

CHAPTER 18

OPERATIVE VAGINAL DELIVERY

Learning Objectives

By the end of this chapter, the participant will:

1. Compare and contrast the methods available for operative vaginal delivery including the benefits, risks and indications for each method.
2. Describe the mnemonic for the safe use of vacuum and forceps for operative vaginal delivery.
3. Describe the appropriate documentation that should be recorded after every operative vaginal delivery.

Introduction

Operative vaginal delivery refers to the use of a vacuum or forceps in vaginal deliveries. Both methods are safe and reliable for assisting childbirth, if appropriate attention is paid to the indications and contraindications for the procedures. The benefits and risks to both the woman and her fetus of using either instrument or the risks associated with proceeding to the alternative of cesarean section delivery must be considered in every case.

The choice of instrument should suit both the clinical circumstances, the skill of the health care provider and the acceptance of the woman. The health care provider should have training, experience and judgmental ability with the instrument chosen.

Informed consent is an essential step in preparing for an operative vaginal delivery.

Operative vaginal delivery should be avoided in women who are HIV positive to reduce mother-to-child transmission. If forceps or vacuum is necessary, avoid performing an episiotomy.

Assessing the Descent of the Baby

Prior to performing an operative delivery, it is essential to determine that the vertex is fully engaged. Descent of the baby may be assessed abdominally or vaginally.

When there is a significant degree of caput (swelling) or molding (overlapping of the fetal skull bones), assessment by abdominal palpation using “fifths of head palpable” is more useful than assessment by vaginal examination.

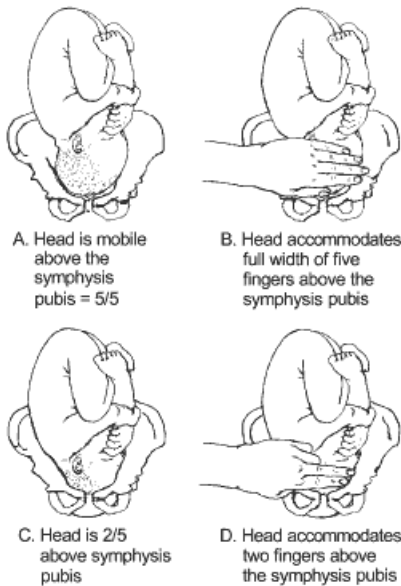


Figure 1 - Abdominal palpation for descent of the fetal head

Reproduced from: *Managing complications in pregnancy and childbirth: a guide for doctors and midwives*. Geneva: World Health Organization; 2000. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>.

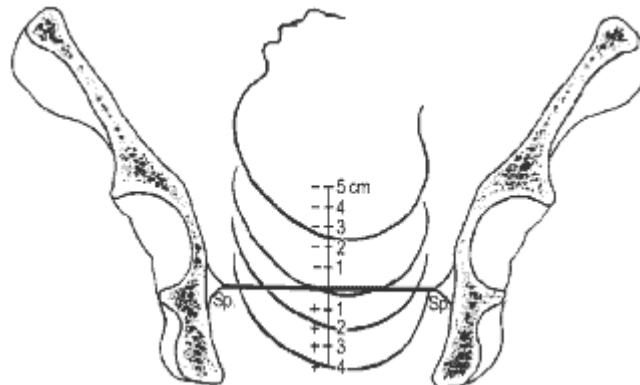


Figure 2 - Assessing descent of the fetal head by vaginal examination
0 station is at the level of the ischial spine

Reproduced from: *Managing complications in pregnancy and childbirth: a guide for doctors and midwives*. Geneva: World Health Organization; 2000. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>.

Vacuum Assisted Delivery

The vacuum should not be regarded as an easier alternative to forceps. Use of vacuum equipment requires different but not less skill.

The vacuum is designed to produce traction upon the fetal scalp in order to assist maternal expulsive efforts. It cannot be used to apply rotational forces. **Trying to complete a rotation can cause a skull fracture or a hemorrhage resulting in serious harm to the baby.** The vacuum will not succeed in the absence of maternal expulsive effort. The vacuum may be used judiciously to correct attitude (deflexion), if it is properly applied and appropriate traction used.

Indications

Fetal

- Evidence of fetal compromise that requires immediate delivery

Maternal

- Failure to deliver spontaneously following the appropriate management of the second stage of labour
- Conditions which require a shortened second stage or in which pushing is contraindicated (e.g. some maternal medical conditions)
- Maternal exhaustion

Contraindications

Contraindications can be divided into absolute and relative contraindications. As with any relative contraindication to a procedure, the applicability of the criteria will depend on the clinical circumstances and the skill of the health care provider.

Contraindications – Absolute

- Non-vertex presentation
- Face or brow presentation
- Unengaged vertex
- Incompletely dilated cervix
- Clinical evidence of cephalopelvic disproportion (CPD)

Contraindications – Relative

- Preterm less than 35 weeks or estimated fetal weight < 2500 grams
- Mid-pelvic station
- Unfavourable attitude of the fetal head

Previous fetal scalp sampling is not a contraindication to vacuum delivery.

