Undiagnosed Renal artery stenosis in a 19-month-old undergoing MRI

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INTRODUCTION

Hypertensive crisis is rare in the pediatric population and if present it is usually a secondary hypertension (1). Taking the blood pressure for a child can cause anxiety to the patient, which alongside the rarity of hypertension in pediatric population cause healthcare professionals to sometimes avoid measuring blood pressure during regular doctor visits. We present a case of hypertensive crisis during an MRI in one of the youngest patient to be reported with an undiagnosed renal artery stenosis.

DISCUSSION

We described a case of undiagnosed hypertension in a 19 month old patient secondary to renal artery stenosis undergoing MRI of the brain. Severe hypertension in a child could be a contributing factor to the child anxiety which was the main reason for the delayed diagnosis of hypertension as well as it could be a contributing factor to the failure to thrive for which the patient presented. Childhood hypertension is very rare and it is usually secondary type of which RAS is the most common cause (1,2). In our patient, we did not measure BP till after she was sedated, it was persistently elevated in spite of the fact that the procedure was non-stimulating and the patient was on propofol drip. We suspected that this is a secondary hypertension.

CASE REPORT

This is the case of 19 months old female patient who presented for an elective outpatient MRI of brain as a part of investigation of failure to thrive experienced by endocrinologist for maternal history of pituitary mass and Cushing’s disease. Blood pressure could not be taken during pre-anesthetic evaluation since patient was very anxious and irritable by the cuff. We elected to do an inhalational induction with sevoflurane in a mixture of oxygen and nitrous oxide. We did an inhalational induction before putting any monitor since the patient was very anxious and apprehensive. After induction, we put monitors on (pulse oxymetry, EKG and BP monitoring) and started an IV access to run a propofol infusion. We could not get a blood pressure reading right away since the cuff kept failing to record a blood pressure given it was too high. The first blood pressure reading was achieved after around 5 minutes from induction and it was 202/133 mmHg with heart rate of 95 bpm and O2 sat of 100%. Subsequent blood pressure readings were lower but still high with the lowest BP recorded was 155/105 mmHg and lowest HR went down to 85 pbm.

After we contacted PICU right away and informed them about the high blood pressure and that this patient needed PICU admission for managing her high blood pressure and for investigating the etiology. At the end of the MRI, we transferred patient to PICU where they started a nicardipine drip to control the hypertension. Upon revisiting with the parents, we learned that her blood pressure was never taken before on any of her previous doctor visits due to her anxiety. Work up for hypertension included serum catecholamine, Doppler of renal arteries, MRA and renal artery angiogram, in addition to endocrinology work up for failure to thrive including GH and thyroid hormone. All results came back negative except MRA of abdomen, which showed narrowing of proximal aspect of right renal artery. That finding prompted an angiogram, which showed bilateral renal artery stenosis that were resistant to conventional balloon angioplasty. Patient was transferred to another facility more specialized in renal artery stenosis cases for further management.

CONCLUSION

In conclusion, despite the fact that hypertensive crisis is rare in children, it is however a very serious but fixable disease most of the time. Anesthesiologist should have a low threshold of suspicion when faced with perioperative hypertension refractory to sedatives. It is always advisable to try to get a pre-operative blood pressure measurement when possible.

REFERENCES