The occasional vaginal delivery

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There was a day when the normal vaginal delivery was considered a core part of any rural physician's skill set, and, as such, inclusion of "the occasional vaginal delivery" in a series such as this would be considered heresy. However, obstetric skills are now specialty skills that fewer family doctors possess. Only 10.5% of all Canadian family doctors provide intrapartum care.[1] A dwindling number of rural hospitals continue to provide maternity care, whether because of a lack of physician and/or nursing resources or regionalization of programs.[2–4]

Despite the choices made by hospital administrators and physicians, babies continue to arrive when they want to arrive, and mothers will continue to deliver in rural hospitals either before personnel trained in obstetrics can arrive or before transfer to an obstetrics centre can take place. As the physician delivering these babies, take solace in the fact that most of them largely deliver themselves. Your job is merely to guide the process, anticipating and minimizing complications.

If you're in a real hurry, just skip to the bold parts.

First, assess the patient. When is her due date? How long has she been in labour and what is her contraction pattern (i.e., frequency, length and strength)? A "good" labour pattern will consist of a strong (i.e., quite painful) contraction every 3–5 minutes lasting at least 60 seconds. How many babies has she had before and how long was/were her labour(s)? The average first labour lasts 8–12 hours, and the average second labour lasts 5–6 hours.[5,6] Have her membranes ruptured, and, if so, what colour was the fluid?

The physical examination starts with assessing maternal vitals and fetal heart rate (normal 120–160 beats/min). An assessment of cervical dilation should be performed; dilation will range from closed (usually also long and posterior) to fully dilated (10 cm). Accurate assessment of cervical dilation is a skill that requires practice and, for the purposes of emergency delivery, differentiating between barely open, half open, mostly open and fully open is adequate. Slide 2 fingers into the vagina as if doing a bimanual examination. When you strike the presenting part (hopefully, a hard, head-like presenting part) feel for a ring of tissue around the edges. Mentally approximate the diameter or the percentage of the head no longer covered (60% open = 6 cm dilated). If possible, determine any change in the cervix over time.

Decide on transfer. Consider all the information you have gathered to decide whether to transfer the patient. Any patient who is 8–9 cm dilated or experiencing an urge to push should not be transferred, no matter how close the obstetrics centre. Even observation over 15 minutes will often give you a good sense for the women who are moving too quickly to avoid delivery en route. Whenever possible, attempt to transfer women in premature labour, but bear in mind that although resuscitating a premature newborn is daunting, doing so in a moving ambulance is doubly so. Any woman in active labour should be accompanied en route by either a physician or an experienced obstetric nurse. Do not hesitate to consult the obstetrician on call at your

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referral centre to aid in decision-making.

Call for help in the form of 2 nurses and a second physician, if possible. Consider contacting neonatal transport if problems are anticipated or the baby is premature. **Select a room for delivery** that is large enough to accommodate the extra help plus 1 or 2 family members. If possible, warm the room, because newborns do not regulate their own temperature well. A fancy bed and stirrups are not necessary — in fact, the end of a stretcher as a landing pad is quite handy. Although oxygen and wall suction are not needed for every delivery, they are useful.

Grab your emergency delivery kit. Suggested contents are in Box 1. At minimum, you'll need a clean sheet or flannel, 2 clamps, some gloves (preferably sterile) and a pair of scissors. No intravenous line is necessary. The only drug you'll need is oxytocin for intramuscular administration. Remember that birth is a clean but not a sterile procedure.

Monitor the baby. If you have a portable Doppler fetal monitor, it can be used to monitor the baby throughout the labour. Listen following contractions, every 30 minutes during the first stage (until pushing begins) and every 5 minutes during the second stage. It is not uncommon for the heart rate to drop as low as 60 beats/min during or following a push, but it usually comes back up to at least 100 beats/min within 30 seconds. If the fetal heart is persistently low, first ensure you are not listening to the mother's pulse. If it is truly the baby's heart rate, first change maternal position (e.g., side to side) then do what you can to expedite delivery (e.g., stronger pushes, episiotomy or operative delivery).

Get pushing. Once you have confirmed the patient is fully dilated, pushing can begin. Most women have an overwhelming urge to push and need little or no guidance. Most women deliver in the dorsal lithotomy position with legs upraised. Traditionally, women have been coached to hold their breath and bear down until they need a quick breath. Women should only push with contractions and aim for 3 long pushes per contraction. Coached pushing has been shown only to shorten the second stage of labour by 13 minutes[7] and may or may not be associated with greater birth trauma.[8] In general, allowing a woman to "do what comes naturally" may be best.