Prerequisites

- Informed consent
- Vertex presentation
- Engaged vertex
- Term fetus
- Estimated fetal weight > 2500 grams
- Fully dilated cervix
- Ruptured membranes
- Adequate maternal pelvis by clinical assessment
- Empty maternal bladder
- Appropriate analgesia, if available
- Adequate facilities and backup available
- Health care provider knowledgeable about the instrument, its use and the complications that may arise from its use
- Ongoing fetal and maternal assessment

Technique

A useful mnemonic, which was initially developed for forceps deliveries, has been adapted for vacuum extraction.¹ This mnemonic is the first 10 letters of the English alphabet. A copy is included at the end of this chapter (in Appendix 1) for use in the operative vaginal birth workshop and may be copied for use on the labour and delivery ward.

The vacuum should be applied with rigorous adherence to the mnemonic provided. It is important that the indication is clear and well understood by the parents. Consent of the woman must be obtained and properly documented.

- Provide emotional support and encouragement.
- Analgesia is not essential but may be desirable, if available.
- The bladder should be empty. If the woman is not able to void, consider catheterization.
- Final confirmation of full dilatation and fetal position should be made.
- The proper function of the vacuum equipment should be determined before the cup is applied.
- The cup is applied by compressing it in an anteroposterior diameter and then introducing it into the posterior fourchette while protecting the maternal tissues and making space with the opposite hand.

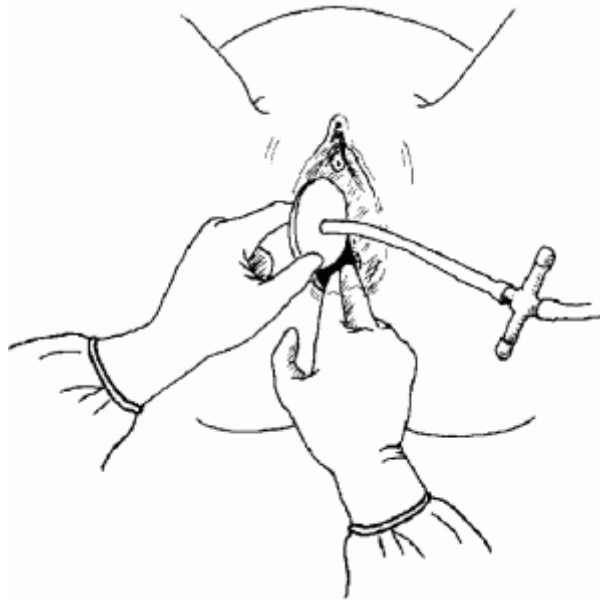


Figure 3 - Applying a vacuum cup

Adapted from: *Managing complications in pregnancy and childbirth: a guide for doctors and midwives*. Geneva: World Health Organization; 2000. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>.

- It is important to apply the vacuum cup to the flexion point for the best result. Once in the vagina, the cup is moved approximately 3 cm from the anterior fontanelle toward the posterior fontanelle over the sagittal suture.
- When the vacuum extractor cup is centered over the flexion point, flexion and asynclitism are promoted. Placing the cup off to the side of the sagittal suture or closer to the anterior fontanelle promotes asynclitism, deflexion and cup disengagement. (See Figure 4.)

If using a 6 cm cup, to be over the flexion point, the leading edge should be 3 cm from the anterior fontanelle

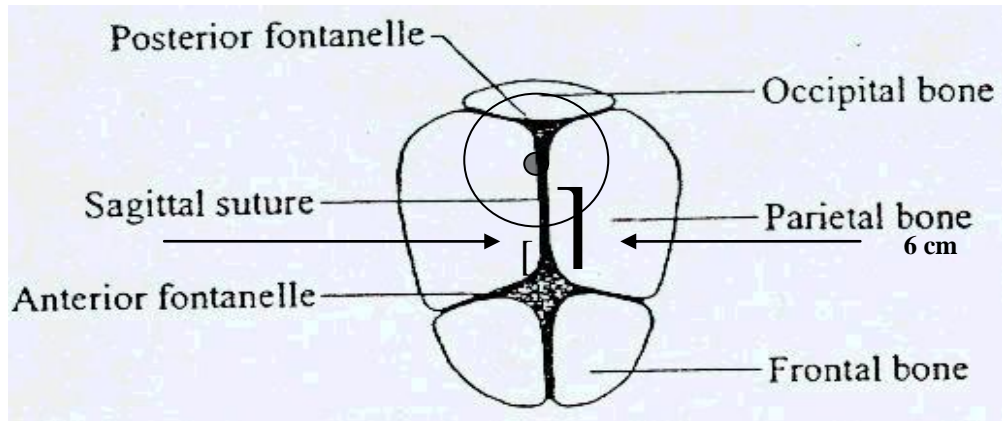


Figure 4 - Identifying the flexion point

- Take care to ensure that no maternal tissue is between the fetal head and the vacuum cup. This should be reconfirmed before each pull on the vacuum and following any re-application or suggestion of loss of contact during traction.

