

Birth without active pushing

A physiological second stage of labour

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Since long before recorded history, female mammals have given birth to live offspring. All those species which have been successful have followed the same, involuntary process to survive. Breathing, digestion, elimination, all go on without any need for conscious help – unless the process is disturbed.

Pregnancy and birth too belong to those bodily processes that are controlled by the autonomic system. Each month, the human female's uterus expels its contents unaided. Once, it was perfectly capable of expelling a full-term fetus without help. What has happened to change this? Has the uterus really lost its powers, or are we failing to understand the process properly? As we have gained more and more knowledge of the details, have we lost the main map?

This article aims to look at the broad canvas of birth, and to see if any helpful clues can be found in the almost-lost 'women's wisdom' relating to birth. Before I begin, I should tell you where I am, in today's jargon, 'coming from'.

The loss of normality

I began in the birth world at the age of seven, as a farm child in New Zealand. At 17, I joined the staff of a small country hospital during the baby boom. Later, I worked in several private maternity hospitals, until having my own four children. Thus, from 1951 to 1970, I saw hundreds of babies born. I had observed that mothers having a normal birth always said, breathlessly: 'It's coming' – never: 'I want to push'. I never once saw a mother deliberately push her baby into the world – their uteri were quite capable of managing by themselves.

Was it because they had to suffer more? No, the amount of sedative drugs used was substantial. Most mothers were given either trilene or, if a doctor was present, chloroform, at the end of second stage, so they really couldn't have pushed deliberately if they had wanted to!

When I returned to work in 1977, I was amazed to find almost all women vigorously pushing their offspring out. All that effort, all that instruction in how to push! So many episiotomies, so many haemorrhoids, so many forceps births. What on earth was going on, what had changed since the 1960s? The big difference was that previously women had given birth in the left lateral position. This position allows the pelvis to open as it should, and neither helps nor hinders the baby's descent. Now they were all reclining on their backs and trying to force these babies down and round the corner. How had this happened when, as far back as 1932, Corkill (a New Zealand obstetrician) was stating as given, in a midwifery textbook, that there are 16cms of space at the outlet of the pelvis at the end of second stage¹ (see Table 4.8.1). Where had that extra space come from? More recently, Michel Odent has drawn our attention to the 'fetal ejection reflex'² and Sheila Kitzinger has reported the Jamaican midwives' advice that 'The baby will not be born until the mother opens her back'.³ If birth is to regain its normality, we need to understand the anatomy and physiology behind these observations.

Another major difference between the 1960s and the 1970s was that, in the 1960s, at least 70% of babies presented in early labour as vertex LOA and a further 15% as vertex ROA. There's the 85% normal we should be able to achieve.

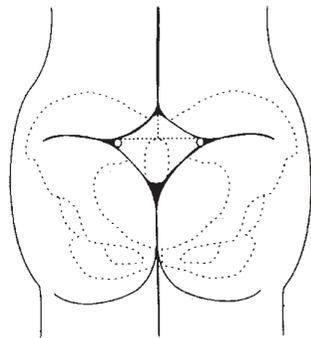
Can we regain such results and still have reduced mortality and morbidity? Of course we can, once we study the broad canvas more carefully. It is quite possible to achieve at least 85% normal births in an area, even when mothers are so-called 'high risk' if antenatal education focuses on teaching expectant parents what really happens when a baby makes its amazing journey. But first midwives need to gain more understanding themselves and create the environment at birth where these natural processes can be encouraged, rather than prevented.

The first stage: The process should take place this way:

- Labour begins with the baby vertex LOA
- Contractions begin short and widely spaced
- Length and intensity increase steadily
- The baby moves down and tucks its face under the top of the sacral curve
- The shoulders move from the oblique to the transverse
- The cervix reaches full dilatation and the membranes rupture.

Now there is a pause, sometimes only seconds, but usually several minutes. During this time, the baby finishes its moves: the head becomes directly anterior/posterior and the shoulders enter the pelvic brim in the transverse. The uterus adapts to the partial loss of contents (the liquor and the baby's head) and prepares to change its action. The baby begins to lift its head.

The second stage: To understand real, physiological second stage labour, we must learn about the 'rhombus of Michaelis'. This is the kite-shaped area of the lower spine that includes the sacrum and three lower lumbar vertebrae. We may learn that it has limited flexibility during pregnancy, but nothing about its role in labour.



As second stage labour begins, the rhombus of Michaelis moves (this is 'the opening of the back' which the Jamaican midwives spoke to Sheila Kitzinger about). Midwives working with mothers who give birth on all-fours or kneeling without wearing clothes will have seen this as a large 'lump' that suddenly appears

on the mother's back. It has been suggested that it is the baby's head pushing the sacral prominence outward, but this is not so. It is the rhombus of Michaelis moving back – up to 2cm. At the same time (but not visible to the observer) the wings of the ilia fan outwards, thus increasing the internal dimensions (see Table 4.8.1).

This movement can only occur if the mother is in a position that puts her weight in front of her ischial tuberosities, with the angle between her spine and her thighs at least 120° (i.e. the distance between her hips and her head is less than the distance between her knees and her head).

