

Emergency management of hurried obstetric labor and delivery

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None

Labor develops rapidly in 10% of all obstetric deliveries and in 3% of births at full-term. Rapid labor and delivery are most often seen in multiparous women or when birth is premature (gestation less than 37 weeks). The possible complications of this type of delivery are hypoxia, fetal injury, birth canal injury, secondary uterine atony, and more rarely a ruptured uterus and amniotic fluid embolism. Emergency department staff should therefore be trained in the measures that are essential for managing cases of early or rapid labor. We present a summary of the basic steps to take in this situation. [Emergencias 2010;22:140-143]

Key words: Labor, obstetric. Emergency health services.

Introduction

According to the Spanish Society of Gynecology and Obstetrics (SEGO), the successful birth of a child is not a chance event, despite appearances; rather, it is the result of proper and correct attention¹. SEGO considers that the ultimate goal is to ensure, throughout the delivery process, the welfare of both mother and newborn. Under certain circumstances the birth process may be advanced and occur in a place outside the hospital delivery room, such as the emergency department (ED). This is the case when the process of birth begins within 3 hours after the initiation of labour contractions².

Material

The material required, which should be kept in a specific place in the ED allowing rapid access, is described in Table 1³.

Basic sequence of action

On the arrival of a pregnant patient about to give birth, the first step is to assess the stage of

labour. In most cases this will be the late stage of expulsion, generally with a Hodge plane IV, ie. fetal head visible without opening the labia majora².

The most common position for the mother is face up, lying on a stretcher or bed, with hips and knees partially flexed, abducted thighs and the soles of feet flat on the foot of the bed (dorsal lithotomy)⁴. However, we should respect whatever position the mother may spontaneously adopt, and care must be taken to preserve her privacy and prevent discomfort or cold. A cushion or folded blanket can be placed under the buttocks of the mother for better position of the child's head and shoulders during delivery. The mother's vital constants should be monitored throughout the birth process.

The first task is to reassure the mother, trying to get her to breathe quietly during periods without contractions. If circumstances and time permit, we should ensure compliance with standard procedures of asepsis and antisepsis, use a disposable catheter for bladder emptying, and disinfect the vulvo-perineal area (avoiding iodine solutions due to the risk of fetal thyroid alteration)⁵. If time permits, peripheral intravenous canalization should be performed, but perineal shaving should not be a routine practice.

Then a sterile operational area must be crea-

Table 1. Material necessary for hurried delivery

- 4 Köcher or cord clamps.
- Sterile scissors.
- Topical antiseptic solution: povidone-iodine or chlorhexidine.
- Sterile gloves.
- Large and small sterile gauze.
- 4 sterile drapes.
- Pediatric CPR equipment.
- Pulse oximeter with pediatric adapter.
- Pediatric Sphygmomanometer.
- Oxygen.
- Material to channel a vein.
- Source of heat.

CPR: cardiopulmonary resuscitation.

ted using four sterile towels: one under the mother, one on her abdomen and one on each leg. The steps that follow include the expulsion of the head, the shoulders and body and finally the legs. The occipito-pubic position is the most common fetal position. To protect the perineum and prevent tearing we should maintain flexion of the fetal head by applying pressure on the area of the anterior fontanelle. The emergence of the fetal nasal bridge first allows the gradual emergence of the head. Pressure is applied to the fetal chin through the perineum with one hand on the perineal raphe (palm towards the mother's anus) and the other hand on the baby's head; this manoeuvre (the Ritgen manoeuvre) allows us to slowly extend the neck and extract the head⁶ (Figure 1).

Once the baby's head has emerged, the meconium should be cleaned away using gauze, and digital exploration performed to rule out the possibility of the cord encircling the neck. If this does exist and the cord is slack, the loop should be passed over the baby's head. If tight, the cord should be cut, between two clamps placed 1 cm apart.

Subsequently, the head spontaneously rotates towards one of the mother's thighs (occipito-lateral). The shoulders should be extracted progressively, first holding the baby's head to release the anterior shoulder. Gentle downward pressure is applied until the anterior shoulder emerges, then upward with one hand, while protect the perineum with the other hand until the posterior shoulder is extracted. The torso is then extracted pulling along the longitudinal axis of the pelvis. And finally the anterior hip is released below the symphysis, and after lifting the trunk the posterior hip and legs emerge⁶.

Newborn care

Newborn care includes maintaining body



Figure 1. Ritgen maneuver. When the nasal bridge of the baby has emerged, the head can be progressively extended. Pressure is performed on the fetal chin through the perineum with one hand on the perineal raphe (palm towards the anus of the mother) while the other hand is placed on the head; this allows gradual extension of the head.

using radiant heat (infrared lamp) or wrapping in thermal or hypothermal blankets after drying the baby with a soft dry towel, preheated to avoid neonatal hypothermia.

Then the newborn is placed supine in a neutral position, the mouth and nostrils are aspirated (<5 seconds), and tactile stimulation applied until the baby cries. We should then take the temperature and calculate the baby's APGAR test score (at one, 5 and 10 minutes) (Table 2), and we measure blood glucose⁷.

Oxygen administration should not be considered systematically. In a child with normal APGAR, this is not required and not recommended. If the newborn does not require special care, it should be placed on the mother's abdomen to establish natural physical contact between them ("kangaroo" method), covered with a warm, dry cloth. Breastfeeding should be initiated as soon as possible, unless contraindicated.