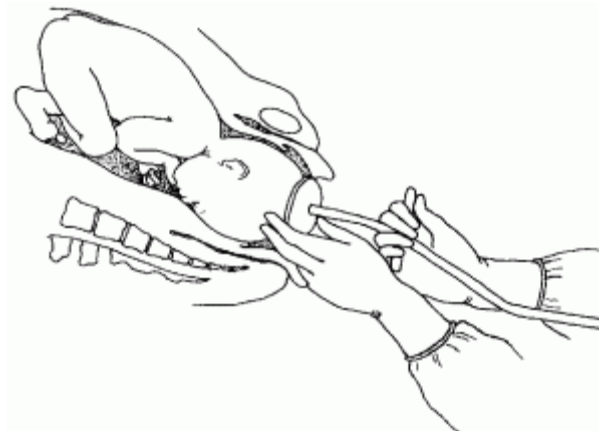


Figure 5 - Confirming placement of the vacuum cup

Adapted from: *Managing complications in pregnancy and childbirth: a guide for doctors and midwives*. Geneva: World Health Organization; 2000. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>.

- Traction is usually applied at settings between 500 and 600 mm Hg (0.6–0.8 kg/cm²). The vacuum pressure may or may not be released between contractions, to resting pressure settings of between 100 and 200 mm Hg (0.1–0.3 kg/cm²), depending on the type of vacuum used.
- No rotational force is applied; the fetal head may rotate on its own with descent.
- Traction should always be in the direction of the pelvic curve—initially downward and finally upward. A common error is to attempt to extend the head prematurely, thereby increasing the diameter that must pass over the perineum and increasing the likelihood of perineal trauma.
- Apply traction with contractions and with maternal expulsive efforts.

After every vacuum delivery, the newborn should be observed to ensure that the expected swelling on the head does not enlarge significantly and that there is no evidence of developing hypovolemia, which might occur with a subgaleal hemorrhage.

Vacuum failure

Before undertaking any attempt at operative vaginal delivery, consider the risk of failure for vaginal delivery and the potential for other complications, such as shoulder dystocia and postpartum hemorrhage. Ensure adequate assistance is present if such complications should occur. Consider the fetal status before making your attempt to deliver the baby and the time necessary to initiate a cesarean section if the procedure fails. Under circumstances in which fetal well-being is suspect and/or the potential for success of an operative vaginal delivery is in doubt, proceed directly to cesarean section, if available. If time permits, consider transfer to the next level of care. Whenever operative delivery is considered, a health care provider skilled in newborn resuscitation should be present at the birth. This person's sole responsibility must be the care of the newborn.

The vacuum procedure has failed when descent or delivery has not been accomplished. The procedure should be abandoned at this point, and an alternate method of delivery should be selected.

When to halt—beware

- 3 pulls over 3 contractions, no progress → abandon procedure
- 3 pop-offs: after 1, reassess carefully before reapplying
- After 20 minutes of application with no progress → reassess

The above recommendations should be considered the maximal limits. The incidence of scalp trauma is increased when the cup application is greater than 10 minutes compared to less than 10 minutes. **It is imperative that some descent is observed with each pull.** If these limits are approached, progress does not occur or there is evidence of scalp trauma, the procedure should be abandoned.

Potential complications

Complications usually result from not observing the conditions of application or from continuing efforts beyond the guidelines described above.

Fetal complications

- Localized scalp oedema (artificial caput or chignon) under the vacuum cup is harmless and usually disappears within a few hours.
- Cephalohematoma requires observation. It will usually resolve in 3–4 weeks.
- Scalp abrasions (common and harmless) and lacerations may occur. Clean and examine lacerations to determine if sutures are necessary. Necrosis is extremely rare.
- Intracranial bleeding is extremely rare. It requires immediate intensive neonatal care.

Maternal complications

- Tears of the genital tract may occur. Examine the woman carefully and [repair any tears to the cervix](#) or [vagina](#), or repair the [episiotomy](#).

Forceps-Assisted Delivery

Debate about the indications for and the safety of forceps operations have continued for over 200 years. Controversies have not been about simple outlet or low forceps procedures. They have focused on mid-forceps deliveries, especially mid-forceps rotations of a transverse or posterior head to an anterior position. The use of obstetrical forceps has decreased significantly during the past decade. Forceps deliveries have been replaced by the increased use of cesarean section.

Delivery trends for most countries indicate that rates of cesarean section have increased as operative vaginal delivery rates have fallen. This trend has NOT been shown to benefit either the woman or her baby.

Function of forceps

Obstetrical forceps applied to the fetal head perform the following functions:

- Traction
- Rotation
- Flexion
- Extension

When one or more of these functions is attempted, there is simultaneous fetal head compression. Head compression is the undesirable factor associated with the use of forceps. Proper technique, including accurate application and correct traction, can minimize compressive forces.

Indications

The indications for forceps use are similar to those for the use of vacuum, but they also include situations where the sub-optimal attitude of the fetal head may be corrected if the appropriate prerequisites are met.