What causes the rhombus to move? This explanation is still at the hypothesis stage, but it appears to be something like the following:

The back of the baby's head contacts a nerve plexus at the front of the pelvis, where the bladder and urethra join (this is known in the feminist literature as the G-spot). This triggers the backward movement of the rhombus of

Table 4.8.1 Pelvic measurements

| Normal | | | |
|----------------------------------|------------|---------|--|
| | Transverse | Oblique | Anteroposterior |
| Brim | 13cm | 12cm | 11cm |
| Cavity | 12cm | 12cm | 12cm |
| Outlet | 11cm | 12cm | 13cm |
| After rhombus of Michaelis moves | | | |
| | Transverse | Oblique | Anteroposterior |
| Brim | 15cm | 14cm | 13cm |
| Cavity | 14cm | 14cm | 14cm |
| Outlet | 13cm | 14cm | 16cm (includes 1cm for coccyx straightening) |

Michaelis and the fanning open of the wings of the ilia, which makes more space in the pelvic cavity. Then the following actions occur (although these are written as a sequence, they tend to happen simultaneously):

- The mother reaches upward to find a firm object to grasp
- She allows her body to sag forward and knees to roll out
- Her back arches and she begins to wriggle her lower body
- The uterus contracts and forces the baby's body down.

The baby's head (facing directly backwards) passes the spines and is born, followed rapidly by its posterior shoulder. (The anterior shoulder is against the symphysis pubis, leaving plenty of space for the posterior shoulder to be born.)

The similarities between the mother's actions at the end of the second stage labour and the involuntary actions which occur during orgasm (both female and male) are striking.

Compare and contrast

How does this contrast with what we have been taught is normal second stage labour? Very few mothers, even those who remain mobile, seem to give birth unaided. The idea that all babies need to be pushed out is firmly embedded, yet cannot be found in older textbooks. Until the 1960s, women giving birth at home, and in many hospitals, were delivered in the left lateral position. Why was it changed? One midwife can manage perfectly well, as the mother will move her own upper leg if she needs to.

Once mothers were in a reclining position, their babies no longer found the passage from womb to world straightforward, and they ended up far too deep into the back of the pelvic floor. This brought the baby's head into contact with the nerves of defecation, rather than birth.

Then came the need to push, and the idea of ‘protecting’ the mother’s back. Someone decided that a rounded back would be protective – without realising that bringing the knees up brought the spine and the symphysis pubis so close that, unless the baby’s shoulders were already in the transverse, they would be stuck at the brim. Then came the ridiculously long second stage labours. If a baby is lined up properly, and his mother keeps her knees down, half an hour is normally plenty for a first baby and ten minutes for a subsequent one.

When things don’t go smoothly

Failure to progress in the second stage of labour is so common, but is usually so simple to cure.

If the baby in LOA is not descending in the second stage of labour, then he must have failed to rotate his shoulders. His anterior (right) shoulder will still be sitting on the brim, so his head can’t move down. Remember, the shoulders rotate into the anteroposterior position once they are inside the cavity. Only a very small baby can pass through the pelvis without his head turning 90°.

In most cases, all that is needed is to ask the mother to move to a position where her knees are further away from her head than her hips. Left or right lateral, kneeling, in a birth pool, a supported squat with the thighs at least 45cm from the ground – all of these will work, as long as she gets her knees well away from her body.

Any position that brings the knees towards the abdomen reduces the space in which the baby can move. It will also increase the chance of the baby being pushed into the back of the pelvis and into the back of the pelvic floor, instead of pressing against the symphysis. From here a major pushing effort is needed to get the baby out, and the likelihood of tearing the perineum or needing an episiotomy rises.

A few babies manage to get a hand or arm into the pelvis with their head, and these may appear to need pushing. If we are listening carefully, we will have heard the mother complaining about discomfort or pain in odd places. A hand by an ear causes pain on the side of the

pelvis; an asynclitic head causes pain deep on the left side of the pelvis behind the spines; an elbow under the chin causes pain in the sacrum during contractions but not between. Getting the mother on her feet and asking her either to visit the toilet (have a wheelchair right behind her) or to lean on the bed and wriggle her hips until the pain goes can be spectacular. If there has been a transverse arrest, once the baby becomes unstuck it will emerge very fast.

Keeping the angle between the spine and thighs at least 120° will also prevent or cure most cases of shoulder dystocia. This is because shoulder dystocia usually occurs when the baby has failed to rotate its shoulders into the transverse at the brim, or into the anteroposterior at the spines. Give it room to move and it will.

The use of epidural anaesthesia during labour, even the walking kind, must have had an effect on the normal movement of the rhombus of Michaelis. If the birth nerves are not stimulated, how can the reflex occur?

Regaining normality

Looking at the normal birth process, shorn of preconceived ideas, would be a useful project for any midwife. Birth is not just a mechanical process, but if the parts are unable to interact as they are designed to do, then the stimulation of hormones and tissues will also fail and the Caesarean section rate will spiral even further, making midwives, who should be protecting the normal, into intensive care nurses.

None of this explains the problems that arise when the baby is right occipito-posterior. These babies may get stuck during first stage and will almost always have problems during second stage. A second article (reprinted as chapter 4.10 in this book) will describe the moves open to OP babies as they try to use all the available space in the maternal pelvis. They have a number of choices, but unless someone is able to help the mothers respond effectively, many will fail, and are destined to become subject to the well-known ‘cascade of intervention’.

REFERENCES

1 Corkill TF. Lectures on midwifery and infant care. New Zealand: Whitcombe-Tombs; 1932.

2 Odent M. The fetus ejection reflex. *Birth* 1987; 14(2):104–5.

3 Kitzinger S. *Ourselves as mothers*. London: Bantam; 1993.