



SUCCESSFUL RESUSCITATION FOLLOWING CARDIAC ARREST – PROVIDENCE OR DELIBERATE PRACTICE?

Vaishali Chaskar^{1*}, Nandini Dave² and Navnath B. Jondhale³

¹DNB, Fellow Paediatric Anaesthesia, Assistant Professor, Anaesthesia Seth GS Medical College & KEM Hospital, Mumbai.

²MD, DNB, MNAMS, Professor (Additional), Anaesthesia, Seth GS Medical College & KEM Hospital, Mumbai.

³D.A. Trainee Resident, Anaesthesia, Seth GS Medical College & KEM Hospital, Mumbai.

Article Received on 01/01/2017

Article Revised on 21/01/2017

Article Accepted on 12/02/2017

*Corresponding Author

Dr. Vaishali Chaskar

DNB, Fellow Paediatric
Anaesthesia, Assistant
Professor, Anaesthesia
Seth GS Medical College
& KEM Hospital,
Mumbai.

ABSTRACT

Central venous cannulation is invasive procedure. That too in neonate is challenging process. Cardiac Tamponade is very known and serious complication. Bradycardia 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 come 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.^[1] 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.^[2] 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.^[1] 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.^[3,4] 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

1. Tu S, Wang X, Bai L, Wang H, Ye M, Shi Y, Wu S, Liu X, Wei G. Complications of 1309 internal jugular vein cannulations with the anatomic landmarks technique in infants and children. *J Vasc Access*, 2012; 13(2): 198-202.
2. Part 15: Neonatal Resuscitation. 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*, 2010; 122(suppl 3): S909-S919.
3. Wayne DB, Didwania A, Feinglass J, et al. Simulation-based education improves quality of care during cardiac arrest team responses at an academic teaching hospital: a case-control study. *Chest*, 2008; 133(1): 56–61.
4. Smith HM, Jacob AK, Segura LG, et al. Simulation education in anesthesia training: a case report of successful resuscitation of bupivacaine-induced cardiac arrest linked to recent simulation training. *Anesth Analg*, 2008; 106(5): 1581–4.
5. Park CS. Simulation and Quality Improvement in Anesthesiology. *Anesthesiology Clin*, 2011; 29: 13–28.
6. Hunt EA, Shilkofski NA, Stavroudis TA, Nelson KL. Simulation: Translation to Improved Team Performance. *Anesthesiology Clin*, 2007; 25: 301–319.