

Leaving well alone: A natural approach to the third stage of labour

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The medical approach to pregnancy and birth has become so ingrained in our culture, that we have forgotten the way of birth of our ancestors: a way that has ensured our survival as a species for millennia. In the rush to supposedly protect mothers and babies from misfortune and death, modern western obstetrics has neglected to pay its dues to the Goddess, to Mother Nature, whose complex and elegant systems of birth are interfered with on every level by this new approach, even as we admit our inability to understand or control these elemental forces.

Medical interference in pregnancy, labour and birth is well documented, and the negative sequelae are well researched. However, medical management of the third stage of labour- the time between the baby's birth, and the emergence of the placenta-, to my mind, more insidious. At the time when Mother Nature prescribes awe and ecstasy, we have injections, examinations, and clamping and pulling on the cord. Instead of body heat and skin-to-skin contact, we have separation and wrapping. Where time should stand still for those eternal moments of first contact, as mother and baby fall deeply in love, we have haste to deliver the placenta and clean up for the next 'case'.

This 'management' of the third stage, which has been taken even further in the last ten years, with the popularity of "active management of the third stage" (see below), has its own risks for mother and baby. While much of the activity is designed to reduce the risk of maternal bleeding, or postpartum haemorrhage (PPH), which is most certainly a serious event, it seems that, as with the active management of labour, the medical approach to labour and birth actually leads to many of the problems that active management is designed to address.

Active management also creates specific and potentially life-threatening problems for mother and baby. In particular, use of active management leads to a newborn baby being deprived of up to half of his or her expected blood volume. This extra blood, which is intended to perfuse the newly functioning lungs and other vital organs, is discarded along with the

placenta when active management is used, with possible sequelae such as breathing difficulties and anaemia, especially in vulnerable babies.

Drugs used in active management have documented risks for the mother, including death, and we do not know the long-term effects of these drugs, which are given at a critical stage of brain development, for the baby.

Hormones in the third stage

As a mammalian species- that is, we have mammary glands that produce milk for our young- we share almost all features of labour and birth with our fellow mammals. We have in common the complex orchestration of labour hormones, produced deep within our “mammalian”, or middle brain, to aid us and ultimately ensure the survival of our offspring.

We are helped in birth by three major mammalian hormone systems, all of which play important roles in the third stage as well. The hormone oxytocin causes the uterine contractions that signal labour, as well as helping us to enact our instinctive mothering behaviours. Endorphins, the body’s natural opiates, produce an altered state of consciousness and aid us in transmuting pain: and the fight or flight hormones adrenaline and noradrenaline (epinephrine and norepinephrine- also known as catecholamines or CAs) give us the burst of energy that we need to push our babies out in second stage.

During the third stage of labour, strong uterine contractions continue at regular intervals, under the continuing influence of oxytocin. The uterine muscle fibres shorten, or retract, with each contraction, leading to a gradual decrease in the size of the uterus, which helps to “shear” the placenta away from its attachment site. Third stage is complete when the placenta is delivered.

For the new mother, the third stage is a time of reaping the rewards of her labour. Mother Nature provides peak levels of oxytocin, the hormone of love, and endorphins, hormones of pleasure for both mother and baby. Skin to skin contact and the baby’s first attempts to breast-feed further augment maternal oxytocin levels, strengthening the uterine contractions that will help the placenta to separate, and the uterus to contract down. In this way, oxytocin acts to prevent haemorrhage, as well as to establish, in concert with the other hormones, the close bond that will ensure a mother’s care and protection, and thus her baby’s survival.

At this time, the high adrenaline levels of second stage, which have kept mother and baby wide-eyed and alert at first contact, will be falling, and a very warm atmosphere is necessary to counteract the cold, shivering feelings that a woman has as her adrenaline levels drop. If the environment is not well heated, and/or the mother is worried or distracted, continuing

high levels of adrenaline will counteract oxytocin's beneficial effects on her uterus, therefore, according to Odent (1992), increasing the risk of haemorrhage.

For the baby as well, the reduction in fight or flight hormones, which have also peaked at birth, is critical. If, because of extended separation, these hormones are not soothed by contact with the mother, the baby can go into psychological shock, which, according to author Joseph Chilton Pearce, will prevent the activation of specific brain functions that is nature's blueprint for this time. Pearce believes that the separation of mother and baby after birth is "the most devastating event of life, which leaves us emotionally and psychologically crippled" (Pearce 1992)

One might wonder whether the modern epidemic of "stress" - the term was invented by researchers in the early 20th century- and stress-related illness in our culture is a further outcome of current third-stage practices. It is scientifically plausible that our entire Hypothalamic-Pituitary-Adrenal (HPA) axis, which mediates long-term stress responses and immune function, as well as short-term fight-or-flight reaction, is permanently mis-set by the continuing high stress hormone levels that ensue when newborn babies are routinely separated from their mothers.

