

Evolution of Child Birth

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Abstract

Before the 1920's, birth took place at home and was attended by doctors or midwives. In the 20's, women flocked to hospitals for the 'new' modern methods of 'painless' childbirth by sedating mother. Not all doctors saw comatose childbirth as a positive step for Mom and Baby. Dr. Grantley Dick-Read of England saw the beauty in participatory childbirth. He noticed that women who had someone with them to explain events had significantly less pain. In the 1930's he wrote "Birth Without Fear". In the late 40's, the Maternity Center of New York sponsored a grant to study the effect of his methods and to allow babies to 'room in'. Fernande Lamaze, a French obstetrician, studied Russian techniques of conditioned response to reduce childbirth pain. The organization of the LaLeche League gave us the movement to promote breastfeeding. After that comes the concept of PREPARED CHILD BIRTH which gives Mom choices as to how to have her baby and along with her partner allows her to make these choices based on information not fear or ignorance. In the 60's, Dr. Robert Bradley introduced the radical concept of fathers in the delivery room. Michael Odent brought the concept of water birth.

Key words: Labor; Home deliveries; Hospital deliveries; Water birth.

Introduction

In the developing world, even today, perhaps delivery is the commonest event where life and death stand side by side for both, the expectant mother and her forthcoming newborn. India alone accounts for nearly 20% of the global burden of both maternal and child deaths against about 16% of its share in world population[1]. Institutional deliveries range from 11% to 95% in different states of India with an average of 41% [2].

There are no descriptions of childbirth in the Bible. But we know what happened in surrounding countries and that can be a guide. In the pre antibiotic era they used brightly

painted birthing bricks to stand or kneel on over a scooped out hole, or they sat on a birthstool/chair.

The woman giving birth was surrounded by women she knew and trusted - her relatives and friends. Major advances in asepsis & labor began with the introduction of hand-washing by Semmelweis in 1847 at the Vienna Maternity Hospital. Ignaz Philipp Semmelweis (July 1, 1818 - August 13, 1865) (born Ignác Fülöp Semmelweis)[21] was a Hungarian physician now known as an early pioneer of antiseptic procedures & described as the "savior of mothers"[22]. The First Clinic at the Vienna Maternity Hospital were attended by medical students who moved straight from the necropsy room to the delivery

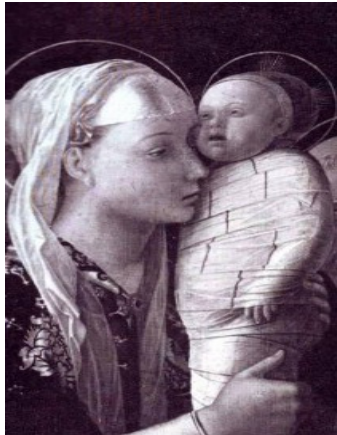
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Woman giving birth on a birthing chair .



Baby was wrapped in coarsely woven linen strips, swaddling bands to promote strong, straight bones as the baby grew.



An Egyptian birthing brick; the original painted image shows the goddess Hathor presenting a child to its mother



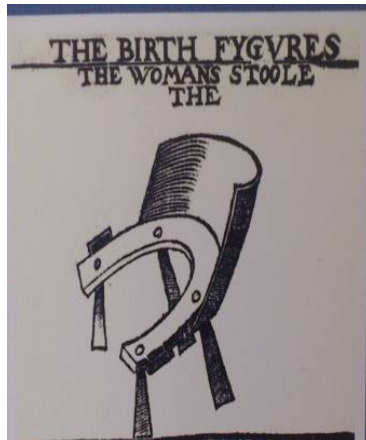
suite. The Second Clinic were attended by midwives and midwifery students who had no contact with the necropsy room. The incidence of maternal death was as high as 18% in the first department, with puerperal fever the main cause, but only 2% in the second. Semmelweis observed that a colleague, Jakob Kolletschka, died from an illness similar to puerperal fever after being accidentally cut during a necropsy. He concluded that the infecting particles responsible for puerperal fever came from cadavers and were transmitted by hand to women attended by medical students in the first department. He therefore instituted hand disinfection with chlorinated lime (modern calcium hypochlorite, the compound used in today's common household chlorine bleach solution) for those leaving the necropsy room, after which maternal morbidity in the first department fell to the levels achieved by the second department. Later Lister's introduction of antiseptics with carbolic spray in the 1870s, based on the germ theory of Pasteur, was an important step forward in the

Model of pelvis used in the beginning of the 19th century to teach technical procedures for a successful childbirth ⁴

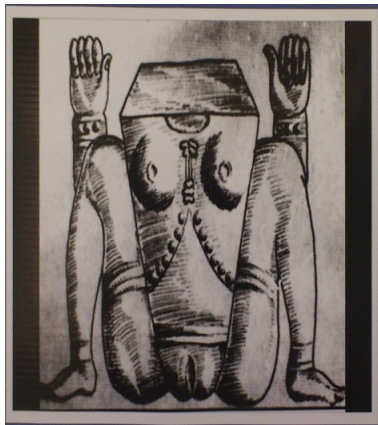


prevention and limitation of infection a major cause of maternal mortality[23].

