Sir,

Tracheoesophageal fistula (TEF) is a surgical emergency of the neonatal period. This entity is associated with various congenital anomalies, cardiac lesions being the most common which further increases perioperative mortality.[1] Neonatal pneumothorax, a life-threatening condition can lead to increased incidence of mortality and morbidity. Incidence is 1%–2% in neonatal Intensive Care Unit (NICU) due to various underlying respiratory conditions.[2,3] However, intraoperatively, it is less commonly encountered.

A 2-day-old male neonate, born at 35-week gestation, weighing 1.5 kg, was referred to our tertiary care hospital. The presentation was with frothing from the mouth since birth, with no history of feeding. Nasogastric tube when attempted got coiled and was seen at T3–T4 level. X-ray chest confirmed the diagnosis of TEF (Type C) with dextrocardia. Echocardiography revealed large atrial septal defect of 15 mm, ventricular septal defect of 10 mm with enlarged right atrium/right ventricle [Figure 1]. Examination revealed mild tachypnea, no overt signs of respiratory distress and a respiratory rate of 47/min. Bilateral crepitations with conducted sounds were present in both lung fields on auscultation. Preoperative blood gas analysis revealed partial pressure of oxygen of 90 mmHg, partial pressure of carbon dioxide of 45 mmHg and pH of 7.34, with normal electrolyte levels.

Operation theater was prewarmed and prepared for neonatal surgery. Essential monitoring done including invasive arterial from the left femoral artery, a precordial stethoscope placed for heart sounds and breath sounds assessment. Induction had done with intravenous (IV) fentanyl (2 µ/kg), with sevoflurane 4% and 100% oxygen while maintaining spontaneous respiration. Airway secured with a 2.5 mm ID uncuffed endotracheal tube and fixed when bilateral breath sounds were heard. Neonate ventilated manually using a Jackson–Rees circuit with the aim of perceiving the lung compliance and controlling the ventilation and preventing ingress of air through the fistula. Neonate positioned in the left lateral position and air entry reconfirmed and an oral feeding tube size eight placed in the blind upper pouch. The fistula was identified and ligated by the surgeon followed by the esophageal anastomosis. Shortly thereafter, there was sudden bradycardia, heart rate decreased from 150/min to 50/min and became inaudible on auscultation. Breath sounds too became inaudible on the left side. The probability of pneumothorax was considered and meanwhile, injection adrenaline 10 µg IV bolus was administered for hemodynamic changes. Chest tube size 12 Fr with drain was inserted. Heart rate started to increase immediately, and on auscultation, breath sound became equal on both lung fields and heart sounds were audible. Surgery was uneventful. Postoperatively, the neonate was extubated and shifted to NICU.

Reports pertaining to perioperative neonatal pneumothorax are very limited. Iannoli and Litman reported one while performing a flexible fiberoptic bronchoscopy.[4] The use of bougie for reintubation or in the management of difficult airways in neonatal emergencies had been correlated with the occurrence of pneumothorax.[5]

In our index case, the suspicion was high as the neonate being ventilated at higher airway pressures in the left lateral decubitus position during right lateral thoracotomy for TEF repair to maintain adequate ventilation. Both the increased compliance postligation of the fistula in a preterm neonate and ventilation at higher airway pressure could have resulted into pneumothorax.

Intraoperatively, detection is not easy, and one has to rely on clinical judgment. Although chest X-ray remains the gold standard, its use in an emergency is not practical in the perioperative period. Ultrasonography as being used in adults can be utilized for detecting pneumothorax in neonates but the literature is limited, and its use requires expertise. Transillumination of the hemithorax had been used successfully
in NICU for pneumothorax detection but, the majority of the anesthesiologist are not familiar with this technique. [8]

Prompt diagnosis of pneumothorax and intervention will prevent mortality and morbidity arising due to hypoxia, acidosis, and hypercarbia as preterm with congenital heart defects is vulnerable to flip-flop circulation with reversal of shunts. High level of suspicion of pneumothorax should be kept in mind whenever there are multiple attempts of intubation using various intubating aids and requirement of high airway pressures to achieve target ventilation, all of which can predispose neonate for developing barotrauma.

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There are no conflicts of interest.

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Surgical Apgar Score for predicting patient outcome after hepatopancreaticobiliary surgeries

Sir,

We read with great interest the original article titled, “Physiological and operative severity score for the enumeration of mortality and morbidity scoring systems for assessment of patient outcome and impact of surgeons’ and anesthesiologists’ performance in hepatopancreaticobiliary surgery” by Fassoulaki et al. [1]

The authors used Physiological and Operative Severity Score for the enumeration of Mortality and Morbidity (POSSUM) and Portsmouth-POSSUM (P-POSSUM), i.e., the Portsmouth modification scores to predict patient outcomes after hepatopancreaticobiliary (HPB) surgeries. We understand the author’s concern with the data as it is a retrospective, small volume, and single-center study.

However, we would like to mention the meta-analysis published by Chen et al. [2] where they also used POSSUM and P-POSSUM as predictors of postoperative morbidity and mortality in patients undergoing HPB surgery. The authors reviewed 16 eligible studies over a period of 20 years (from 1991 to 2012). The authors concluded that although POSSUM overpredicted the postoperative morbidity after HPB surgeries, P-POSSUM was more accurate in predicting major postoperative events. Wang

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