Michel Odent, in his review of research on the "primal period" (the time between conception and the first birthday), concludes that interference or dysfunction at this time affects the development of our "capacity to love", which is particularly vulnerable around the time of birth, being connected hormonally to the oxytocin system. (Odent, 1998) Research by Jacobsen (1990, 1997) and Raine (1994), among others, suggests that contemporary tragedies such as suicide, drug addiction and violent criminality may be linked to problems in the perinatal period such as exposure to drugs, birth complications and separation or rejection from the mother.

A crucial role for birth attendants in these times is to ensure that a woman's mammalian instincts are protected and valued during pregnancy, birth and afterwards. Ensuring unhurried and uninterrupted contact between mother and baby after birth, adjusting the temperature to accommodate a shivering mother, and to allow skin-to-skin contact and breastfeeding, and not removing the baby for any reason- these are practices that are sensible, intuitive and safe, and help to synchronise our hormonal systems with our genetic blueprint, giving maximum success and pleasure for both partners, in the critical function of child-rearing.

The baby, the cord, and active management

Adaptation to life outside the womb is the major physiological task for the baby in third stage. In utero, the wondrous placenta fulfils the functions of lungs, kidney, gut and liver for our babies. Blood flow to these organs is

minimal until the baby takes a first breath, at which time huge changes begin in the organisation of the circulatory system

Within the baby's body, blood becomes, over several minutes, diverted away from the umbilical cord and placenta and, as the lungs fill with air, blood is sucked into the pulmonary (lung) circulation. Mother Nature ensures a reservoir of blood in the cord and placenta that provides the additional blood necessary for these newly perfused pulmonary and organ systems.

The transfer of this reservoir of blood from the placenta to the baby happens in a step-wise progression, with blood entering the baby with each third-stage contraction, and some blood returning to the placenta between contractions. Crying slows the intake of blood, which is also controlled by constriction of the vessels within the cord (Gunther 1957) – both of which imply that the baby may be able to regulate the transfusion according to individual need.

Gravity will affect the transfer of blood, with optimal transfer occurring when the baby remains at or below the level of the uterus until the cessation of cord pulsation signals that the transfer is complete. This process of “physiological clamping” typically takes 3 minutes, but may be longer, or can be complete in only one minute. (Linderkamp 1982)

This elegant and time-tested system, which ensures that an optimum, but not a standard, amount of blood is transferred, is rendered inoperable by the current practice of early clamping of the cord- usually within 30 seconds of birth.

Early clamping has been widely adopted in Western obstetrics as part of the package known as active management of the third stage. This comprises the use of an oxytocic agent- a drug that, like oxytocin, causes the uterus to contract strongly- given usually by injection into the mothers thigh as the baby is born, as well as early cord clamping, and ‘controlled cord traction’- that is, pulling on the cord to deliver the placenta as quickly as possible.

Haste becomes necessary, because the oxytocic injection will, within a few minutes, cause very strong uterine contractions that can trap an undelivered placenta, making an operation and ‘manual removal’ necessary. Furthermore, if the cord is not clamped before the oxytocic effect commences, the baby is at risk of having too much blood suddenly pumped from the placenta by the over-zealous contractions.

While the aim of active management is to reduce the risk of haemorrhage for the mother, “its widespread acceptance was not preceded by studies

evaluating the effects of depriving neonates [newborn babies] of a significant volume of blood” (Piscane 1996)

It is estimated that early clamping deprives the baby of 54 to 160 ml of blood, (Usher 1963) which represents up to half of a baby’s total blood volume at birth. “Clamping the cord before the infant’s first breath results in blood being sacrificed from other organs to establish pulmonary perfusion. [Blood supply to the lungs]. Fatality may result if the child is already hypovolemic [low in blood volume].” (Morley 1997)

Where the baby is lifted above the uterus before clamping- for example during caesarean surgery- blood will drain back to the placenta by gravity, making these babies especially liable to receive less than their expected blood volume. The consequence of this may be an increased risk of respiratory (breathing) distress- several studies have shown this condition, which is common in caesarean-born babies, to be eliminated when a full placental transfusion was allowed. (Peltonen 1981, Landau 1953).

The baby whose cord is clamped early also loses the iron contained within that blood- early clamping has been linked with an extra risk of anaemia in infancy. (Grajeda 1997, Michaelson 1995).