Birthing chair by Thomas Raynalde



Sculpture of goddess Lajja Gouri from caves of North Karnataka



Ancient Indian art Sculpture from Indian cave



Birth positions

Standing or walking, Rocking, Squatting, Birthing balls, Sitting, Kneeling over a chair, Hands and knees, Side-lying .

We find attitudes and beliefs about obstetrics more familiar to the modern world.(19). Soranus (physician) who made a significant contribution to labor begins his discussion of childbirth with a description of the good midwife.

Midwives

Their duties were not as clear-cut as those of a modern midwife. They were expected to

- provide comfort, pain relief and encouragement to the woman giving birth
- perform rituals and prayers that would protect the woman and her baby, and keep harmful forces away
- use her expertise to birth the baby and deliver the afterbirth
- deal with problems or complications during the birth

supervise aftercare for mother and baby

Soranus's references to other medical writings also indicate that obstetrical practice was not limited to midwives; a male physician might attend particularly difficult births. The equipment used was midwife's chair. In the seat of the chair was a crescent-shaped hole through which the baby would be delivered. Midwife used to ease the labor pains with gentle massage, with a cloth soaked in warm olive oil laid over the abdomen and genital area, and with the equivalent of hot-water bottles- bladders filled with warm oil- placed against the woman's sides. For the actual delivery, the midwife needs three assistants to stand on both sides of the chair and at the back. There was no concept of episiotomy.

At the onset of the Industrial Revolution in the 19th century, giving birth at home became more difficult due to congested living spaces and dirty living conditions. This drove urban and lower class women to newly available hospitals, while wealthy and middle-class

women continued to labor at home[9]. The ability to labor without pain was part of the early feminist movement¹⁰. With this change from primarily homebirth to primarily hospital birth came changes in the care women received during labor: although no longer the case, in the 1940s it was common for women to be routinely sedated and for babies to be

delivered from their unconscious mothers with forceps with episiotomy (termed by Dr. Robert A. Bradley as “knock-em-out, drag-em-out obstetrics”). Along with shaving of the mother’s pubic region; mandatory intravenous drips; enemas; hand strapping of the laboring women; and the 12 hour monitoring of newborns in a nursery away from the mother.

Ancient Indian birthing position along with midwife .



Traditional vertical squatting parturition posture on birth chair cum table .



Hospital birth

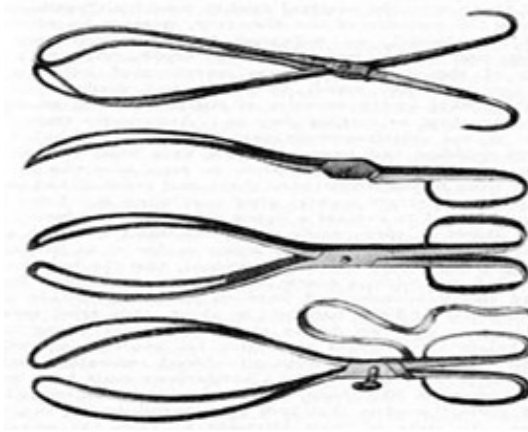
Advantages: safest childbirth environment for high risk pregnancies, emergency cesarean section facility, pediatricians and newborn medical technology is available, as also anesthesiologists provide pain relief, from epidurals to narcotics.

Rate of instrumental deliveries like forceps, ventouse increased. The introduction of obstetric forceps was of great interest to man-midwives who were distressed by the loss of live fetuses in obstructed labours. The obstetric forceps, allowing during birth, the extraction of a *living* child, was invented by the eldest son of the Chamberlen family of surgeons named Pierre (Peter). Four generations of the Chamberlen family are credited with the development of obstetric forceps, which they maintained as a secret until 1730.11(Q). In fact, the instrument was kept secret for 150 years by the Chamberlen family, although there is evidence for its presence as far back as 1634. The Chamberlen family’s forceps were based on the idea of separating the two branches of “sugar clamp”. In the interest of secrecy, the forceps were carried into the birthing room in a lined box and would only be used once everyone was out of the room and the mother blindfolded²⁰. Hughes Chamberlen, Grand nephew of Peter the eldest, tried to sell the instrument in Paris in 1670, but the demonstration he did in front of François Mauriceau, responsible for Paris Hotel-Dieu maternity, was a resounding failure which resulted in the death of mother and child. The secret may have been sold by Hughes Chamberlen to Dutch obstetricians at the start of the 18th century in Amsterdam. Earliest mention of instrumental delivery in

Vedic era - “Ankush”. Albucasis described forceps with teeth on the inner surface for dead foetus. The Chamberlain family used four pairs of forceps of different sizes with only cephalic curve.

- **Levret (1747)**-introduced the pelvic curve
- **Smellie (1751)**-reinforced pelvic curve & introduced English lock and used in aftercoming head.