Cord and placenta care

Two minutes after the birth, 2 clamps are placed at least 10 cm along the cord (all deliveries should be subject to a cord pH test). Cut the cord between the two clamps (Figure 2). Disinfect the cord with 70% alcohol or chlorhexidine³. We then wait for the placenta to emerge in the next 5 to 30 minutes. We should not exert pressure on the suprapubic area. After reviewing and verifying its

Table 2. Apgar score at one minute and five minutes after birth

Signs	0	1	2
Colour	Pale blue	Body: Pink; limbs blue	Pink
Breathing	Absent	Shallow, irregular	Good, crying
Muscle tone	Flaccid	Slight flexing of limbs	Active movements
Reflexes:			
– Nasal probe	No response	Grimace	Cough / sneezing
– Sole tap	No response	Slight flexion	Vigorous limb movement, crying
Heart rate	Absent	< 100 bpm/min	> 100 bpm/min

Score: 10-6: good, 5-3: serious; 2-0: very serious.

integrity, the placenta is treated like any other biological product.

In the event of perineal tears, compressive bandages should be applied.

Early postpartum hemorrhage

After delivery, we should monitor the overall condition of the mother, vital constants, uterine contraction and blood loss. Postpartum vaginal bleeding is considered as more than 500 ml after vaginal delivery or bleeding that threatens to cause hemodynamic instability. The causes of early postpartum hemorrhage are grouped into four categories, which correspond to the four "Ts": Tone (uterine atony), tissue (retained products), trauma (genital tract) and thrombin (coagulation)⁸. Tone is the most frequent cause.

Hemodynamic compromise in the mother must always be assessed, using the scale reflected in Table 3. If there is hemodynamic compromise, the patient must be monitored and oxygen therapy administered; a bladder catheter is placed and a blood sample taken for a hemogram, coagulation and crossmatch tests, and fluid replacement administered at a rate of 3:1 (300 ml per 100 ml blood loss)⁸. Simultaneously the etiology of the bleeding should be investigated:

- If the placenta has not been removed, we should proceed to extract it.
- Uterine massage is performed, and if the uterine is soft then initiate perfusion with uterotonics (oxytocin 5 U slow intravenous bolus).

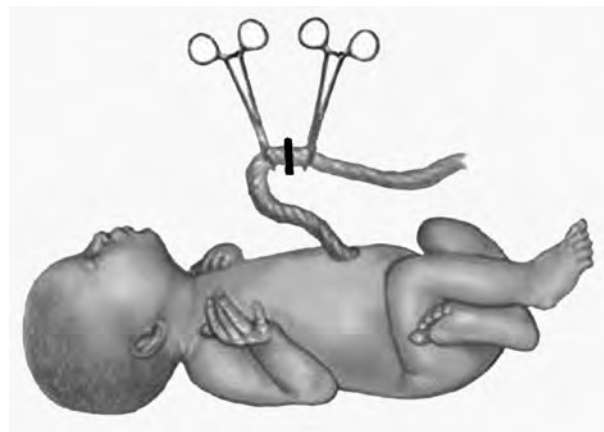


Figure 2. Section of the umbilical cord after clamping. Two minutes after the birth, 2 clamps are placed at least 10 cm along the cord (all deliveries should be subject to a cord pH test). Cut the cord between the two clamps.

- If uterine inversion is found, restoration is required, preferably in the operating room under general anesthesia.
- If the coagulation study shows alteration, specific treatment should be initiated.

The obstetrician on call should assess the perineum and the birth canal, suture if necessary, with local anesthesia or general if necessary.

Neonatal resuscitation

If the newborn at birth is breathing, with heart rate above 100 beats per minute but pre-

Table 3. Hemodynamic condition in early postpartum hemorrhage

	Inconsequential	Slight	Moderate	Severe
Blood loss	500-1.000 ml (10-15% of total)	1.000-1.500 ml (15-25% of total)	1.500-2.000 ml (25-35% of total)	2.000-3.000 ml (35-45% of total)
Fall	None	Slight	Marked	Very pronounced
Systolic BP		80-100 mmHg	70-80 mmHg	50-70 mmHg
Symptoms / Signs	Palpitations Dizziness Tachycardia	Weakness Sweating Tachycardia	Restlessness Shortness of breath Oliguria	Collapse Paleness Anuria

BP: Blood pressure.

sents central cyanosis, administer 100% oxygen.

If the infant is apneic or presents heart rate below 100 beats per minute, apply an air bag-mask with a frequency of 30-60 breaths per minute.

If the heart rate is less than 60 beats per minute, cardiac massage should be alternated with ventilation, with a compression / ventilation rate of 3:1, attempting to achieve around 120 actions per minute (90 compressions and 30 breaths).

Massage should be performed keeping both thumbs next to each other at the lower third of the sternum, with the rest of the fingers around the torso and holding the back. The lower third of the sternum should be depressed a third of the anteroposterior diameter of the chest. In these cases the venous route is easier than the cord for an intravenous dose of adrenaline:

If heart rate <60 beats per minute, the dose is 10 to 30 mg / kg (intratracheal dose > 100 mg / kg) and bicarbonate dose is 1-2 mmol / kg.

If after 10 minutes of appropriate uninterrupted resuscitation there are no signs of life in the newborn, the manoeuvres may justifiably be stopped⁹.

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Asistencia urgente al parto precipitado

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Los partos precipitados ocurren en un 10% de todos los partos, y en un 3% de los partos a término. Las causas más frecuentes son la multiparidad o la prematuridad (gestación de menos de 37 semanas). Las posibles complicaciones de este tipo de parto son la hipoxia, el traumatismo fetal, las lesiones del canal del parto, la atonía uterina secundaria, y excepcionalmente la ruptura uterina y la embolia de líquido amniótico. Por lo tanto, el personal de urgencias debe estar preparado y conocer la asistencia básica en caso de parto precipitado. En esta revisión se presenta una guía resumen de la secuencia básica de actuación en un parto precipitado. [Emergencias 2010;22:140-143]

Palabras clave: Parto. Emergencias.