2.12 Post-operative care

Basic nursing issues
The patient should be discharged to the ward or recovery area with clear orders for the following:
- Monitor ABC.
- If the patient is unconscious (P or U on the AVPU scale) they should not be left alone until they are responding to voice. Put them in the recovery position and undertake airway opening as required.
- Check vital signs (temperature, pulse, respiratory rate, blood pressure and capillary refill time) every 15 minutes for the first hour, hourly for the next 4 hours, and then 2-hourly. Observations should be more frequent if there is a change in observation from a normal to abnormal value.
- Monitor SaO₂ (normal value is > 93%) after a general anaesthetic. Give oxygen as required until SaO₂ is > 93% in air or the patient’s colour is normal. Remember that cyanosis may not be present if the patient is severely anaemic.
- Observe the mother closely until the effect of the anaesthetic has worn off.
- Control pain: if it is severe, the patient will need IV morphine.
- Record the rate and type of IV fluid (if the patient has ketosis, ensure that there is an adequate amount of glucose in the drip).
- Record urine output, surgical and nasogastric drainage, and vomiting.
- Record input versus output, and calculate the difference every 12 hours.
- Document other medications.
- Perform laboratory investigations.

The patient’s progress should be monitored, and documentation should include at least the following:
- a comment on medical and nursing observations
- a specific comment on the wound or operation site
- any complications
- any changes made in treatment.

Prevention of complications
- Provide adequate pain control.
- Encourage early mobilisation:
  - deep breathing and coughing
  - active daily exercise
  - joint range of motion
  - muscular strengthening
  - availability of walking aids such as canes, crutches and walkers, as well as instructions for their use.
- Ensure adequate nutrition.
- Consider thromboprophylaxis in those at high risk of thrombo-embolic disease (DVT/PE) (see Section 2.5.H: ‘Pulmonary embolism’).
- Prevent skin breakdown and pressure sores:
  - turn the patient frequently
  - keep urine and faeces off the skin.

Pain management (see Section 1.15)
Manage pain wherever the patient is seen (emergency department, operating theatre or on the ward), and anticipate their needs for pain management after surgery and discharge. Do not delay the treatment of pain unnecessarily.

In the first 12–24 hours after a major surgical procedure, such as Caesarean section, powerful opioid analgesia (usually morphine IV) will be needed (see Section 1.15 for details). Thereafter, the pain should be less severe, and regular codeine, non-steroidal anti-inflammatory drugs (NSAIDs), aspirin or paracetamol should be sufficient.

Wound care
Dressings protect the wound and absorb exudates. Usually the dressing applied in theatre can remain in place for 48 hours unless there is excessive or purulent exudate, when a new dressing should be applied as a sterile procedure after cleansing with sterile 0.9% saline. Swabbing a wound can be harmful as it damages the newly granulating tissue. It is also painful.

After 48 hours, provided that the wound is intact, it can be cleaned under a shower.
- Removal of sutures should usually occur after 7 days. Use one hand to hold the knot with forceps, place the stitch cutter or scissors under the knot next to the skin, and cut the stitch where it emerges from the skin. Remove the suture by pulling on the knot, which prevents a potentially contaminated stitch being pulled through the wound. Observe the wound every 4–6 hours, without touching it, for evidence of dehiscence.

Monitoring
All patients should be assessed at a frequency that is determined by the severity of their condition. Even those who are not seriously ill must be regularly assessed.

Vital signs (temperature, pulse, respiratory rate, blood pressure, urine output and fluid inputs) should be recorded on a standard form or graph at least 4-hourly for 24 hours after the immediate post-operative recovery phase.

Do not forget anti-tetanus coverage when appropriate.

Progress notes need not be lengthy, but must comment on the patient’s condition and note any changes in the management plan. They should always be signed by the person writing the note.

Notes can be organised in the ‘SOAP’ format as follows:
- Subjective: how the patient feels.
- Objective: findings on physical examination, vital signs and laboratory results.
- Assessment: what the healthcare worker thinks.
- Plan: management plan (this may also include directives which can be written in a specific location as ‘orders’).

