



OPERATIVE VAGINAL DELIVERY

Adapted for Pakistan from the Green top RCOG guideline No: 20a, 2006

By the Guideline Committee of SOGP through consensus & literature review

Reviewed by: The executive Body of SOGP

Endorsed by: The CPSP

1. Purpose and scope

The aim of this guideline is to provide up to date information on the use of the forceps and vacuum extractor for operative vaginal deliveries. Obstetricians should be confident and competent in the use of both instruments. The anatomy of the birth canal and the fetal head must be understood as a prerequisite to becoming skilled in the safe use of the forceps or vacuum extractor. Obstetricians achieve experience in spontaneous vaginal delivery prior to commencing training in operative vaginal delivery. The goal of operative vaginal delivery is to mimic spontaneous vaginal birth, thereby expediting delivery with a minimum of maternal or neonatal morbidity.

2. Background

Operative vaginal delivery rates have remained stable at between 10% and 15%. There has been an increasing awareness of the potential for morbidity for both the mother and the baby. The risk of traumatic delivery in relation to forceps, particularly rotational procedures, has been long established, although with careful practice overall rates of morbidity are low. In 1998, the US Food and Drug Administration (FDA) issued a warning about the potential dangers of delivery with the vacuum extractor. This followed several reports of infant fatality secondary to intracranial haemorrhage. In addition, there has been a growing awareness of the short- and long-term morbidity of pelvic floor injury following operative vaginal delivery.

If we are to offer women the option of a safe operative vaginal delivery, we need to improve our approach to clinical care. The goal should be to minimise the risk of morbidity and, where morbidity occurs, to minimise the likelihood of litigation, without limiting maternal choice.

3. Preparation for operative vaginal delivery

1 Can operative vaginal delivery be avoided?

All women should be encouraged to have continuous support during labour. Use of a partogram, use of upright or lateral positions and avoiding liberal use of epidural analgesia, will reduce the need for operative vaginal delivery.

Use of Oxytocin in 2nd stage of labor in primiparous women with epidurals will decrease the need for operative vaginal delivery with proper assessment of cephalopelvic disproportion & review all the contraindications.

Delayed pushing in primiparous women with an epidural will reduce the risk of rotational and mid-cavity deliveries until there is a strong urge to push or the limits of time indicated in table 2 are exceeded.

2 How should operative vaginal delivery be defined?

A standard classification of operative vaginal delivery should be used.

To enable benchmarking, audit and comparison between studies, a standard definition of the types of operative delivery should be used. The American College of Obstetricians and Gynaecologists criteria are adapted in Table 1 and define the delivery by the station and position.

3. When should operative vaginal delivery be offered?

Operators should be aware that no indication is absolute and should be able to distinguish ‘standard’ from ‘special’ indications.

4. What are the essential conditions for safe operative vaginal delivery?

Safe operative vaginal delivery requires a careful assessment of the clinical situation, clear communication with the mother and healthcare personnel and expertise in the chosen procedure.

4. Performing operative vaginal delivery

1 Who should perform operative vaginal delivery?

The operator must have the knowledge, experience and skills necessary to use the instruments and manage complications that may arise.

Obstetricians should achieve experience in spontaneous vaginal delivery prior to commencing training in operative vaginal delivery.

Obstetric trainees should receive appropriate training in operative vaginal delivery. Competence should be confirmed prior to conducting unsupervised deliveries.

No data exist on the number of supervised procedures necessary before competence is gained. Individual centers should agree a training and assessment process with a clearly responsible trainer.

In Pakistan CPSP has designed a training instruction programmed for the trainee according to the table of specifications.

Recommended number of operative vaginal deliveries observed is 2, assisted is 2 followed by conducting under supervision and the independently conducted subsequently

(Reference to CPSP Intermediate Module Training Instructions for FCPS)

2 Where should operative vaginal delivery take place?

Operative vaginal births that have a higher rate of failure should be considered a trial and conducted in a place where immediate recourse to caesarean section can be undertaken. Early transfer of such women to equipped facility should be made .Arrangements should be in place for transfer to an equipped facility before attempting potentially difficult operative vaginal delivery in facilities with inability to proceed for emergency caesarean section.

An experienced operator should be present from the outset for all attempts at rotational or mid-cavity operative vaginal delivery.

Routine Operative vaginal delivery should be performed in the labor room & difficult operative delivery with high risk of failure should be performed in operation theatre.

3 What instruments should be used for operative vaginal delivery?

The operator should choose the instrument most appropriate to the clinical circumstances and their level of skill. Forceps and vacuum extraction are associated with different benefits and risks.

The options available for rotational delivery include manual rotation followed by direct traction forceps or rotational vacuum extraction. Rotational deliveries should be performed by experienced operators, the choice depending upon the expertise of the individual operator.

4 When should operative vaginal delivery be abandoned?

Operative vaginal delivery should not be attempted unless the criteria for safe delivery have been met (Table 3).

Operative vaginal delivery should be abandoned where there is no evidence of progressive descent with each pull or where delivery is not imminent following three pulls of a correctly applied instrument by an experienced operator.

Adverse outcomes, including unsuccessful forceps or vacuum delivery, should trigger an incident report as part of effective risk management processes.

Paired cord blood samples should be processed and recorded following all attempts at operative vaginal delivery subject to availability of functioning acid base analyzer & funding at care facility.

5 Is there a place for sequential use of instruments?

The use of sequential instruments is associated with an increased risk of trauma to the infant, Especially when the failure is not due to technical error in the vacuum apparatus.