Contraindications

Absolute

- Non-vertex presentation
- Face or brow presentation
- Unengaged vertex
- Incompletely dilated cervix
- Clinical evidence of CPD
- Any contraindication to vaginal delivery

Relative

- Preterm less than 35 weeks or estimated fetal weight <2500 grams
- Mid-pelvic station

Prerequisites

The prerequisites for forceps delivery are similar to those for vacuum delivery:

- Informed consent
- Engaged head
- Fully dilated and retracted cervix
- Ruptured membranes
- Exact position of the head determined
- Adequate pelvis
- Empty bladder
- Appropriate anesthesia in effect, if available
- Adequate facilities and backup available
- Health care provider knowledgeable about the instruments, their use and the complications that can arise from their use
- Ongoing fetal and maternal assessment

Technique

Safe and effective use of forceps depends on good technique. A mnemonic has been developed that may help to achieve this goal; it is included at the end of this chapter (in Appendix 2). It may be copied for use in labour and delivery wards.

- Assemble the forceps before application. Ensure that the parts fit together and lock well.
- Lubricate the blades of the forceps.
- Wearing sterile gloves, insert two fingers of the right hand into the vagina on the side of the fetal head. Slide the left blade gently between the head and fingers to rest on the side of the head.

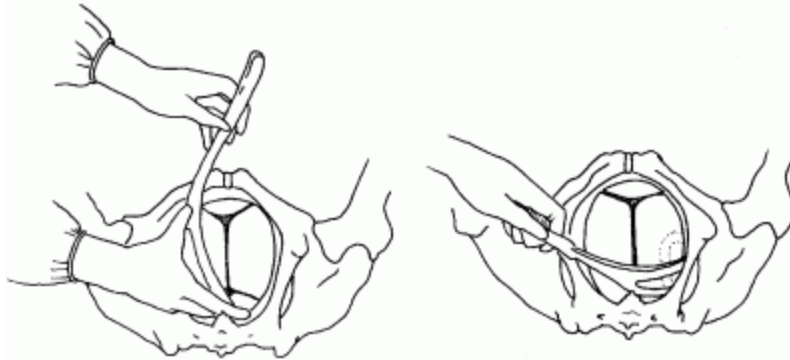


Figure 6 - Applying the left blade of the forceps

Adapted from: *Managing complications in pregnancy and childbirth: a guide for doctors and midwives*. Geneva: World Health Organization; 2000. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>

- Repeat the same manoeuvre on the other side, using the left hand and the right blade of the forceps.

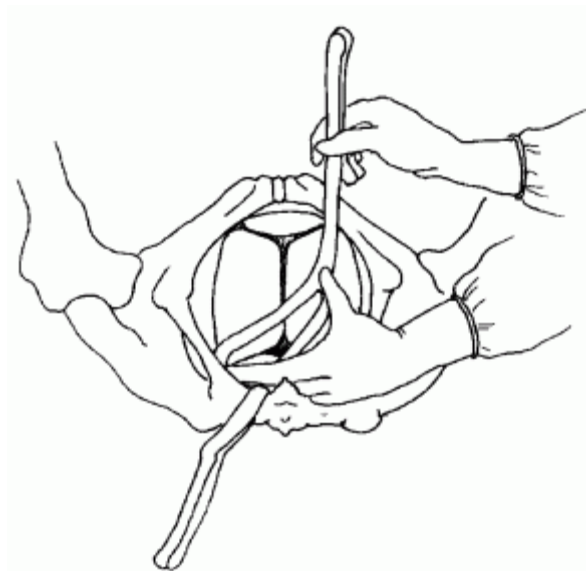


Figure 7 - Applying the right blade of the forceps

Adapted from: *Managing complications in pregnancy and childbirth: a guide for doctors and midwives*. Geneva: World Health Organization; 2000. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>

- Depress the handles and lock the forceps.
- Difficulty in locking usually indicates that the application is incorrect. In this case, remove the blades and recheck the position of the head. Reapply only if rotation is confirmed.

- After locking, apply steady traction inferiorly and posteriorly with each contraction.
- Between contractions check:
 - fetal heart rate, and
 - application of forceps.
- Lift the head slowly out of the vagina between contractions.

Forceps failure

- Forceps failed if:
 - Fetal head does not advance with each pull.
 - Fetus is undelivered after three pulls with no descent or after 30 minutes (WHO, 2003).
- Every application should be considered a trial of forceps. Do not persist if there is no descent with every pull.
- If **forceps delivery fails**, perform a cesarean section.

Complications

Fetal complications

- Injury to facial nerves requires observation. This injury is usually self-limiting.
- Lacerations of the face and scalp may occur. Clean and examine lacerations to determine if sutures are necessary.
- Fractures of the face and skull require observation.

Maternal complications

- Tears of the genital tract may occur. Examine the woman carefully and repair any tears to the cervix or vagina, or repair the episiotomy.
- Uterine rupture may occur and requires immediate treatment.

Classification

The classification of operative vaginal deliveries is based on the station of the head within the pelvis as defined by American College of Obstetricians and Gynecologists' Committee in Obstetrics, Maternal, and Fetal Medicine.

