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Original Research Paper

Anesthesiology

FIXED DILATED PUPIL- A NIGHTMARE FOR ANAESTHESIOLOGIST

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ABSTRACT Cuffed endotracheal tube is the gold standard of airway control in anaesthetized patients and in those patients, who have unprotected cough reflex. Along with the expertise in technique of insertion of endotracheal tube, its physical as well as functional integrity is essential. According to anaesthesia (ASA/ASTM) standards, pre checking of endotracheal tube (ETT) is must, which involves visual inspection along with observation of inflated cuff. We here describe a case of manufacturing defect in endotracheal tube which could not be detected by routine endotracheal tube checking.

KEYWORDS : Dopamine, Fixed dilated pupils.

INTRODUCTION

Dilated and fixed pupils usually signify some critical event.Pupillary assessment is one of the basic parameters that can point toward neurological diseases, intracranial hemorrhage, persistent hypoxia or hypotension, head injury, drug induced mydriasis and also relate to poor prognosis specially in critically ill patient.[1]Bilaterally dilated and fixed pupils during intraoperative period is scary for the anesthesiologist.

Case report

A 58-year-old male patient ASA Grade II with diagnosis of Carcinoma caecum was scheduled for elective right hemicolectomy.He had history of Pulmonary Tuberculosis and was treated under DOTS Category- I and cured. Stable preoperative vitals.Electrocardiogram (ECG) showed sinus rhythm. Laboratory tests were all within normal limits.

In the operating room, standard monitoring was attached(NIBP, ECG, SpO_2) with blood pressure 130/69 mmHg, HR 84 beats/min and Spo2 99 %. Thoracic Epidural was placed at T9-10 intervertebral space.General anesthesia was induced by midazolam 1.5 mg, Fentanyl 120 μg intravenously (IV), and propofol 140 mg IV. Tracheal intubation was facilitated by atracurium 30 mg IV and done with 8.5 mm ID cuffed ETT.Anesthesia was maintained with Isoflurane (0.5-1%) with oxygen (FiO_2 = 0.4) and nitrous oxide.Ventilation was controlled with a tidal volume of 440 ml at 12 breaths/min.

After 90 minutes of start of surgery, there was an episode of hypotension due to bleeding at surgical site, the blood pressure and heart rate was 81/44 and 102 bpm respectively.The patient was resuscitated with 500 ml of ringer lactate and dopamine infusion was started at the rate of 10mcg/kg/min. After 15 min, bleeding was controlled and dopamine infusion was tapered along with transfusion of packed RBC's. Dopamine infusion was terminated after 30 minutes.The rest of the surgery was uneventful with total duration of three and half hours.

Before extubation pupils were examined and were dilated and fixed. Patient was reversed with Inj Neostigmine 3.5 mg and Inj Glycopyrolate 0.7 mg. The Decision for extubation was reserved after regaining consciousness to exclude cerebrovascular accident.The patient was extubated after regaining of full consciousness with a possibility of drug induced mydriasis or in this case Dopamine induced pupil dilatation.Then, he was transported to the Intensive Care Unit (ICU) for monitoring and further investigation.Neurological and Ophthalmological consultation was done.The pupils were sluggishly reactive after 2 hours and fully reactive after 4 hours. The patient was discharged without any sequelae.

DISCUSSION

Dopamine have been used since ages for septic or cardiogenic shock.Bilaterally dilated and fixed pupils are not serious side effect of dopamine but it can be misinterpreted as neurological emergency. In our case, neurological and ophthalmological examination gave no support to cerebral damage.Dopamine can be cause of this rare complication at higher doses which may lead to diagnostic dilemma.

A study was reported in literature where five patients were treated with dopamine in severe circulatory shock and developed fixed dilated pupils.[2]

CONCLUSION

We conclude that dilated pupils may relate with dopamine infusion or other drugs used during perioperative period which may be misleading and can lead to over-investigation. In trauma patients, where dopamine is used frequently for persistent hypotension, we should always keep this possibility.

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