

Complications In The Recovery Room

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Clinical anaesthesia is a reversible process but due to the elimination characteristics, each of various drugs used for a balanced anaesthetic technique may not be totally reversed precisely at the time of conclusion of surgery. Thus an anaesthetist has the responsibility to look after these patients till they are properly reversed and ready to be nursed in the ward. The factors associated with post-operative complications are site and nature of surgical operation, duration of anaesthesia, ASA (American Society of Anesthesiologists) physical status, anaesthetic technique and whether the procedure is elective or emergency. In a patient subjected to anaesthesia and surgery it is not easy to separate out the complication to be purely of anaesthetic or surgical origin as most common problems have multiple and inter related aetiology. However, the complications in the recovery room could lead towards considerable patient morbidity and mortality. A prospective study⁽¹⁾ published in 1992 on complications in a recovery room area in a teaching hospital in USA has been reported to be 23.7%. So far there are few data on recovery room incidence from this region and authors of the paper presented in this issue of the journal⁽²⁾ are to be commended for their efforts. The rate of incidents vary between various reports which may be attributed to reporting techniques or patients population or both.

Commonest respiratory problem is upper airway obstruction and Hines et al⁽¹⁾ reported 6.9% of patients requiring airway support. Incidence of hypoxia in patients breathing room air immediately after general anaesthesia is a common phenomenon. Compared to contemporary reports, a study done at Singapore General Hospital⁽³⁾ had lower incidence of hypoxia both during transport to the recovery room as well as in the recovery room. It is surprising that in the paper presented in this journal⁽²⁾, there is no mention of incidence of hypoxia at all. It is not clear whether these patients were transported with oxygen to the recovery room or the pulse oximeter was put up before or after the initiation of oxygen therapy. Though hypoventilation is common due to the effects of the residual anaesthetics, narcotic analgesics, muscle relaxant, upper abdominal incision and sometimes because of inherent lung disease; other pulmonary complications like bronchospasm, pulmonary oedema, embolism and aspiration may also occur.

Incidence of post-operative nausea and vomiting (PONV) which may even follow regional anaesthesia,

appears (from an ongoing study) to be lower in our patients when compared with published figures of 9.8%⁽¹⁾. Intravenous anaesthetics in general except opioid, induce less nausea and vomiting than inhalational anaesthetics, propofol being especially promising. Causes of PONV are numerous but use of opioid, surgery on upper abdomen and middle ear, laparoscopic procedures, distension and suctioning of stomach, early ambulation in the post-operative period are but a few common ones.

Cardiovascular instability in the form of hypertension and tachycardia are due to pain, hypoxia, hypercarbia, bladder distention and peripheral vasoconstriction. Known hypertensives are at a greater risk at this vulnerable period. Hypotension in the recovery room with a blood pressure of 25% below post-operative baseline is usually due to hypovolaemia, diuresis, third space loss or residual effects of anaesthetic drugs but may rarely be due to septicaemia. High risk patients may develop myocardial infarction (MI) during emergence from anaesthesia and the mortality is higher in these patients when compared with MI in a non-surgical setting.

Emergence excitement are still seen from time to time in anxious and young patients, after use of halogenated anaesthetics, ketamine or scopolamine, following hypoxia, hypercarbia and pain, after surgery with emotional overtures like cancer surgery or in patients waking up with restraints. Major causes of altered mental status after general anaesthesia are prolonged action of anaesthetic agents, metabolic abnormalities and neurologic injury. Central anticholinergic syndrome (CAS) caused by disturbances in acetylcholine neurotransmission of the brain may delay in regaining of consciousness.

Post-anaesthetic shivering is common and is usually caused by decreased body heat content. Increased oxygen consumption by the muscles along with drop in perfusion due to vasoconstriction during shivering leads to metabolic acidosis. Post-anaesthetic tremor postulated to be due to increased spinal reflex activity resulting from inhibition of descending cortical control by residual anaesthetic, occurs at normal body temperature.

Fluid and electrolyte problems are likely to occur in elderly, debilitated and diabetics; in patients with massive volume replacement, septicaemia or organ failures; neurosurgical patients and in patients on diuretic therapy. Effects of hyponatremia or water intoxication following transurethral resection of

prostrate, which occurs from time to time, can be dramatic with symptoms ranging from dizziness, restlessness, confusion, visual disturbances to seizures and coma. In eclamptic patients and in patients with end stage renal failure, hypermagnesemia may contribute towards prolonged somnolence or coma.

Incidence of moderate to severe pain implying inadequate analgesia following surgery from the 50s to the 90s has been reported to be between 20% - 75%⁽⁴⁾. Other than patient comfort, relief of pain is a necessity to reduce the sequelae due to the effects of stress response. Spinal and epidural opiates with or without local anaesthetics, opiates by intermittent parenteral route or by continuous intravenous infusion, patient controlled analgesia (PCA), oral, rectal or parenteral NSAIDs and nerve blocks, have been used individually or sometimes in combinations, for successful management of acute post-operative pain. As administration of these potent drugs are not without complications, the patients receiving such treatment for longer period of time must be sent to an appropriate area for closer supervision.

To reduce further complications, the problems encountered in the recovery room should be identified

and treated as soon as possible. Sometimes the situations may demand invasive respiratory and cardiovascular procedures which have to be performed on site. It is apparent that both short-term recovery rooms in operating theatres and longer term post-operative high dependency units should have adequate monitoring facilities and properly trained personnel⁽⁵⁾ to promote better patient safety and an uneventful recovery from anaesthesia and surgical procedures.

REFERENCES

1. Hines R, Barash P G, Watrous G, O'Connor T. Complications occurring in the postanesthesia care unit: a survey. *Anaesth Analg* 1992; 74:503-9.
2. Norsidah A M, Puvaneswari A. Anaesthetic complications in the recovery room. *Singapore Med J* 1997; 38: 200-4.
3. George J M, Nair L, Dhara S S. Postoperative hypoxaemia during transport and in the recovery area. *Ann Acad Med Singapore* 1995; 24:807-11.
4. The Royal College of Surgeons of England, The College of Anaesthetists (1990). Report of the working party on pain after surgery. Commission on the Provision of Surgical Services. London: Royal College of Surgeons.
5. Guidelines for the care of patients recovering from anaesthesia including day surgery - Safety guidelines in anaesthesia. Singapore Society of Anaesthesiologists, 2nd edition 1992: 22-7.

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