Babies often "rock" in the birth canal before passing the ischial spines. When this is complete, the baby crowns with the head resting at and stretching the perineum (Fig. 1). **Rapid delivery of the head should be avoided to allow tissues to stretch and to avoid perineal trauma.** One of the birth attendant's hands can be placed on the fetal head to control the delivery and help stretch tissues. The second hand is often placed on the perineum to protect it (Fig. 2). A towel draped over the perineum will also prevent soiling; it is common for the bowels to be emptied by the pressure of the descending head. At this stage, coaching the women to give small, grunty pushes can help to slowly stretch tissue, avoiding perineal lacerations. Episiotomy is rarely indicated.

Once the head is delivered, it will usually spontaneously return to the transverse position. A head that "turtles" back against the perineum and does not spontaneously restitute should alert you to the possibility of shoulder dystocia. **Check the baby's neck for cord** (Fig. 3), and, if possible, gently slide the cord over the baby's head before delivery of the shoulders.

Box 1. Equipment for emergency delivery

Necessary:
Two clamps
Sterile scissors
Two blankets (preferably warm)
Gloves (preferably sterile)
Oxytocin, 10 mg for intramuscular administration

Helpful:
Bowl to catch placenta
Bulb or wall suction
Oxygen
Sterile towel
4 × 4 gauze
Doppler fetal monitor



Fig. 1. The crowning point of delivery with the baby's head resting at and stretching the perineum.

Delivery of the shoulders is affected with maternal pushing and gentle downward guidance of the fetal head until the anterior shoulder is delivered, followed by gentle upward guidance for the posterior shoulder (Fig. 4 and 5). Sometimes, hooking the anterior shoulder can expedite delivery of the shoulders, but take care not to put pressure in the axilla. Never pull or pivot the baby's head, because this can cause injury to the brachial plexus. After delivery of the shoulders, the rest of the baby should come easily. **Administer 10 mg of oxytocin intramuscularly immediately after delivery** to aid in placental separation and to reduce postpartum bleeding.

Remember that newborns are slippery and care should be taken not to drop the infant. For this reason, I am fond of having the foot of the bed ready to place the baby on immediately after delivery, rather than "breaking the bed."

The baby should be dried to assist in temperature regulation and provide stimulation. **The cord should be double clamped and cut** close to, but not at, the umbilicus. Remember that cutting the cord is



Fig. 2. Place a hand on the perineum to protect it.



Fig. 3. Check the baby's neck for cord.



Fig. 4. Gently guide the head until the anterior shoulder is delivered.



Fig. 5. Gently guide the head upward for delivery of the posterior shoulder.



Fig. 6. Place a hand on the uterus just above the symphysis pubis to prevent descent of the uterus and uterine inversion.

now commonly considered the father's task. The baby should be wrapped in a warm, dry blanket and can be placed directly in the mother's arms. Suctioning is only required if the newborn is having respiratory difficulty. Routine suctioning of neonates is no longer recommended.[9]

The placenta will normally deliver spontaneously 5–10 minutes after delivery. This is often preceded by a gush of blood and lengthening of the cord. Delivery can be assisted by maternal pushing or gentle traction on the cord. Many practitioners will place a hand on the uterus just above the symphysis pubis to prevent descent of the uterus and uterine inversion (Fig. 6). Excessive traction on the cord can result in catastrophic consequences, including cord tearing and uterine inversion. Be patient, it may take up to 30 minutes for normal separation and delivery of the placenta. The placenta should be inspected to ensure no pieces are missing. If excessive bleeding continues after delivery of the placenta, massage the fundus and remove any clots palpable in the cervical os.

Inspect the perineum for tears. Small tears do not need to be repaired if hemostasis is good. It is often difficult to make heads or tails of vaginal and perineal lacerations. Most, however, can wait for more experienced hands to repair them. The vagina can be packed, if necessary, to control bleeding while waiting. Repair should be done with 3–0 or larger absorbable suture under local anesthesia.

The occasional vaginal delivery can be nerve-racking for the nonobstetric physician. However, most of these deliveries occur without event and only require gentle guidance and control from the attending physician.

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