

Delayed Recovery from General Anaesthesia after Adequate Reversal

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Abstract

Delayed recovery from anaesthesia is a distressing as well as awkward situation for an anaesthetist and also for the surgeons. Everybody wants their patient regain consciousness immediately after operation. We present a case of 35 years old lady who regained her consciousness, 24 hours after operation. All her investigations reports were almost normal and she was given anaesthetic fitness for Sub total Thyroidectomy operation. In the operation theatre, she was a bit worried and anxious looking. After a very good and successful operation she was given as usual reversal but she did not respond. After 24 hours, she started to follow commands from anaesthetist i.e opening eyes, protruding tongue etc. During these times she was treated accordingly with, Inj. 10% dextrose, Inj. Frusemide, Inj Hydrocortisone, whole blood transfusion etc.

Key words: Delayed recovery, CNS depression, Hypoglycaemia, Drug overdose

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Introduction

It would be normal to anticipate the return of consciousness within 10 minutes of the end of an operation. Failure to recover consciousness 60 minutes after the end of an anaesthesia requires investigation, unless an obvious preoperative cause is apparent.^{1,2} In spite of apparent return of awareness, failure of memory and confusion may persist for sometime postoperatively and do not necessarily require treatment.^{3,4} It is painful, alarming, as well as

distressing situation for the anaesthetist and also for the surgeon which should be dealt carefully and patiently.^{4,5}

Case Report

Khushi Begum, aged-35 yrs of age, post office Kazipur district Sirajganj was admitted in surgical ward of North Bengal Medical College Hospital. Thyroid enlargement was diagnosed and she was prepared for thyroidectomy operation and was sent to anaesthesiology department for anaesthetic fitness. All of her

investigations were found quite normal. She was given anaesthetic fitness. On the day of operation, she became a bit abnormal due to anxiety and fear. Her B.P was slightly elevated. She was given pre-medication with Inj.-Pethidine 75 mg and Inj-Atropine 0.6 mg intramuscularly. Induction of anaesthesia was given with Thiopentone and intubation was carried out by using Suxamethonium (at 1.5 mg per kg dose). Anaesthesia was maintained with Inj. Vecuronium, Halothane, Nitrous-Oxide and Oxygen. The surgeon was very competent and he took 1 hr. and 30 minutes to complete the operation. Intra venous Pethidine- 50 mg was given in between operation. At the end of operation all anaesthetic agents were cut-off and 100% oxygen were given. After that the patient was reversed with Inj. Neostigmine 2.5 mg and Inj. Atropine-1.2 mg. It was noticed that 5 minutes after reversal, there was no respiratory effort, intermittent positive pressure ventilation was continuing with 100% oxygen. After 15- 20 minutes breathing effort returned gradually. After 30 minutes, the patient started breathing quietly rhythmically, but consciousness did not return. All sorts of stimulation were given to her but there was no sign of returning consciousness. The patient was kept under close monitoring, and the pathologist was requested to repeat all the investigations again, including serum electrolytes, blood glucose level and blood gas analysis. Meanwhile, all supportive treatments were going on. On the next day at 11.00 pm, the patients' reflexes were returning (after 24 hours) back and the patient started to follow commands, i.e. opening the eyes, protruding the tongue, catching the fingers tightly. Within 28 hours, the patient became quite normal.

Discussion

The speed with which recovery of the response to pain and to command occurs depends upon the pre operative status of the patient's central nervous system. It may also be affected by surgery, intraoperative events and the pharmacokinetics of the drugs administered during anaesthesia.⁴ Full recovery of consciousness may vary according to the age of the patient, generally being longer in elderly and by pharmacokinetic effect of abnormal liver function, renal blood flow and protein binding of drug administered. It is not unusual for some degree of mental impairment to be present for 24 hrs. after major surgery.⁶ It is difficult to assess the contribution of the anaesthesia, surgery and postoperative medication to this phenomenon, which is occasionally found after major surgery. Any condition reducing cerebral metabolism in the postoperative period is likely to cause delay in awakening from the anaesthesia. A fall in cerebral metabolism may be due to hypoxia, hypothermia, or reduced metabolic substrates in the blood.^{7,9} Low cerebral perfusion pressure, caused by systemic hypotension, an obstruction to venous outflow from the brain or from increased intracranial pressure, will compromise cerebral function. Often a combination of factors is involved. Intraoperative cerebral hypoxia, due either to a fall in perfusion or to a critically lowered oxygen content of the blood, will affect postoperative recovery. Drug induced cerebral depression; including a failure to lower the plasma concentration of anaesthetic agents to sub hypnotic levels as a result of either overdose or pharmacokinetic factors is often a cause of modest delays in patients regaining full consciousness. Pathological or pharmacological condition that interferes with synaptic

transmission and neurotransmitter release causes drowsiness and prolonged unconsciousness. Hypothermia below 32°C usually impairs consciousness. A failure of glucose to reach the cellular enzymes will cause drowsiness and unconsciousness. Respiratory and metabolic acidosis either associated with CO₂ retention or with a low bicarbonate will disturb the function of the pH-sensitive intracellular enzymes and may cause unconsciousness.^{7,8} Adrenocortical failure may present as hypotension and unconsciousness.⁹ During surgery prolonged retraction of cerebral tissue may have the same effect. Cerebral edema from water intoxication is usually a slowly progressive condition but if associated with inappropriate antidiuretic hormone secretion, it may complicate recovery from anaesthesia.⁹ Hypotension and hypoxia occurring during an operation would alert one to this possible cause of cerebral damage. The commonest cause of a slow return of consciousness postoperatively is drug overdose or pharmacokinetic failure to lower plasma drug concentration often complicated by CO₂ retention. The administration of a dose of narcotic shortly before the end of the operation should alert to this as a cause of slow return of consciousness. In the presence of poor renal blood flow, narcotic metabolites may cause respiratory depression. If volatile anaesthetics have been administered in a concentration greater than two minimum alveolar concentrations they may well cause slow arousal.¹⁰ In this case the patient regained consciousness delayed might be due to over anxiousness, fear and tension before operation. Nothing abnormality was detected in relevant investigation report.

Conclusion

The patient should be assessed carefully before operation, as it is a very awkward, distressing and unusual situation. If any doubt all the investigations should be repeated. Fluid and electrolyte imbalance should be corrected. Oxygen, carbon dioxide and glucose level should be normal and the blood pressure should be maintained at a mean of 70-90 mmHg. However a focal cerebral lesion such as intracranial tumors or localized haemorrhage should be looked for. Opiate analgesics should be used slowly and very carefully. Naloxone, an antidote for opiates should always be ready at hand. Blood grouping and cross matching should be done promptly if blood transfusion is required. Overdose of any drugs must be avoided.

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