Sir,

Myxedema coma is life-threatening manifestation of long-standing hypothyroidism. This case highlights the need of considering undiagnosed hypothyroidism as a possible cause of delayed emergence from anesthesia in a diabetic obese patient.

A 65-year-old female presented to our institute with a huge malignant swelling on right side of breast and was posted for modified radical mastectomy. The patient was obese weighing 95 kg and was a known case of type II diabetes for the last 10 years. Her blood sugar was controlled with 500 mg metformin. Her preoperative vitals include blood pressure (BP) 130/90 mm of Hg and pulse 50 beats/min, with no postural variation. All routine baseline preoperative investigations were normal except electrocardiogram which showed low voltage complexes.

In the operation theater, all routine monitoring were attached to the patient. Induction was done with fentanyl and propofol followed by intubation with 7.5 mm endotracheal tube and was maintained with isoflurane and rocuronium.

Intraoperatively, around 30 min of induction, patient’s heart rate decreased to 35 beats/min followed by fall in BP to 60/40 mm of Hg. Immediately, injection atropine 0.6 mg along with fluid boluses and injection ephedrine 6 mg were given. Pulse increased to 40 beats/min, but BP was not improving, so noradrenaline infusion was started. There was no obvious surgical bleed. The patient also started developing hypothermia (32°C) in spite of proper warming measures such as fluid warmer and warming blankets. The surgery lasted for about 2½ h. After the surgery, no signs of neuromuscular recovery and gain of consciousness were seen; however, we gave muscle relaxants using neuromuscular monitoring only. To exclude cause of delayed recovery blood gas analysis and sugar levels were checked, which were normal. She was shifted to the Intensive Care Unit (ICU) for further management.

Active warming of the patient was done. The patient was maintaining 100% saturation on FiO₂ of 0.3. Her BP was continuously decreasing even on high dose noradrenaline. Injection hydrocortisone 100 mg was given, which resulted in transient increase in BP. Brain magnetic resonance imaging was done to rule out any cerebrovascular accident, which was normal and troponin I was also not raised. We also sent her thyroid profile.

Within 3 h of ICU admission, patient developed pulseless ventricular tachycardia, which was refractory to direct current shock and patient could not be resuscitated. Later, thyroid profile showed thyroid-stimulating hormone level to be 200 µIU/ml. On the basis of thyroid profile, diagnosis of subclinical hypothyroidism with myxedema coma was made.

Undiagnosed and severe hypothyroidism may present as myxedema coma perioperatively due to the presence of multiple precipitating factors such as stress of surgery and anesthesia. It may present as altered mental status, hypothermia, bradycardia, hypercarbia, hyponatremia, pericardial effusion, and cardiogenic shock. Intraoperatively, the patient may display hypothermia, bradycardia, and hypotension.\(^1\)
It is most often observed in elderly females and is associated with high mortality as high as 50% even with immediate recognition and timely medical intervention. These patients have increased sensitivity to anesthetic drugs due to alteration in drug pharmacokinetics secondary to decreased cardiac output and slow circulation time. Prompt recognition and thyroid supplementation are key to patient recovery. The management of myxedema coma requires prompt supplementation of thyroid hormone. Intravenous thyroxine is the drug of choice. It is usually recommended in bolus ranging from 300 to 600 mcg.

No universal screening recommendations exist for thyroid diseases for adults. American thyroid association recommends screening at the age of 35 years and every 5 years thereafter with close attention to patients who are at high risks such as pregnant women, elderly women, patients of type 1 diabetes mellitus, and those with history of neck irradiation.

Various other causes for delayed emergence as drug overdose, potentiation by other drugs, prolonged neuromuscular blockade as seen in acidosis, renal failure, and severe hypothyroidism are known. Other causes such as metabolic, neurological, and respiratory can also affect recovery from anesthesia.

In our case, we also considered myxedema coma as a possible cause of delayed recovery though there was no history of hypothyroidism, but patient expired before we could act on it. However, the rate of primary hypothyroidism in type 2 diabetes mellitus is two times greater than nondiabetics; hence, high index of suspicion is required when there is delay in recovery from anesthesia in obese female with diabetes.

Emphasis should be given to history taking and physical examination of the patients. Thyroid profile of elderly obese patients with diabetes should also be considered.

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Conflicts of interest
There are no conflicts of interest.

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