Outlet Forceps

- Scalp visible at the introitus without separating the labia
- Fetal skull has reached the pelvic floor
- The sagittal suture is in:
 - anteroposterior diameter
 - right or left occiput anterior or posterior position (i.e. rotation ≤ 45 degrees)
- Fetal head is at or on the perineum

Low Forceps

- Head is at Spines +2 cm or lower
- Two sub-divisions:
 - rotation of ≤ 45 degrees
 - rotation of ≥ 45 degrees

Mid-Forceps

- Head is engaged at Spines 0 + 1
- Leading position of the skull is above station +2

It is questionable whether there remains a role for mid-forceps operations. The risk of a mid-forceps delivery must be compared with its alternative, an intrapartum cesarean section. When mid-forceps delivery is planned, there should be prompt access to cesarean delivery in case vaginal delivery is not easy, safe and feasible (i.e. trial of forceps).

FORCEPS SHOULD NEVER BE APPLIED THROUGH A CERVIX THAT IS NOT FULLY DILATED NOR WITH AN UNENGAGED PRESENTING PART.

Checking the application: 3 ways

1. The posterior fontanelle should be located midway between the sides of the blades, with the lambdoid sutures equidistant from the forceps blades and one fingerbreadth above the plane of the shanks.
2. The fenestration of the blades should be barely felt and the amount of fenestration felt on each side should be equal (with a solid blade, no more than a fingertip should be able to be inserted between the blade and the fetal head).
3. The sagittal suture must be perpendicular to the plane of the shanks throughout its length.

If the forceps are applied in such a manner that the plane of the shanks is too far from the posterior fontanelle, traction will result in deflection of the fetal head, increasing the diameter of the presenting part for delivery. If the sagittal suture is not perpendicular to the plane of the shanks throughout its length, the application of the forceps is asymmetrical, thus increasing the risk of fetal injury. If greater than a finger width of fenestration is still palpable after application of the blades, then the application of the blades may be too short and increase the likelihood of fetal injury.

Episiotomy

- Routine episiotomy has **NOT** been demonstrated to be an effective way to shorten the second stage of labour.
- Routine episiotomy has **NOT** been proven an essential part of an operative vaginal birth because it increases the incidence of maternal trauma.
- Midline episiotomies increase the risk of third and fourth degree tears in both spontaneous and operative deliveries. A mediolateral episiotomy should be used only when necessary.

Vacuum Versus Forceps Delivery

The relative benefits and risks for vacuum versus forceps delivery has been the subject of much study and debate. The proper comparison is not of vacuum with spontaneous delivery, but of vacuum with other operative vaginal delivery methods or cesarean section.

The potential risk of maternal soft tissue trauma can be best prevented by avoiding traumatic insertion of the device, by frequent checking for maternal soft tissue entrapment, by controlling for vacuum slippage or pop-off, by controlling the rate of descent and by controlling delivery over the perineum. Episiotomy is not obligatory with forceps or vacuum, but is more common with forceps.

Fetal scalp trauma (hemorrhage and laceration) can best be prevented by avoiding excessive, incorrect or prolonged traction and by avoiding rotational forces. Vacuum traction should be applied intermittently, and coordinated to the maternal expulsive effort. The correct angle of traction through the axis of parturition must be followed. The vacuum should not be used to apply rotational forces.

Assessment of pelvic adequacy is mandatory. Abnormalities of the position or attitude of the vertex can result in relative CPD. The station of the presenting vertex should be assessed both abdominally and pelvically. The presence of a large caput may confuse the assessment of descent, and may indicate the possibility of relative CPD.

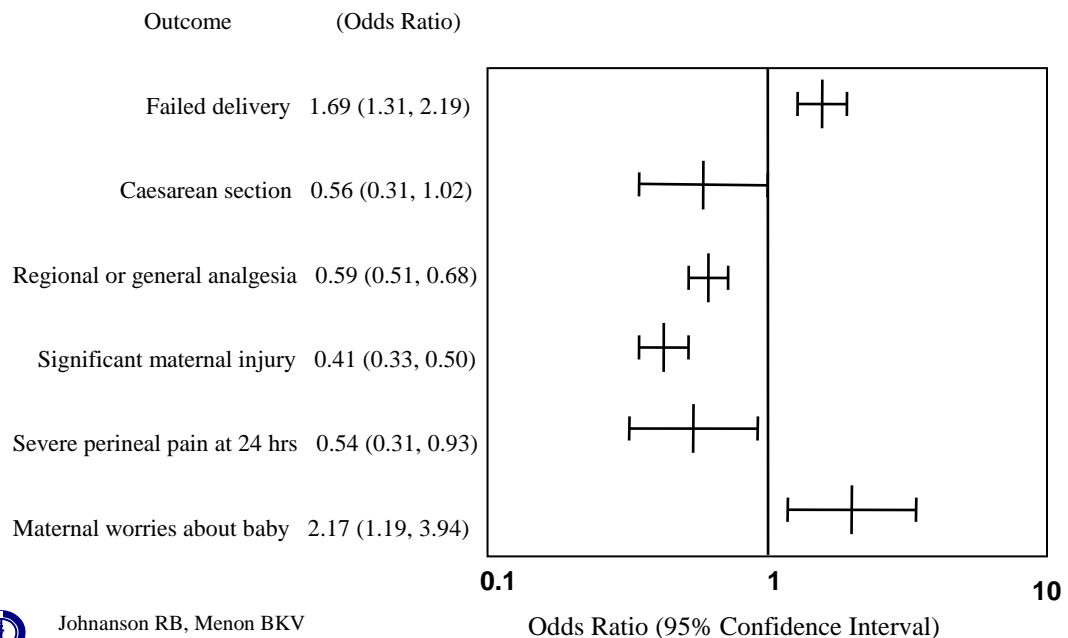
One serious potential complication of vacuum extractions is subgaleal or subaponeurotic hemorrhage. The suture lines of the skull do not limit hemorrhage into the subaponeurotic (subgaleal) space, as they do in cephalohematoma. As a result, subgaleal hemorrhages can extend from the brow ridge to the nuchal ridge and from ear to ear, covering the entire calvarium, with a potential volume of several hundred millilitres. This volume loss can produce profound, irreversible and fatal hypovolemic shock to the newborn; it can be fatal. Statistically, subgaleal hemorrhage occurs in approximately 1 in 1000 normal spontaneous vaginal deliveries and in 46 in 1000 vacuum extractions. Failure to recognize high pelvic station and/or CPD, and exceeding the recommended limits for the attempted vacuum extraction, are the two common health care provider errors associated with subgaleal hemorrhage.

