Letters to the Editor

ANAESTHESIA FOR CONGENITAL LOBAR EMPHYSEMA

This is with reference to the excellent and thought provoking case report "Anaesthesia for congenital lobar emphysema" (MJAFI 1995; 51 : 53-5). Certain features about the management of the case require clarification as noted below.

1. The authors express surprise at the length of time required to achieve inhalational induction with 0.5% to 1.5% halothane in oxygen and had to revert to intramuscular ketamine to accomplish induction. Why was the inhaled concentration of halothane not increased to 2.5% (or more) to achieve adequate alveolar tension of the anaesthetic agent, especially in a setting of increased functional residual capacity? The inspired concentration of volatile anaesthetic agents is the most important factor to achieve adequate alveolar concentration, and it is under the control of the anaesthesiologist and his machine.
2. Smelling the vaporiser outlet for presence of halothane cannot exclude all the mechanical and technical factors which can give rise to prolonged induction, and is certainly no substitute for an accu-

rately calibrated vaporiser delivering known concentrations of a volatile anaesthetic agent. It is pertinent to know when the last calibration and servicing of the Fluotec Mark II vaporiser was carried out by the proprietary firm, viz. BOC India Ltd.

It is our observation that many sophisticated, expensive, pressure-compensated and temperature-compensated vaporisers regularly used by several service hospitals do not undergo annual calibration and servicing as recommended by the manufacturers. This is due to a lack of specific financial provisions for such calibration and lack of adequate servicing facilities with the authorised channels for repair, viz. EME workshops. It is our recommendation that all vaporisers currently in use in service hospitals should undergo annual servicing and calibration by the service centres of the proprietary firms. This will reduce the hazard of delivery of inaccurate concentrations of volatile anaesthetic agents to critically ill patients. Pending sanction for payment of charges for such calibration by DGAFMS, non-public funds may be utilised.

**Surg Cmde K RAMACHANDRA*,
Surg Lt Cdr S GANGULY+
*CMO, HQ ENC; +Classified Specialist
(Anaesthesiology), INHS Kalyani; Visakhapatnam.**

Author's Reply

1. We agree that the concentration of inhaled halothane could have been increased to 2.5% or more to achieve rapid induction of anaesthesia. We would not have hesitated to do this had the child not had compromised cardio-respiratory function and had he not been anaesthetized for thoracic surgery.
2. The causes of delayed induction of anaesthesia in a patient with emphysema are several. Increased functional residual capacity, ineffective ventilation, ventilation perfusion abnormalities and a right-to-left shunt all contribute to delayed induction. It is difficult to predict the minimum alveolar concentration in such situations. It is also known that infants have increased cardio-vascular sensitivity to inhalational anaesthetic agents. There was thus a possibility of causing myocardial depression and vasodilatation leading to collapse. We therefore preferred to follow

the safer method of ketamine anaesthesia.

3. The best way to monitor the functional state of any vaporiser is to use a concentration analyser (respiratory gas monitor) in breathing circuit. Since we did not have this facility, we resorted to the practical approach of smelling halothane at the patient's end of the breathing circuit to ensure that the patient was getting halothane. It is pertinent to note that the vaporiser which was used in the case, was serviced six months back and thus it can be reasonably assumed that there was nothing wrong with the vaporiser and anaesthesia delivery system.

**Lt Col VP SINGH
Classified Specialist (Anaesthesiology)
MH (CTC) Pune.**