Specific post-operative issues
Post salpingectomy for ruptured ectopic pregnancy
- Counsel patient regarding operative findings and likely

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future fertility (if the other tube is normal in appearance then fertility is around 70%).
- Counsel patient regarding risk of recurrence (1 in 10 or more) and the need for early ultrasound in any subsequent pregnancy. If evidence of pelvic inflammatory disease intraoperatively, treat patient and partner unless clear history of recent treatment.
- Offer child spacing/family planning advice. The intrauterine contraceptive device (IUCD) is associated with ectopic pregnancy if the patient becomes pregnant while using it. If another contraceptive is available and acceptable/suitable then this should be used in preference.

**Post Caesarean section**

**Monitoring**
1. Regularly (at least 2- to 4-hourly initially) monitor vital signs, including temperature, heart rate, respiratory rate, blood pressure, urine output, AVPU and SaO₂.
2. Regularly palpate the uterine fundus to ensure that the uterus remains contracted.
3. Regularly check for excessive vaginal blood loss.

**Fluids and nutrition**
1. If uncomplicated, give liquids and solids after 4–8 hours.
2. Bowel function should be normal after 12 hours.
3. Remove the IV cannula when the patient is stable and eating and drinking.
4. If there is infection, obstructed labour or uterine rupture, wait until bowel sounds appear before giving oral fluids.

**Urine output**
1. Keep a fluid balance chart and ensure that adequate urine output is occurring.
2. Remove the urinary catheter after 8 hours if the urine is clear; if not wait, until it is.
3. Wait 48 hours before removing the urinary catheter if there is a history of severe pre-eclampsia, uterine rupture, prolonged or obstructed labour, massive perineal oedema, or puerperal sepsis with pelvic peritonitis.
4. If the bladder was damaged, leave the catheter in for 7 days and until the urine is clear. If the patient is not receiving antibiotics, give nitrofurantoin 100 mg or cefalexin 500 mg or amoxicillin 500 mg orally once daily until the catheter is removed.

**Anaemia**
1. If the mother is significantly anaemic (haemoglobin level < 6–7 g/dL), transfusion may aid recovery from the operation. If possible, consider giving 500 mL of fresh cross-matched blood from a relative or other donor. The need for blood transfusion is dependent on the starting Hb and how well the patient is tolerating the anaemia.

**Wound care**
1. Check the dressing without disturbing it every 6 hours for the first 48 hours. Look for bleeding or infection.
2. Change the dressing after 48 hours.
3. If blood is leaking, replace the dressing with a new one if it is more than half soaked.

**Postpartum vaginal haemorrhage**
1. Massage the uterus to expel blood and blood clots. The presence of blood clots will inhibit effective uterine contractions;
2. Give oxytocin 10 units IM and then infuse 40 units in 500 mL of IV fluids (Ringer-lactate or Hartmann’s solution) over 4 hours. If bleeding is heavy, give misoprostol orally, 3 × 200 microgram tablets, or rectally, 4 × 200 microgram tablets (see Section 2.5.D.iv for further management of postpartum haemorrhage).

**Infection**
1. If there are signs of infection or the mother currently has fever, give ampicillin 2 grams IV every 6 hours, plus gentamicin 80 mg IV/IM every 8 hours or 5 mg/kg body weight IV/IM once every 24 hours, plus metronidazole 500 mg IV every 8 hours. If fever is still present 72 hours after initiating antibiotics, re-evaluate and revise the diagnosis.
2. Infection of the uterus is a major cause of maternal death. Delayed or inadequate treatment of endometritis may result in pelvic abscess, peritonitis, septic shock, deep vein thrombosis, pulmonary embolism, chronic pelvic infection with recurrent pelvic pain and dyspareunia, tubal blockage and infertility.
3. If retained placental fragments are suspected as a cause of infection, perform a digital exploration of the uterus to remove clots and large pieces. Use ovum forceps or a large curette if required.
4. If there is no improvement with conservative measures and there are signs of general peritonitis (fever, rebound tenderness and abdominal pain), perform a laparotomy to drain the pus.
5. If the uterus is necrotic and septic, perform a hysterectomy (subtotal is preferable, if the cervix is not necrotic).

**General measures**
1. Ensure that the mother cannot fall out of bed when recovering from a general anaesthetic or if she is very unwell with a reduced conscious level.
2. Ensure pain control.
3. Encourage early mobility and deep breathing exercises.
4. The patient should wear knee-length well-fitting antiembolism stockings until she is fully ambulant.

**At the time of discharge from hospital**
1. Discuss the implications of Caesarean section for future pregnancy management.
2. Discuss the timing of future activities such as sexual intercourse and heavy lifting.
3. Provide details of warning signs as to when the mother should contact a trained healthcare worker for advice.