However, the operator must balance the risks of a caesarean section following failed vacuum extraction with the risks of forceps delivery following failed vacuum extraction.

6 What is the role of episiotomy for operative vaginal delivery?

The role of routine episiotomy for operative vaginal delivery is poorly evaluated and warrants further research.

Until further research provides data to the contrary, liberal use of episiotomy is recommended in operative vaginal deliveries especially in forceps to avoid third & fourth degree Perineal tears.

7 Should prophylactic antibiotics be given?

There is insufficient data to make recommendations regarding prophylactic antibiotics in operative vaginal delivery. However this expert group of SOGP recommends routine antibiotic prophylaxis in operative delivery.

Good standards of hygiene and aseptic techniques are recommended.

5. Aftercare following operative vaginal delivery

1 Should thromboprophylaxis be given?

Women should be reassessed after an operative delivery for risk factors for venous thromboembolism

2 What analgesia should be given after delivery?

Regular paracetamol and diclofenac should be considered after an operative vaginal delivery in the absence of contraindications

3 What precautions should be taken for care of the bladder after delivery?

The timing and volume of the first void urine should be monitored by verbal inquiry.

A post-void residual should be measured if retention is suspected by ultrasound or urinary catheterisation and quantified (in a kidney tray).

Women who have had spinal anaesthesia or epidural anaesthesia that has been topped up for a trial of labour may be at increased risk of retention and should be offered an indwelling catheter, to be kept in place for at least 12 hours following delivery to prevent asymptomatic bladder overfilling.

Women should be offered physiotherapy-directed strategies to prevent urinary incontinence in facilities with appropriate staff. Kegel's exercises explained by a doctor or midwife may be helpful.

How can we reduce psychological morbidity for the mother?

There is no evidence to support the use of midwife-led debriefing in reducing maternal depression following operative vaginal delivery.

Doctor on duty should review the woman prior to hospital discharge and discuss the indication for operative delivery, management of any complications and the prognosis for future deliveries.

5 How should we advise women for future deliveries?

Women should be encouraged to aim for a spontaneous vaginal delivery in a subsequent pregnancy, as there is a high probability of success.

6. Auditable standards

- Rate of operative vaginal delivery.
- Rate of failed operative vaginal delivery.
- Rate of sequential instrument use.
- Rate of third- and fourth-degree perineal tears.
- Rate of neonatal morbidity to composite trauma (cephalhaematoma, brachial plexus injury, fracture, facial
- Nerve palsy, cerebral haemorrhage), low APGAR (less than 7 at 5 minutes) and cord arterial pH less than 7.1.
- Standard of documentation.

Audit should be performed on an individual operator basis as well as for the unit as a whole.

Table 1 **Classification for operative vaginal delivery**
(Adapted from ACOG 2000)

| Term | Definition |
|---------------|---|
| Outlet | Fetal scalp visible without separating the labia Fetal skull has reached the pelvic floor Sagittal suture is in the antero-posterior diameter or right or left Occipito anterior or posterior Position (rotation does not exceed 45 degrees) Fetal head is at or on the perineum |
| Low | Leading point of the skull (not caput) is at station plus 2 cm or more and not on the pelvic floor Two subdivisions: (a) Rotation of 45 degrees or less (b) Rotation more than 45 degrees |
| Mid | Fetal head is 1/5 palpable per abdomen Leading point of the skull is above station plus 2 cm but not above the Ischial spines Two subdivisions (a) Rotation of 45 degrees or less (b) Rotation more than 45 degrees |
| High | Not included in classification |

Table 2 **Indications for operative vaginal delivery**
(No indication is absolute and each case should be considered individually)

| Type | Indication |
|----------------------------|---|
| Fetal | Presumed fetal compromise |
| Maternal | Medical indications to avoid Valsalva (e.g. cardiac disease Class III or IV, a hypertensive crises, cerebral vascular disease, particularly uncorrected cerebral vascular malformations, myasthenia gravis, spinal cord injury) |
| Inadequate progress | Nulliparous women: lack of continuing progress for three hours (total of active and passive second stage labour) with regional anaesthesia, or two hours without regional anaesthesia Multiparous women: lack of continuing progress for two hours (total of active and passive second stage labour) with regional anaesthesia, or one hour without regional anaesthesia |

Table 3 **Prerequisites for operative vaginal delivery**
(Adapted from SOGC, 2004, RANZOG 2002)

| | |
|---|--|
| Preparation | Essential |
| Full abdominal And vaginal Examination | <p>Head is $\leq 1/5$ palpable per abdomen Vertex presentation Cervix is fully dilated and the membranes ruptured Exact position of the head can be determined so proper placement of the instrument can be achieved. Pelvis is deemed adequate</p> |
| Mother | <p>Informed consent must be obtained and clear explanation given Appropriate analgesia is in place, for mid-cavity rotational deliveries this will usually be a regional block. A pudendal block may be appropriate, particularly in the context of urgent delivery Maternal bladder has been emptied recently Indwelling catheter should be removed or balloon deflated Aseptic techniques</p> |
| Staff | <p>Operator must have the knowledge, experience and skills necessary to use The instruments. Adequate facilities and back-up personnel are available Back-up plan in place in case of failure to deliver Anticipation of complications that may arise (e.g. shoulder dystocia, Postpartum haemorrhage) Personnel present who are trained in neonatal resuscitation.</p> |