

RETAINED PLACENTA: ANAESTHETIC CONSIDERATIONS

Amelia Banks FRCA, Research Fellow, David M Levy FRCA, Consultant, Queen's Medical Centre, Nottingham NG7 2UH. E-mail: dml Levy@nhs.net

Third stage of labour

The third stage of labour is delivery of the placenta. This is often overlooked because of excitement following the birth of the baby. The retroplacental myometrium must contract to allow the placenta to shear away from its bed and be expelled. Signs of separation are listed in the table below. Retained placenta complicates 2% of deliveries world-wide and is a significant cause of maternal mortality and morbidity. In the developing world the associated mortality approaches 10%. If retention does occur, prompt appropriate treatment can prove life saving.

Table 1. Signs of placental separation

Uterus rises in maternal abdomen
Uterine shape changes from discoid to globular
Umbilical cord lengthens
Vaginal blood loss

Active vs expectant management of third stage

Active management involves administration of oxytocic after delivery followed by early clamping and cutting of the umbilical cord. Controlled cord traction is undertaken with simultaneous suprapubic pressure to prevent inversion of the uterus.

Expectant (also known as conservative or physiological) management means waiting for signs of spontaneous separation (table 1) and delivery of the placenta.

Retained placenta

Drugs that stimulate uterine contraction must be used with caution before the third stage is complete, as the contracting cervix can trap the placenta. The placenta is said to be retained if it has not been delivered within 30 - 60 minutes of the birth. The following are risk factors:

- Previous retained placenta
- Previous injury to uterus
- Pre-term delivery
- Induced labour
- Multiparity

Potential complications

Retained placenta can lead to a number of potentially life threatening complications:

- Primary post partum haemorrhage (and consequent hypovolaemic shock)

- Secondary (delayed) post partum haemorrhage - due to retained placental fragments
- Uterine inversion
- Puerperal sepsis

Initial management

Initial management is expectant. Vaginal examination will establish whether the cervical os is open and if placental retention is due to adherence. If the placenta has separated and is retained because of a closed os then profound analgesia should allow manual dilatation of the cervix and access to the uterine cavity. It should be noted that efforts to separate an adherent placenta might lead to major haemorrhage.

The following steps should then be executed:

- Observe the patient for signs of blood loss e.g. pallor, tachycardia and hypotension. Remember that blood loss can be difficult to estimate and may be concealed.
- Provided vital signs are stable, wait further 30 minutes for spontaneous delivery of the placenta.
- Empty the bladder, vary maternal position and start breast-feeding (to stimulate oxytocin secretion).
- Obtain large bore intravenous access and commence infusion with normal Saline or Hartmann's.
- Take blood for a full blood count (to establish haemoglobin concentration) and a group and antibody screen (in case blood transfusion proves necessary).

If these non-invasive measures fail, or significant haemorrhage supervenes then further steps will be required.

Medical therapies

Non-surgical strategies may be useful in rural areas where access to the skills required for manual removal of placenta may be limited. A Cochrane review has examined the rather limited efficacies of umbilical venous injection of saline, plasma expander, oxytocin and prostaglandin. Nitrate compounds such as nitroglycerine produce uterine smooth muscle relaxation of rapid onset and short duration. They can potentially obviate the need for anaesthesia. Women should be warned that they may experience a transient headache (cerebral vasodilatation) or dizziness (hypotension) following administration of nitrates. Systemic vasodilatation may require correction with i.v. fluids and/or vasopressors. Nitroglycerine can be given by sublingual spray 800micrograms = 2 (400microgram puffs) or i.v. bolus 100 - 200micrograms.

Surgical management

Manual removal of the placenta is the standard treatment and is

usually carried out under anaesthesia (or more rarely, under sedation and analgesia) (table 2).

All women should be given a non-particulate antacid such as 0.3M sodium citrate 30ml to neutralise gastric contents.

General anaesthesia and sedation

A rapid sequence induction should be performed following adequate pre-oxygenation. If the woman is shocked, etomidate or ketamine are preferable to thiopental or propofol as induction agents. Equipotent doses of all the volatile agents depress uterine contractility to an equivalent, dose-dependent extent. Electrocardiogram, blood pressure and end-tidal CO₂/vapour tension should be monitored if possible.

Sedation and monitoring should ideally be performed by an anaesthetist (or at least a dedicated practitioner who is not involved in the surgical operation). Fentanyl, midazolam and ketamine can all be given by titrated i.v. increments.

Regional anaesthesia

Spinal anaesthesia avoids the risks associated with general anaesthesia. 2.0 - 2.5ml of hyperbaric bupivacaine 0.5% should

Table 2. Comparison of general anaesthesia, regional anaesthesia and sedation

Technique	Advantages	Disadvantages
GA	Dose-dependent uterine relaxation by volatile agent.	Risks of general anaesthesia e.g. airway compromise, aspiration, anaphylaxis.
Spinal	Rapid establishment of profound analgesia. Avoids risks of GA.	Potential for sudden hypotension if extent of haemorrhage not recognised.
Epidural	Good if already in situ	Takes time to establish de novo
Sedation	Quick and easy	Poor uterine relaxation Unprotected airway: risk of aspiration if overdose

ensure cold sensation blockade to T6 and maternal intra-operative comfort. Hypotension secondary to regional anaesthesia is likely to be related to maternal blood loss rather than block height.

A low-dose spinal anaesthetic regimen comprising 1.5ml 0.25% plain bupivacaine and fentanyl 25micrograms has been shown to provide satisfactory operative conditions. Motor function was preserved, and maternal satisfaction was high.

Antibiotics and oxytocics

Following retained placenta there is an increased incidence of endometritis (caused by a variety of organisms). However, there is no consensus opinion on whether antibiotic prophylaxis is routinely indicated. Syntocinon(r) 40i.u. in 500ml N Saline should be infused over 4 hours as prophylaxis against atonic postpartum haemorrhage.

Further reading

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