**These sequelae of early clamping were recognised as far back as 1801, when Erasmus Darwin wrote
“Another thing very injurious to the child is the tying and cutting of the navel string too soon; which should always be left till the child has not only repeatedly breathed but till all pulsation in the cord ceases. As otherwise the child is much weaker than it ought to be, a part of the blood being left in the placenta which ought to have been in the child” (Darwin 1801).**

In one study, premature babies experiencing delayed cord clamping-, the delay was only 30 seconds- showed a reduced need for transfusion, less severe breathing problems, better oxygen levels, and indications of probable improved long-term outcomes, compared to those whose cords were clamped immediately. (Kinmond 1993).

Some studies have shown an increased risk of polycythemia (more red blood cells in the blood) and jaundice when the cord is clamped later. Polycythemia may be beneficial, in that more red cells means more oxygen being delivered to the tissues. The risk that polycythemia will cause the blood to become too thick (hyperviscosity syndrome), which is often used as an argument against delayed cord clamping, seems to be negligible in healthy babies. (Morley 1998)

Jaundice is almost certain when a baby gets his or her full quota of blood, and is caused by the breakdown of the normal excess of blood to produce

bilirubin, the pigment that causes the yellow appearance of a jaundiced baby. There is, however, no evidence of adverse effects from this. (Morley 1998). One author has proposed that jaundice, which is present in almost all human infants to some extent, and which is often prolonged by breastfeeding, may actually be beneficial because of the anti-oxidant properties of bilirubin. (Gartner 1998)

Early cord clamping carries the further disadvantage of depriving the baby of the oxygen-rich placental blood that Mother Nature provides to tide the baby over until breathing is well established. In situations of extreme distress- for example, if the baby takes several minutes to breathe-this reservoir of oxygenated blood can be life saving, but, ironically, standard practice is to cut the cord immediately if resuscitation is needed.

The placental circulation acts, when the cord is intact, as a conduit for any drug given to the mother, whether during pregnancy, labour or third stage. Garrison (1999) reports that Narcan, which is sometimes needed by the baby to counteract the sedating effect of pain-relieving drugs such as pethidine (Demerol), given to the mother in labour, can be effectively administered via the mother's veins in third stage, waking up the newborn baby in a matter of seconds.

The recent discovery of the amazing properties of cord blood, in particular the stem cells contained within it, heightens, for me, the need to ensure that a newborn baby gets its full quota. These cells are unique to this stage of development, and will migrate to the baby's bone marrow soon after birth, transforming themselves into various types of blood-making cells,

Cord blood harvesting, which is currently being promoted to fill Cord Blood Banks for future treatment of children with leukaemia, involves immediate clamping, and up to 100 ml of this extraordinary blood can be taken from the baby to whom it belongs. Perhaps this is justifiable where active management is practiced, and the blood would be otherwise discarded, but, unfortunately, cord blood donation is incompatible with a physiological (natural) third stage.

Active management and the mother

Active management (oxytocic, early clamping and controlled cord traction) represents a further development in third stage interference that began in the mid-seventeenth century, when male attendants began confining women to bed, and cord clamping was introduced to spare the bed linen.

Mauriceau first recommended pulling on the cord in 1673, who feared that the uterus might close before the placenta was spontaneously delivered (Inch 1984). In fact, the recumbent (lying) postures, increasingly adopted

under doctor's care meant that spontaneous delivery of the placenta was less likely: the upright postures that women and midwives have traditionally used encourage the placenta to fall out with the help of gravity.

The first oxytocic to be used medically was ergot, derived from a fungal infection of rye. Ergot was known to be used by 17th and 18th century European midwives. Its use was limited, however, by its toxicity. It was refined and revived as ergometrine in the 1930's, and by the late 1940's, some doctors were using it as a preventative, as well as therapeutically, for post partum haemorrhage. (Inch 1984) Potential side effects from ergot derivatives include a rise in blood pressure, nausea, vomiting, headache, palpitations, cerebral haemorrhage, cardiac arrest, convulsion and even death.

Synthetic oxytocin, which mimics the effects of natural oxytocin on the uterus, was first marketed in the 1950's, and has largely replaced ergometrine, although a combination drug, called syntometrine, is still used, especially for severe haemorrhage. Syntocinon causes an increase in the strength of contractions, whereas ergometrine causes a large, 'tonic' contraction, which also increases the chance of trapping the placenta. Ergometrine also interferes with the process of placental separation, increasing the chance of partial separation. (Sorbe 1978)

Recently active management has been proclaimed "the routine management of choice for women expecting a single baby by vaginal delivery in a maternity hospital" (Prendville 1999), mostly because of the results of the recent Hinchingsbrooke trial, comparing active versus "expectant" (physiological) management.