NOTE: *Patients should be informed of the potential risks and benefits of the uses of both vacuum extraction and forceps delivery prior to their application.*

The two graphs in Figure 8 and Figure 9 illustrate the results of a meta analysis of controlled trials comparing vacuum versus forceps delivery.² The meta-analysis reported the following:

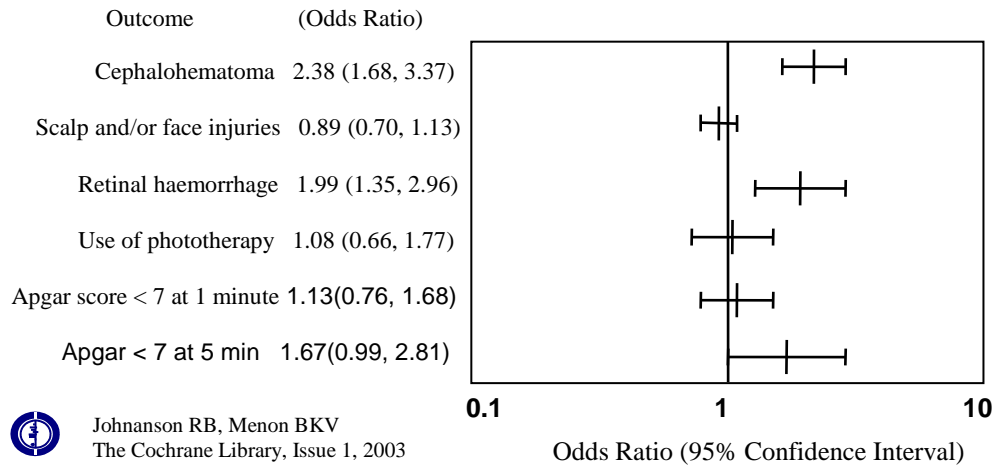
- Those women randomized to vacuum were more likely to fail vaginal delivery with the selected instrument. Ultimately, they were more likely to have a vaginal delivery because forceps were used in some cases after a failed vacuum delivery.
- Vacuum extractor use was associated with significantly less maternal trauma (odds ratio, 0.41; 95% confidence interval, 0.33–0.50) and with less general and regional anaesthesia.
- Fewer cesarean sections were carried out in the vacuum extractor group.
- Vacuum extractor use was associated with an increase in neonatal cephalhematomata and retinal hemorrhages.

Figure 8: Vacuum vs. Forceps Delivery (Maternal)



Johnanson RB, Menon BKV
The Cochrane Library, Issue 1, 2003

Figure 9 - Vacuum vs. Forceps Delivery (Neonatal)



Johnanson RB, Menon BKV
The Cochrane Library, Issue 1, 2003

Care after Operative Vaginal Birth

- Active third stage management
- Prepare for newborn resuscitation
- Umbilical arterial blood gas analysis, where laboratory facilities exist
- Examination for maternal trauma
- Examination for neonatal trauma
 - Scalp trauma
 - Signs of cerebral irritation (poor sucking, listless)
 - Signs of scalp swelling, cephalohematoma or subaponeurotic bleeds
 - The newborn should be examined carefully at the time of the initial newborn exam. Careful monitoring should be continued in the immediate neonatal period and, at minimum, a second full examination of the newborn should be completed prior to discharge. Any abnormal findings will require further investigation.
- Documentation of the indication, definition and method of operative technique
- Review birth with the family

Documentation

The indication, definition and method of operative technique employed must be clearly and completely documented in all operative deliveries. The position and station of the fetal head at the commencement of the intervention must be stated. A written note should be prepared for both the woman's and the baby's charts.

