

Hypothyroidism Unmasked After Surgery

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Abstract

The purpose of this article is to consider undiagnosed hypothyroidism as a possible cause of delayed emergence from anaesthesia in a obese patient. We report about a patient who underwent elective surgery with general anaesthesia. Intraoperative events and post operative delayed emergence led us to suspect undiagnosed hypothyroidism which was confirmed postoperatively by low serum thyroxine levels.

CASE REPORT

A 54 yr old male patient weighing 80 kg with height of 1.62 m and BMI of 30.5 was posted for open cholecystectomy. Preanaesthetic evaluation did not reveal any significant past medical or surgical history. On examination the patient was conscious, well oriented, afebrile, with baseline heart rate (HR) 60-min, and blood pressure (BP) 130/80 mmHg. He had difficult airway (Mallampatti – III) with short neck. Systemic examination did not show any abnormalities.

Routine blood investigations, coagulation profile, electrocardiogram and x-ray chest were within normal limits. USG revealed evidence of stones in gallbladder.

Patient was premedicated with iv midazolam 2 mg ,iv pentazocine 30mg. General anaesthesia was induced with iv propofol 120 mg, iv succinylcholine 100mg and intubated with 9 ETT. The patient was maintained with oxygen-nitrous oxide, intermittent isoflurane and inj vecuronium as muscle-relaxant.

Intraoperatively, the patient developed hypotension (80-90 mmHg systolic BP) though no significant variation in heart rate from baseline, also his body temperature decreased to 33 (degrees) C inspite of active warming. Blood pressure was maintained with fluids and ephedrine 2.5 to 5 mg IV.

Reversal was with inj neostigmine 2.5mg and glycopyrrolate 0.4 mg. Following which the patient was conscious but had inadequate respiratory efforts, airway reflexes and muscle tone. The patient was observed in the operation theatre for an hour. Respiratory efforts improved and patient maintained 99% saturation with 4l/min Oxygen on T-piece, but there was sustained hypotonia and core body temperature was 34(degrees) C.

In the mean time, ABG and serum electrolytes were done and both were within normal limits. Extubation was deferred and the patient was shifted to the ICU on a T-piece. After another 1hr there was still no muscle tone, though the patient was maintaining saturation on the T-piece and was tolerating the ETT well.

After ruling out most of the causes for delayed emergence insidious hypothyroidism was suspected. Hydrocortisone 100mg iv and two tablets of 100mg Altroxine was given through ryles tube. A warmer was used to maintain patient's body temperature and he was observed in the ICU. The patient was later extubated after his body temperature returned to normal and there was sustained head lift. The next day, thyroid hormone testing was done and low serum thyroxine levels confirmed our suspicion.

DISCUSSION

Hypothyroidism may cause delay in recovery from general anaesthesia due to hypothermia, respiratory depression, or slowed drug biotransformation. Therefore while ruling out causes of delayed emergence, hypothyroidism as a possible cause should be kept in mind especially in obese patient since the two are known to coexist

Subclinical hypothyroidism might get precipitated during intraoperative period. Such patients have increased sensitivity to depressant drugs, hypodynamic cardiovascular system (decreased HR and cardiac output), blunted baroreceptor reflexes, hypoventilation, delayed awakening, hypothermia, hyponatremia, hypoglycemia and anaemia.

These patients should remain intubated until they have good respiratory efforts and are close to normothermic. They should be kept in the ICU with constant monitoring of

temperature, respiration and blood pressure. Because hypothyroidism increases vulnerability to respiratory depression, a non-opioid such as ketorolac would be a good choice for postoperative pain relief.

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