

postoperative care

The aim of postoperative care is to provide the patient with as quick, painless and safe recovery from surgery as possible.

SYSTEM-SPECIFIC POSTOPERATIVE COMPLICATIONS

Respiratory complications

Postoperative hypoxia

Hypoxia is defined as an oxygen saturation of less than 90%. Hypoxia may present as shortness of breath or agitation or as upper airway obstruction or cyanosis or as a combination of any of the above.

Hypoxia in the postoperative period may occur due to a variety of reasons, for example:

- 1- Upper airway obstruction due to the residual effect of general anesthesia, secretions or wound hematoma after neck surgery.
- 2- Laryngeal oedema from traumatic tracheal intubation, recurrent laryngeal nerve palsy and tracheal collapse after thyroid surgery.
- 3- Hypoventilation related to anesthesia or surgery.
- 4- Atelectasis and pneumonia especially after upper abdominal and thoracic surgery
- 5- Pulmonary oedema of cardiac origin or related to fluid Overload

Pulmonary embolism

this often presents with the sudden onset of chest pain and shortness of breath. In the presence of a large embolism, there will be systemic hypotension, pulmonary hypertension and an elevated central venous pressure.

In obese patients or in those with acute or chronic lung disease, hypoxia develops more quickly. Patients with hypoxia or imminent signs should be treated urgently. If the patient is breathing spontaneously administer oxygen at 15 L/min, using a non-rebreathing mask. A head tilt, chin lift or jaw thrust should relieve obstruction related to reduced muscle tone. Suctioning of any blood or secretions and insertion of an oropharyngeal airway may be needed.

Neck wound hematoma can become a life-threatening emergency, and must be evacuated immediately under local or general anesthetic. Along with the immediate management of hypoxia, appropriate antibiotics, chest physiotherapy and

bronchodilators will be needed to treat pneumonia. In the case of pulmonary oedema, diuretics should be started and a cardiology opinion should be sought.

Cardiovascular complications

Myocardial ischemia and infarction

Patients with previous cardiac problems undergoing major surgery are at risk of developing an acute coronary syndrome. They commonly present with retrosternal pain radiating into the neck, jaw or arms and may also have nausea, dyspnea or syncope.

serum troponin levels will be high in both types of MI (myocardial ischemia and myocardial infarction). Start treatment with oxygen, glyceryl trinitrate, morphine and aspirin and involve a cardiologist.

Arrhythmias

Arrhythmia in the postoperative period can cause hypotension and ischaemia. Therefore, these patients will need to be continuously monitored.

Treatment, firstly; *correcting underlying causes* including acid-base and electrolyte imbalance, hypoxia and hypercapnia. Tachycardia (sinus or supraventricular) may be caused by anxiety, pain, MI, hypovolaemia, sepsis or hypoxia in the postoperative period

control the heart rate with beta-blockers.

Renal and urinary complications

Acute renal failure

About a quarter of cases of hospital-acquired renal failure occur in the perioperative period and are associated with high mortality especially after cardiac and major vascular surgery.

Patients with known chronic renal disease, diabetes, liver failure, peripheral vascular disease and cardiac failure are at high risk.

Perioperative events such as sepsis, bleeding, hypovolemia, rhabdomyolysis or abdominal compartmental syndrome can all precipitate acute renal failure.

If urine output is less than 0.5 mL/kg per hour for 6 hours, check that the catheter is not blocked, correct hypovolemia, correct metabolic and electrolyte disturbances, and stop nephrotoxic drugs.

Urinary retention

Inability to void after surgery is common with pelvic and perineal operations or after procedures performed under spinal anesthesia. Pain, fluid deficiency, problems in accessing urinals and bed pans, and lack of privacy on wards may contribute to the

problem of urine retention. The diagnosis of retention may be confirmed by clinical examination and by using ultrasound imaging.

Catheterization should be performed prophylactically when an operation is expected to last 3 hours or longer or when large volumes of fluid are administered.

Urinary infection

Urinary infection is one of the most commonly acquired infections in the postoperative period. Patients may present with dysuria and/or pyrexia. Immunocompromised patients, diabetics and those patients with a history of urinary retention are known to be at higher risk. Treatment involves adequate hydration, proper bladder drainage and antibiotics depending on the sensitivity of the microorganisms.

COMPLICATIONS RELATED TO SPECIFIC SURGICAL SPECIALTIES

Abdominal surgery

Paralytic ileus

Paralytic ileus may present with nausea, vomiting, loss of appetite, bowel distension and absence of flatus or bowel movements.

Following laparotomy, gastrointestinal motility temporarily decreases. Treatment is usually supportive with maintenance of adequate hydration and electrolyte levels. However, intestinal complications may present as prolonged ileus and so should be actively sought and treated.

Return of function of the intestine occurs in the following order: small bowel, large bowel and then stomach. This pattern allows the passage of faeces despite continuing lack of stomach emptying and, therefore, vomiting may continue even when the lower bowel has already started functioning normally.

Orthopedic surgery

Compartment syndrome

In patients who have undergone open reduction and internal fixation of fractures, and especially if a tourniquet has been used, the neurovascular status of the limb must be checked every half an hour first in recovery and then on the ward for at least a further 4 hours. Plasters should always be split for the first 24 hours (or until swelling starts to reduce) and the nurses given instructions to check and record distal circulation every 4 hours. If the patient has an external fixator, the pin sites should be checked daily for signs of infection.

Patients with **compartment syndrome** complain of pain out of proportion to that expected. It is not relieved by simple analgesics. Passive stretching of the muscles

in the affected compartment produces severe pain. The limb is usually swollen and tense and, in the later stages, there may be altered sensation distally.

Distal pulses are only lost at a very late stage and so their presence does not exclude a compartment syndrome.

If there is any possibility that a patient might have a compartment syndrome then all circumferential dressings should be removed at once. If there is no immediate improvement in the pain, then a fasciotomy should be performed. The diagnosis is a clinical one and is made on suspicion not certainty.

Neck surgery

Patients having neck surgery, e.g. thyroid surgery, must be observed for accumulation of blood in the wound, which may cause rapid asphyxia. A check also needs to be made pre- and postoperatively for damage to the recurrent laryngeal nerve. The findings must be recorded in the medical notes.

Neurosurgery

Postoperatively, the patient should be kept under close observation. A rise in intracranial pressure may be signaled by a deterioration in the state of consciousness, as well as by the appearance of new neurological signs. Some patients may have an intracranial monitoring device to allow for more sensitive monitoring.

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