Chylothorax after thyroid surgery: A rare cause of postoperative hypoxia!

Sir,

A 59-year-old female patient, American Society of Anesthesiologists grade II controlled hypertensive, with no significant risk factors for postoperative pulmonary complications barring moderate obesity, underwent total thyroidectomy with bilateral modified neck and level VI lymph node dissection. The intraoperative period and extubation were uneventful. She was fully awake and had recovered completely from muscle relaxants. Laryngoscopy was done to confirm normal vocal cord function. Shortly following the transfer onto the trolley, she desaturated to 91–93%. There was no stridor or...
obvious signs of respiratory distress. There were no clinical features to suggest inadequate reversal, residual anaesthetic or opiate effect.[1] Considering the possibility of basal atelectasis after prolonged general anaesthesia, she was managed conservatively with head-end elevation, recruitment followed by oxygen support via a non-rebreathing mask (NRBM) at 10L/min, to which she responded immediately. However, she tended to desaturate on reducing oxygen flow. Because the hypoxia persisted despite continuous positive airway pressure (CPAP), a point of care ultrasound (POCUS) was done. This was grossly normal barring a few B lines on the left side. A portable chest X-ray (CXR) done in the recovery room showed bilateral lung volume reduction. Approximately 90 min later, she began to show signs of increasing respiratory distress and complained of left-sided chest pain. She was shifted to the critical care unit for further management and deteriorated further during transit.

Arterial blood gas (ABG) analysis showed respiratory acidosis with the partial pressure of oxygen by inspired oxygen concentration/inspired oxygen fraction ($\text{PaO}_2/\text{FiO}_2$) ratio <100 [Table 1]. Oxygen support was escalated to high-flow nasal oxygen (HFNO). Chest physiotherapy was initiated. After 12 h, the patient was intubated because of the worsening hypoxia and respiratory distress despite maximal HFNO support. POCUS showed bilateral B lines with minimal bilateral effusion from day 2. Her lung function declined progressively, acutely and rapidly over the next 2 days. Serial procalcitonin and pro-brain natriuretic peptides (BNP) were within normal range ruling out sepsis and cardiac aetiology. Serial CXRs and nucleic acid tests (TruNAT) were repeated to rule out corona virus disease (COVID) pneumonia. On day 4, CXR showed bilateral atelectasis and features of severe acute respiratory distress syndrome (ARDS) with bilateral minimal pleural effusion. The patient clinically worsened despite significant ventilatory support. ABG analysis showed severe respiratory acidosis with a $\text{PaO}_2/\text{FiO}_2$ ratio of 55. A left intercostal drain (ICD) was inserted at the surgeon's suggestion despite the small pleural effusion, suspecting a chyle leak [Figure 1]. Further 550mL of chyle was drained. Chylothorax was managed conservatively as the amount of chyle drained progressively decreased. Her respiratory mechanics improved albeit slowly. After a failed extubation, re-intubation and tracheostomy, weaning was possible only on day 20. She was off oxygen support on day 28 and discharged on day 32.

Postoperative chylothorax generally presents as dyspnoea and cough two or three days post-operatively and is rare (less than 1% to 6.2%) following thyroid surgery.[2] The risk of chyle leakage is directly proportional to the extent of surgical dissection.[3] In our patient, thoracic duct injury and leak of chyle directly into the pleural space probably triggered the ARDS features.

This patient developed desaturation practically immediately, suggesting an anaesthetic aetiology. The minimal chyle leak probably increased during transfer to the trolley and later to the intensive care unit due to the increased abdominal pressure during patient movement. The subsequent exaggerated inflammatory response of the lungs to the chyle probably triggered ARDS similar to that seen during fat embolism. As the leak of chyle was minimal, it did not cause the typical hypovolaemia, dyselectrolytaemia and severe malnutrition.

Considering that cases of pleural effusion after thyroidectomy are rare, a higher index of suspicion for a chylothorax may have helped.[4] Valsalva manoeuvre followed by raising the intraabdominal pressure
with the Cernea manoeuvre may have aided early intraoperative detection of duct injury.\(^5\) Although chylothorax per se is rare after thyroid surgery,\(^6\) other unusual features here were the early acute presentation with hypoxia, the rapid deterioration to severe inflammatory response and ARDS.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**
There are no conflicts of interest.

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**Letters to Editor**

Sir,

Patients with deep wounds due to trauma, infection or chronic systemic illness like diabetes mellitus undergo frequent dressing changes and minor debridement collectively known as wound care procedures (WCP) in the ward. Pain during WCP has been reported to be moderate to severe in 74% of patients with 36% expressing severe pain.\(^1\) Inadequate analgesia reduces patient compliance to dressing changes and also leads to depressive symptoms and decreased quality of life.\(^2,3\) Hence, we sought to explore the feasibility and efficacy of sciatic nerve catheters for analgesia during wound care procedures in the hospital ward setting.

This prospective observational trial was conducted in a tertiary care teaching university hospital from January 2021 to August 2021. The study was

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