Chamberlen forceps (Maldon)



- **Tarnier (1877)**-introduced axis traction.
- **Barton and Kjielland** - introduced the two specialized forceps.

Thereafter, the knowledge of forceps became widespread, with the development of models of the short straight forceps and the long forceps with a pelvic curve. The history of obstetrical forceps is long and, often, colorful. Sanskrit writings from approximately 1500 BC contain evidence of single and paired instruments; Egyptian, Greek, Roman, and Persian writings and pictures refer to forceps that were originally used for extraction following fetal demise to save the mother’s life. In the last decades, however, with the ability to perform a cesarean section relatively safely, and the introduction of the ventouse or vacuum extractor, the use of forceps and training in the technique of its use has sharply declined.

When the anesthetic effects of ether and chloroform were discovered in the mid 1800’s, many members of the British clergy argued that this human intervention in the miracle of birth was sin against the will of God. . According to Scripture, childbirth pain originated when God punished Eve and her descendants for Eve’s disobedience in the Garden of Eden. The first use of modern anesthetic for childbirth occurred a scant 3 months after Morton’s historic demonstration of the anesthetic properties of ether at the Massachusetts General Hospital in Boston, Massachusetts. James Young Simpson used diethyl ether to anesthetize a woman with a deformed pelvis for childbirth. Queen Victoria undaunted by the clergy chose one day to use an anesthetic during labor and the clergy’s position crumpled like the great wall of ‘Berlin’. The first woman anesthetized for childbirth in the United States was Fanny Longfellow, wife of the American poet Henry Wadsworth Longfellow. Anesthetics were subsequently used increasingly for labor pain, and the concurrent drop in mortality and morbidity in both mother and infant were attributed. In 1941, Robert Andrew Hingson (1913–1996) and Waldo B. Edwards developed the technique of continuous caudal anaesthesia using an indwelling needle[18]. The first use of continuous caudal anaesthesia in a labouring woman was in 1942[19].

Beginning in the 1940s, childbirth professionals and mothers began to challenge the conventional assumptions about the safety of medicalized births. Physicians Michel Odent and Frederick Leboyer and midwives such as Ina May Gaskin promoted birthing centers, water birth, and homebirth as alternatives to the hospital model.

Birthing centre

Presents a simulated home-like environment. Located on hospital grounds or “free standing” (i.e., not hospital-affiliated). Accept women with low-risk pregnancies – which mean that you’ll have to be evaluated for risk first. No epidurals. During a medical

emergency, you may have to be transported to a nearby hospital.

The Bradley Method of natural childbirth (also known as “husband-coached childbirth”) is a method of natural childbirth developed in 1947 by Robert A. Bradley, M.D. (1917–98) and popularized by his book *Husband-Coached Childbirth*, first published in 1965. The Bradley Method teaches couples to manage labor through deep breathing and the support of a partner or labor coach[5]. It relies heavily on training fathers to be labor “coaches,” or partners.

Water birth

Baby spends nine months doing water ballet in a warm pool of amniotic fluid, and then makes a sudden, harsh entrance into the cold, bright (and dry) world. Michael Odent, another French physician, put mother and baby both in the water. This appears to help some women ease labor pain. This reduces a baby’s stress. If you’re opting for a water birth, you’ll labor in a warm tub or pool, kept at approximate body temperature (95 to about 100 degrees, but no more than 101, because your body temperature could rise, causing the baby’s heart rate to increase). Since a baby’s breathing will not start until he or she comes out of the water and into the air (babies don’t breathe in utero), drowning is not considered a risk of water births. For a couple of reasons, however, a baby’s underwater entry should be limited to no more than a few moments (ten seconds is the norm in the U.S.): first, because the umbilical cord can tear, cutting off the baby’s oxygen lifeline, and second, because once the placenta separates from the uterus – which can happen at any time after delivery – it can no longer provide the baby with sufficient oxygen. A special underwater Doppler device will monitor your baby’s heartbeat. You can also receive medications through an IV while you are in the water.

Coffin birth

Known in academia by the more accurate term postmortem fetal extrusion [11,12] is the

expulsion of a nonviable fetus through the vaginal opening of the decomposing body of a pregnant woman as a result of the increasing pressure of intra abdominal gases. Typically, as a dead body decomposes, anaerobic bacteria in the gastrointestinal tract proliferate and release gases such as carbon dioxide, methane, and hydrogen sulfide [13,14]. As the volume of gas increases, the pressure begins to force various body fluids to exude from all natural orifices[9]. It is at this point during the decomposition of a pregnant body that amniotic membranes become stretched and separated, and intra abdominal gas pressure may force the eversion and prolapse of the uterus, which would result in the expulsion of the fetus through the vaginal canal[15]. The earliest presented case occurred in the year 1551 when a pregnant woman was tried and hanged by the courts of the Spanish Inquisition. Four hours after her death, and while the body still hung by the neck, two dead infants were seen to fall free of the body[16].

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