In this trial (Rogers 1998), which involved only women at low risk of bleeding, active management was associated with a post partum haemorrhage (blood loss greater than 500ml) rate of 6.8%, compared with 16.5% for expectant (non-active) management. Rates of severe PPH (loss > 1000ml) were low in both groups- 1.7% active and 2.6% expectant.

The authors note further that, from these figures ten women would need to receive active management to prevent one PPH. They add, "Some women ... may rate a small personal risk of PPH of little importance compared with intervention in an otherwise straightforward labour, whereas others may wish to take all measures to reduce the risk of PPH."

Reading this paper, one must wonder how it is that almost 1 in 6 women bled after "physiological" management, and whether one or more components of western obstetric practices might not be actually increasing the rate of haemorrhage.

Botha (1968) attended over 26 000 Bantu women over 10 years, and reports that “a retained placenta was seldom seen...blood transfusion for postpartum haemorrhage was never necessary.” Bantu women deliver both baby and placenta while squatting, and the cord is not attended to until the placenta delivers itself by gravity.

There is some evidence that the practice of clamping the cord, which is not practiced by indigenous cultures, contributes to both PPH and retained placenta by trapping extra blood (around 100ml, as described above) within the placenta. This increases placental bulk, which the uterus cannot contract efficiently against, and which is more difficult to expel. (Walsh 1968)

Other western practices that may contribute to PPH include the use of oxytocin for induction and augmentation (speeding up labour) (Brinsden 1978, McKenzie 1979), episiotomy or perineal trauma, forceps delivery, caesarean and previous caesarean (because of placental problems- see Hemminki 1996).

Gilbert (1987) notes that PPH rates in her UK hospital more than doubled from 5% in 1969-70 to 11% in 1983-5, and concludes, “The changes in labour ward practice over the last 20 years have resulted in the re-emergence of PPH as a significant problem.” In particular, she links an increased risk of bleeding with induction using oxytocin, forceps delivery, long first and second stages (but not prolonged pushing) and the use of epidurals, which increase the chance of forceps and of a long second stage.

As noted, western practices do not facilitate the production of a mother’s own oxytocin, neither is attention paid to reducing adrenaline levels in the minutes after birth, both of which are physiologically likely to improve uterine contractions and therefore reduce haemorrhage.

Clamping the cord, especially at an early stage, may also cause the extra blood trapped within the placenta to be forced back through the placenta into the mothers blood supply with the third stage contractions. (Doolittle 1966, Lapido 1971) This “feto-maternal transfusion” increases the chance of future blood group incompatibility problems, which occur when the current baby’s blood enters the mother’s blood stream, causing an immune reaction which can be reactivated and destroy the baby’s blood cells in a subsequent pregnancy, causing anaemia or even death.

The use of oxytocin, which strengthens contractions, either during labour, or in third stage, has also been linked to an increased risk of feto-maternal haemorrhage and blood group incompatibility problems. (Beer 1969, Weinstein 1971)

The World Health Organisation, in its 1996 publication *Care in Normal Birth: a practical guide*, argue that “In a healthy population (as is the case in most developed countries), postpartum blood loss up to 1000 ml may be considered as physiological and does not necessitate treatment other than oxytocics...” In relation to routine oxytocics and controlled cord traction, WHO cautions that “Recommendation of such a policy would imply that the benefits of such management would offset and even exceed the risks, including potentially rare but serious risks that might become manifest in the future.”.

Choosing a natural third stage

Choosing to forego preventative oxytocics, to clamp late (if at all), and to deliver the placenta by our own effort all require forethought, commitment, and that we choose birth attendants that are comfortable and experienced with these choices.

A natural third stage is more than this; however-we must ensure respect for the emotional and hormonal processes of both mother and baby, remembering how unique this time is. Michel Odent stresses the importance of not interrupting, even with words, and believes that ideally the new mother feels unobserved and uninhibited in the first encounter with her baby. (Odent 1992) This level of non-interference is uncommon, even in home and birth centre settings.

Lotus birth, the subject of this book, gives us a further chance to “slow the fire drill” after birth, as midwife Gloria Lemay puts it, and allows our babies the full metaphysical, as well as physical, benefit of prolonged contact with the placenta. Lotus birth, like a good midwife, also secludes mother and baby in the early hours and days, ensuring rest and keeping visitors to a minimum.

Third stage represents a first meeting, creating a powerful imprint upon the relationship between mother and baby. When both are undrugged and quiet, fully present and alert, new potentials are invoked, and we discover more about ourselves, and the sacred origins of our capacity to love.

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