SUCCESSFUL RESUSCITATION FOLLOWING CARDIAC ARREST – PROVINCIDE OR DELIBERATE PRACTICE?

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ABSTRACT

Central venous cannulation is invasive procedure. That too in neonate is challenging process. Cardiac Tamponade is very known and serious complication. Bradyarrythmia during procedure is one of the sign of it. Possibility of arrest after bradycardia during cannulation must be kept in mind. And prompt successful resuscitation helps to save life. Neonatal resuscitation requires skillful steps by neonatologists, pediatricians and anaesthesiologists. Our department of anaesthesiology regularly gives such simulation based training to our trainee anaesthesia residents. We present a successful resuscitation by our team to a neonate during central venous catheterization.

KEYWORDS: bradycardia, neonatal resuscitation, simulation.

INTRODUCTION

Neonatal central vein cannulation is invasive procedure. USG guided IJV cannulation preferred over conventional method. Known complication of this are cardiac tamponade, arrhythmias, pneumothorax or carotid puncture. anaesthesiologists. We have came across such case and we have resuscitated that neonate with our trainee resident team.
CASE REPORT

Central vein cannulation in neonates is a challenging procedure. There are reports of sinus tachycardia, ventricular premature beats and ventricular tachycardia during catheter insertion. We report a bradycardia and arrest scenario following guide wire insertion in a neonate.

A 26 day old, 1.2 kg neonate was posted for ultrasound guided central venous cannulation. This preterm neonate had been operated twice for large bowel obstruction. Laboratory reports revealed Hemoglobin of 8gm% and platelet count 20,000/cu.mm.

With all standard monitoring, and with Ultrasound guidance, a 4Fr guide wire was inserted 5-6 cms into the right internal jugular vein. There was sudden fall in heart rate from 132 to 102 /minute. As we were already administering 100% Oxygen, we administered Inj. Atropine 100ug IV. The guide wire was withdrawn slightly. However, despite adequate oxygenation and ventilation, the heart rate further dropped to 52/minute. Immediately, Cardiopulmonary cerebral resuscitation (CPCR) was commenced using two thumb technique with 15:2 compression ventilation ratio as per American Heart Association (AHA) guidelines. Inj. Adrenaline 0.1ml/Kg (1:10000) was given. The baby was intubated with 3.5 mm endotracheal tube. Return of spontaneous circulation was achieved in approximately 2 minutes. Meanwhile successful central venous cannulation was performed using the Seldinger’s technique and baby was shifted to the neonatal intensive care unit on ventilatory support.

DISCUSSION

Sometimes guide wire may enter right atrium and ventricle trigger arrhythmias. Ventricular premature contractions and ventricular tachycardia are commonly seen. Our patient developed bradycardia and arrest after guide wire insertion. Vigilant monitoring and knowledge of neonatal resuscitation helped us to save the neonate. Also, one week prior to this incident, the anaesthesia team had attended simulation training in cardiac arrhythmia management. There is limited evidence yet that simulation training translates into improved clinical outcomes. However, there are several reports of successful implementation of cardiac arrest algorithms following simulation training. Medical teams require practiced interactions and communications to be effective and efficient. There are a number of teamwork principles that can be taught effectively using simulation, including leadership,
followership, situational awareness, closed loop communication and workload management.\[5,6\]

**CONCLUSION**

We believe that simulation training helped our trainee residents to perform resuscitation steps in this scenario correctly and confidently. Simulation training should be integrated into the anaesthesiology curriculum to improve patient safety.

**REFERENCES**