The need for the intervention must be:

- Convincing
- Compelling
- Documented

Suggested format for a chart note that may also serve as a template to dictate a delivery summary:

- Date and time of birth
- Name of physician or other primary health care provider
- Indication for operative delivery

- Record of informed discussion with the woman of the risks, benefits, and options
- Position and station of the fetal head and method of assessment (i.e. vaginally and/or abdominally)
- Amount of molding and caput present
- Assessment of maternal pelvis
- Assessment of fetal heart rate and contractions
- Type of analgesia or anesthesia used, if any
- Use of episiotomy, description and timing, and details of repair
- Ease of application of vacuum or forceps
- Number of attempts and duration of traction for forceps and duration of application for vacuum (start and stop time noted), and force used
- Apgar score
- Results of cord blood analysis, if done
- Neonatal resuscitation activities, if needed
- Description of maternal and neonatal injuries, if any

Documentation tool

The Society of Obstetricians and Gynaecologists of Canada has developed a documentation tool to assess operative vaginal deliveries. The documentation tool for vacuum extraction is included in Appendix 3. Use of the documentation tool is recommended as a means for monitoring the use of the vacuum extractor.



Key Messages

1. Operative delivery by vacuum or forceps is an invasive procedure that requires good communication with the woman.
2. The need for operative delivery must be convincing, compelling and well documented.
3. Use the mnemonic to ensure a safe technique and to reduce harm to the woman and her fetus.

Suggestion for Applying the Sexual and Reproductive Rights Approach to this Chapter

Reduce trauma to the perineum during forceps or vacuum delivery by avoiding routine episiotomy. Episiotomy is not always necessary with either a forceps or vacuum delivery. It is possible to perform an operative delivery over an intact perineum. Women appreciate having an intact perineum. Episiotomy increases pain and the risk of infection in the postpartum period.

APPENDIX 1

VACUUM MNEMONIC

A	ANAESTHESIA ASSISTANCE	<ul style="list-style-type: none"> - adequate pain relief - neonatal support
B	BLADDER	<ul style="list-style-type: none"> - bladder empty
C	CERVIX	<ul style="list-style-type: none"> - fully dilated, membranes ruptured
D	DETERMINE	<ul style="list-style-type: none"> - position, station and pelvic adequacy - think possible shoulder dystocia
E	EQUIPMENT	<ul style="list-style-type: none"> - inspect vacuum cup, pump and tubing - check pressure
F	FONTANELLE	<ul style="list-style-type: none"> - position the cup over the posterior fontanelle - sweep finger around cup to clear maternal tissue
G	GENTLE TRACTION	<ul style="list-style-type: none"> - 100 mm Hg initially and between contractions - pull with contractions only - As contraction begins: <ul style="list-style-type: none"> - increase pressure to 600 mm Hg - prompt the woman for good expulsive effort - traction in axis of birth canal
H	HALT	<ul style="list-style-type: none"> - no progress with 3 traction aided contractions - vacuum pops off 3 times - no significant progress after 20 minutes of operative vaginal delivery
I	INCISION	<ul style="list-style-type: none"> - consider episiotomy if laceration imminent
J	JAW	<ul style="list-style-type: none"> - remove vacuum when jaw is reachable or delivery assured

APPENDIX 2

FORCEPS MNEMONIC

A	ANAESTHESIA ASSISTANCE	<ul style="list-style-type: none"> - adequate pain relief - neonatal support
B	BLADDER	<ul style="list-style-type: none"> - bladder empty
C	CERVIX	<ul style="list-style-type: none"> - fully dilated, membranes ruptured
D	DETERMINE	<ul style="list-style-type: none"> - position, station and pelvic adequacy - think possible shoulder dystocia
E	EQUIPMENT	<ul style="list-style-type: none"> - verify quality and functionality of equipment
F	FORCEPS	<ul style="list-style-type: none"> - phantom application - left blade, left hand, maternal left side, pencil grip and vertical insertion, with right thumb directing blade - right blade, right hand, maternal right side, pencil grip and vertical insertion with left thumb directing blade - lock blade and support, and check application - posterior fontanelle 1 cm above plane of shanks - fenestration no more than a fingerbreadth between it and scalp - sagittal suture perpendicular to plane of shanks with occipital sutures 1 cm above respective blades
G	GENTLE TRACTION	<ul style="list-style-type: none"> - applied with contraction and/or expulsive effort
H	HANDLE ELEVATED	<ul style="list-style-type: none"> - traction in axis of birth canal - do not elevate handle too early
I	INCISION	<ul style="list-style-type: none"> - consider episiotomy
J	JAW	<ul style="list-style-type: none"> - remove forceps when jaw is reachable or delivery assured

APPENDIX 3

VACUUM EXTRACTION DOCUMENTATION TOOL

Hospital ID #: _____ Healthcare Provider ID #: _____

Patient Demographics:

Age: _____ Weight _____ Gravida: _____ Height: _____ Para: _____

Number of previous vaginal delivery: 0 ≥1

Gestational age (in completed weeks): _____

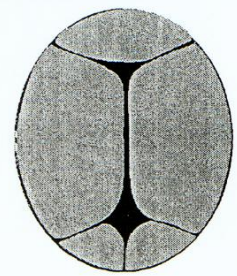
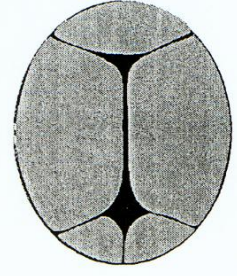
Physician Demographics:

Age: _____ Gender (M or F): _____ Year of Graduation (from fellowship): _____

Indications for VE	
Estimated chance of success: <input type="checkbox"/> >95 % <input type="checkbox"/> 80%—95 % <input type="checkbox"/> 50%—79 % <input type="checkbox"/> <50%	
Fetal: <input type="checkbox"/> Fetal intolerance to labour <input type="checkbox"/> Other: _____ Maternal <input type="checkbox"/> 2nd stage dystocia <input type="checkbox"/> Intolerance to labour <input type="checkbox"/> Medical <input type="checkbox"/> Pain <input type="checkbox"/> Exhaustion <input type="checkbox"/> Other: _____	Analgesia: <input type="checkbox"/> Narcotics <input type="checkbox"/> Local <input type="checkbox"/> Pudendal <input type="checkbox"/> Epidural

Prerequisites	
Consent obtained: Yes No Bladder Emptied: Yes No Dilation: <input type="checkbox"/> Full <input type="checkbox"/> _____ cm Station: +5 +4 +3 +2 +1 0	Position: <input type="checkbox"/> OA <input type="checkbox"/> midline <input type="checkbox"/> ≤45 ° from midline <input type="checkbox"/> >45 ° from midline <input type="checkbox"/> OT <input type="checkbox"/> OP <input type="checkbox"/> ≤45 ° from midline <input type="checkbox"/> >45 ° from midline Singleton presentation: <input type="checkbox"/> Yes <input type="checkbox"/> No

Procedure	
<p>Release of pressure between contractions: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Maximum pressured used: _____ mm Hg</p> <p style="text-align: center;">Time</p> <p>Full Dilation: :____</p> <p>Pushing Started: :____</p> <p>VE Procedure Started: :____</p> <p>VE Procedure Stopped: :____</p> <p>_____ # of contractions during VE procedure:</p> <p>_____ # of pop-offs during VE procedure:</p> <p>Delivery: :____</p> <p>Was fetal well-being monitored during the procedure? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p> If yes, how? <input type="checkbox"/> IA <input type="checkbox"/> EFM <input type="checkbox"/> Doppler</p>	<p>Were the forceps used first? Successfully <input type="checkbox"/> Unsuccessfully <input type="checkbox"/></p> <p>Was vacuum extraction successful? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, why?</p> <p><input type="checkbox"/> Failure of descent <input type="checkbox"/> Equipment failure <input type="checkbox"/> Fetal intolerance <input type="checkbox"/> Maternal intolerance</p> <p>Delivery accomplished by:</p> <p><input type="checkbox"/> Spontaneous vaginal delivery <input type="checkbox"/> Forceps <input type="checkbox"/> C-section</p>

Outcome	
<p>Apgar at 1 minute: _____</p> <p>Apgar at 5 minutes: _____</p> <p>Cord Ph: _____</p> <p>PCO2: _____ BE/BD: _____</p> <p>Baby's weight: _____</p> <p>Position at delivery: <input type="checkbox"/> OA <input type="checkbox"/> OP</p> <p>Was position anticipated? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Did the baby need enhanced care? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Did the baby have:</p> <p> Intraventricular hemorrhage <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p> Subgaleal hemorrhage <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>NICU discharge: IVH? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p> SGH? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Perineal trauma: <input type="checkbox"/> 0 (nil) <input type="checkbox"/> 1° <input type="checkbox"/> 2° <input type="checkbox"/> 3° <input type="checkbox"/> 4°</p> <p>Estimated maternal blood loss: <input type="checkbox"/> <500 ml <input type="checkbox"/> 500–1000 ml <input type="checkbox"/> >1000 ml</p>	<p style="text-align: center;">Position of Vacuum</p>  <p style="text-align: center;">Please draw where you think you placed the cup.</p>  <p style="text-align: center;">Please draw the position of the chignon.</p>

Resources:

- JOGC, Journal of Obstetrics and Gynaecology Canada, Volume 26, number 8 August 2004 p. 747–753
- Operative Vaginal Delivery, an SOGC educational video presentation sponsored by Janssen Ortho with Dr. K. Milne, Jan. 1999
- WHO, Managing complications in pregnancy and childbirth: a guide for doctors and midwives. Geneva: World Health Organization; 2003. Available: <http://www.who.int/reproductive-health/impac/mcpc.pdf>
- Bachman J. *A Vacuum Operation Needs To Be Documented in the Same Manner As Any Other Operative Procedure*. Forceps Delivery Correspondence. J Am Acad Fam Practi 1989; 29:4.
- Bachman J. *A Forceps Operation Needs To Be Documented in the Same Manner As Any Other Operative Procedure*. Forceps Delivery Correspondence. J Am Acad Fam Practi 1989; 29:4.

¹ Bachman JW. Forceps delivery. J Fam Pract. 1989;29:360.

² Johanson RB, Menon V, The Cochrane Library, Issue 1, 2003.