Delayed Recovery From General Anaesthesia due to Severe Hypoglycemia in a Non-diabetic Adult

Sir,

A 55 years non-diabetic non-alcoholic male farmer of asthenic built was posted for elective wide local excision with mandibulectomy and bilateral supraomohyoid lymph node dissection under general anaesthesia for carcinoma of floor of mouth. He was a known case of pulmonary tuberculosis on antituberculous treatment since three months. At time of presentation, he was asymptomatic and sputum examination was negative. Routine pre-anaesthetic check up and laboratory investigations did not reveal any abnormality. A routine blood glucose level of 93 mg/dL had been recorded in pre - anaesthetic check up.

Induction - intubation and intraoperative course remained un-eventful with stable vital parameters. At the time of recovery, after reversal of neuromuscular blockade, the patient failed to regain consciousness. Respiratory efforts were not good. Tachycardia with slight sweating was noted. On sequential exclusion of the causes of delayed recovery, blood glucose was incidentally found to be 30 mg/dL, which was urgently treated with 200 mL 25% Dextrose intravenously (i.v.). After the treatment, patient improved clinically and blood glucose levels returned to above normal and thereafter, remained within normal limits. Respiratory efforts improved and the patient started responding to pain which gradually progressed to spontaneous eye opening. The patient was shifted to Intensive Care Unit for mechanical ventilation and was weaned off next day successfully. He had no neurological sequellae and was shifted to the ward after two days for routine care.

The incidence of delayed recovery from anaesthesia, which is a major concern for the anaesthesiologists, is 9%.1 Common causes include residual neuromuscular blockade, central nervous system depressant drugs, hypoxemia, hypercarbia, hypotension, hypothermia, hypoglycemia, hyperglycemia, and electrolyte and acid-base disturbances.2 Hypoglycemia is an important cause of delayed recovery from general anaesthesia, particularly in patients with a history of poorly controlled diabetes, starvation and alcohol consumption.3 Anaesthesia masks cognitive dysfunction, the most sensitive clinical marker of hypoglycemia,4 and only the symptoms due to sympathethic stimulation like diaphoresis and tachycardia are seen in an anaesthetized patient. In this patient, blood glucose was incidentally found to be very low (30 mg/dL). Given the known inaccuracy of point of care glucose meters in the intraoperative setting,5 at first look it seemed to be a spurious value but sweating and tachycardia were also noted which correlated with hypoglycemia.

On detailed questioning, the attendants revealed that the pre-operative fasting duration of our patient was about 12 hours (since 8 pm of previous evening). Spontaneous severe hypoglycemia in this case probably occurred due to prolonged starvation as a result of three factors - malignancy, tuberculosis and prolonged fasting (12 hours).

To conclude, unsuspected spontaneous hypoglycemia should be thought of in non-diabetic patients showing delayed emergence from anaesthesia and high index of suspicion is required in patients prone to starvation and malignancy. Such incidents may be prevented by effective communication between each and every team responsible for perioperative patient care, patient following pre-operative fasting instructions, intra-operative blood glucose monitoring and in case of malignancy surgery, use of glucose - containing fluids with Ringer's lactate in patients prone to starvation.

REFERENCES


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Received: January 28, 2015; Accepted: May 19, 2015.