**Wound abscess**
- If there is pus or fluid, open and drain the wound. Remove infected skin or subcutaneous suture and debride the wound. Do not remove fascial sutures unless deep infection is evident or suspected.
- If there is an abscess without cellulitis, antibiotics are not required.
- Place a damp sterile normal saline dressing in the wound and change the dressing every 24 hours.
- Advise the patient on good hygiene and the need to wear clean pads or cloths that are changed frequently.
- If the infection is superficial and does not involve deep tissues, monitor for development of an abscess and give antibiotics for 5 days or until fever free for 48 hours.
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— Flucloxacillin/cloxacillin 250–500 mg by mouth four times a day for 5 days.

● If the infection is deep, involves muscles and is causing necrosis (necrotising fasciitis), give antibiotics until the necrotic tissue has been removed and the patient has been fever-free for 48 hours:
  — Flucloxacillin/cloxacillin 500 mg–1 gram IV 6 hourly plus penicillin G 2 million units IV every 6 hours, plus metronidazole 500 mg IV every 8 hours.

Necrotising fasciitis requires urgent wide surgical debridement. Perform secondary closure 2 to 4 weeks later, depending on the resolution of infection.

It is important to inform the mother on discharge that she is at risk of uterine rupture during her next pregnancy. Offer child spacing/family planning advice.

Other complications

Peritonitis

Signs and symptoms

These include severe generalised abdominal pain, nausea and vomiting, fever, absent bowel sounds, rigid abdominal wall and shock.

Treatment

1. Call a surgeon and an anaesthetist.
2. Provide nasogastric suction.
3. Treat shock if present, but always place a wide-bore IV line and infuse fluids.
4. Give antibiotics until the patient has been fever-free for 48 hours:
   ● ampicillin 2 grams IV every 6 hours, plus gentamicin 80 mg IV/IM every 8 hours or 5 mg/kg body weight IV/IM once every 24 hours, plus metronidazole 500 mg IV every 8 hours.
5. If necessary, perform laparotomy for peritoneal washout.

Pelvic abscess

Give antibiotics before draining the abscess, and continue until the patient has been fever-free for 48 hours:

● ampicillin 2 grams IV every 6 hours, plus gentamicin 80 mg IV/IM every 8 hours or 5 mg/kg body weight IV/IM once every 24 hours, plus metronidazole 500 mg IV every 8 hours.

If the abscess is fluctuant in the pouch of Douglas (cul-de-sac), perform culdocentesis. If the spiking fever continues, perform a laparotomy.

Care of the patient after spinal anaesthesia

Observations

Standard post-anaesthetic observations

Sensation should return within 4 hours. If after 4 hours the patient remains numb and/or cannot move her legs, contact the anaesthetist urgently.

Analgesia

Severe pain may return suddenly when the effects of the spinal block have worn off. Give analgesia when the patient first experiences pain.

Fasting

Fasting is not needed unless it is a surgical requirement (e.g. after abdominal operations).

Posture

The patient does not have to lie flat. Allow them to sit up as soon as they are able to do so.

Mobilising

If not contraindicated by the surgery, the patient can get out of bed 2 hours after the return of normal sensation, but only with assistance. Before getting the patient out of bed, sit her up slowly. If she feels faint, dizzy or sick then lie her down, take her blood pressure and inform the anaesthetist.

Potential complications

● Postural hypotension: lie the patient on the bed, give or increase IV fluids and inform the anaesthetist.
● Urinary retention: encourage the patient to pass urine when sensation returns. If the patient has not passed urine and she has a palpable bladder, she may need a catheter.

2.13 Obstetric procedures

The importance of basic and comprehensive Emergency Obstetric and Neonatal Care in resource-limited settings

The availability of Emergency Obstetric and Neonatal Care (EmONC) indicates how well any healthcare system can respond to the obstetric and newborn complications that are the main causes of maternal and newborn deaths. The Averting Maternal Death and Disability Program (AMDD) and the United Nations have defined nine essential EmONC services that directly treat these complications. These are termed signal functions.

The functional status of an EmONC facility depends on the 24-hour availability of these life-saving signal functions and whether they have been performed recently. To qualify as a basic EmONC (or BEmONC) facility, health centres and hospitals must have performed the following seven signal functions within the past 3 months: