friable and likely contributed to its thromboembolic nature and symptom presentation. Myxomas are known to reoccur approximately 7% of the time, sometimes attributed to incomplete removal of the tumor.[2] In this case, the surgeon was able to remove the entire tumor, including the stalk. The patient was discharged home on hospital day three with no complications and no residual neurologic deficit. The only findings at the follow up appointment 2 weeks later were 1st degree AV block and inverted T-waves in inferolateral leads.

References

1 Reddy SN, Sunil G S, Kumar RK. Surgical removal of a left ventricular myxoma in an infant. Ann Pediatr Card 2013;6:179-81.
2 Schroeder L et al. Left Ventricular Myxoma. *J Ped* (2016) 168: 249.