Public Health Then and Now

The Evolution of Maternal Birthing Position

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Introduction

The birth of a child is one of the most significant events in a woman's life. Practices associated with the birthing process are, therefore, important to the woman's health and well-being as well as the successful outcome of her pregnancy. Included among these practices is the horizontal birthing position which has been the subject of a great deal of controversy.[1-14] This position has been widely used in Western cultures only for the last 200 years. Prior to this time, the recorded history of birthing indicates upright birth postures were used extensively.

Both the dorsal position, where the parturient is flat on her back, and the lithotomy position, where she lies on her back with her legs up in stirrups, have been challenged in the last 100 years.[1-5] Since the decline in the use of scopolamine and morphine "Twilight Sleep", there has been a trend encouraging parturients to utilize lateral, dorsal, and reclining positions to give birth, but such practices are far from universal.[5]

This paper will explore the historical roots of the dorsal and lithotomy birthing positions now practiced in most hospitals in the United States. Although various explanations for the change in position have been proposed, including facilitation of forceps usage, promotion of men's power over women (both midwives and parturients), and requirements with the use of anesthesia, none adequately explains the confluence of events which led to the shift away from the upright to the horizontal maternal birth position. Conflict between midwives and surgeons and interaction of the disciplines of obstetric surgery and lithotomy surgery which emerged 300 years ago appear to have contributed to this change. The transition was greatly influenced by the French who were at that time considered the leaders in obstetrical practice.

Worldwide Practices

Most cultures throughout the world either use, or have used, such birthing positions as kneeling, squatting, sitting, and standing for labor and delivery (Figures 1–4).[15-18] Earliest records of maternal birth positions show the parturient in an upright posture, usually squatting or kneeling. A bas-relief (see Figure 1) at the Temple of Esneh in Egypt depicts Cleopatra (69?–30 BC) in a kneeling position, surrounded by five women attendants, one of whom delivers the child.[15] The birthing chair (Figure 2) dates back to the Babylonian culture, 2000 BC. It then spread to many parts of the world.[19] In some parts of the world, various traditional birthing chairs are still used, while a modern version is now available in some Western hospitals.[20]

In a 1961 survey of 76 traditional cultures, Naroll, *et al.*, found that in only 14 (18 per cent) did the women assume either a prone or dorsal birthing position.[17] The findings and conclusions of this cross-cultural survey are in accord with extensive work done earlier by Engelmann (1882), and Jarcho (1934).[7,15] Currently in many developing countries, traditional birth attendants (usually women) attend parturients. The birth position they use differs from that suggested by physicians and by trained midwives who have been taught the Western practice of horizontal labor and delivery positions.[21,22]

Interprofessional Rivalry

In Europe until about 1550, midwives were the only attendants at births[23] (see Figure 3). When Paré, the famous surgeon-obstetrician, practiced medicine (1517?–1590), barber-surgeons began to compete with midwives for obstetric cases.[24] Initially, these surgeons were poorly trained; their social rank remained on a par with that of carpenters, shoemakers, and other members of guilds, known collectively as the "arts and trades" until the 18th century.[25] As time progressed, they sought recognition for the obstetric skills they had acquired in delivering women whose lives were threatened as a result of obstetric complications. Achieving recognition for their skills was made difficult, due to their status and because exposure of women's bodies to men was considered indecent. Physicians, granted special privileges and accorded higher status than surgeons, were not eager for this advancing profession to encroach on any of their territory. Neither did midwives, many of whom had received formal training, welcome the surgeons' intrusion as it represented a threat to their livelihood and recognized area of expertise.

Mauriceau (1637–1709), a prominent French physician at this time, recorded the climate of the times and the coexistence of the intense interprofessional rivalry:

> "There are many Midwives, who are so afraid that the Chirurgeons should take away their practice, or to appear ignorant before them that they chuse rather to put all to adventure, then to send for them in necessity: others believe themselves as capable as the Chirurgeons to undertake all . . . and some do maliciously put such a terror and apprehension of the Chirurgeons in the poor women (for the most part undeservedly), comparing them to Butchers and Hangmen, that they chuse rather to die in Travail with the Child in their Womb, than to put themselves into their hands."[26]

Although midwives continued to retain their longstanding position as the primary birth attendants (see Figure 4),

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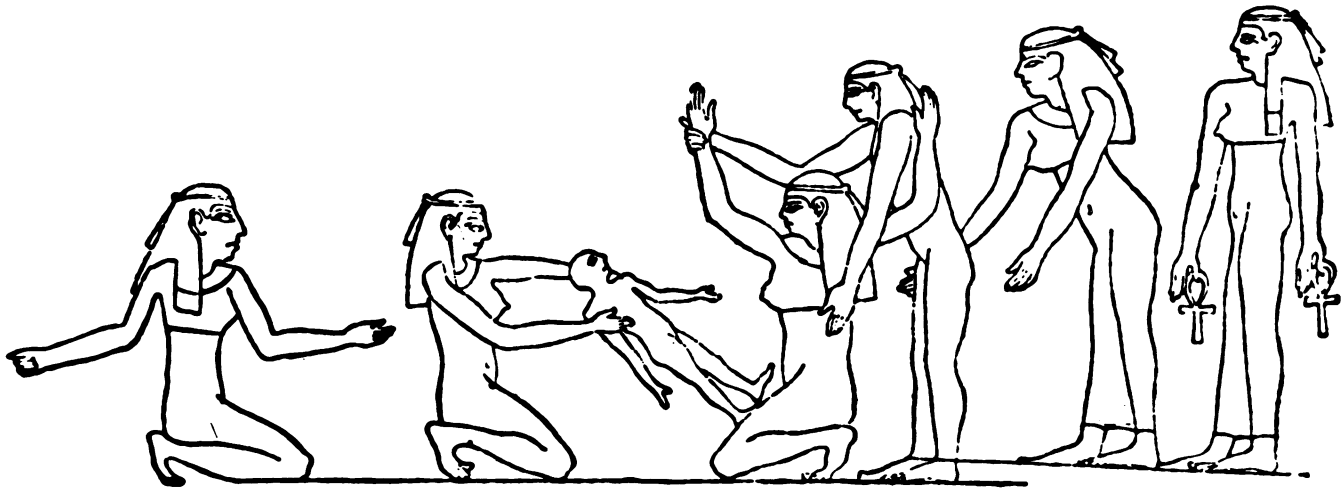

FIGURE 1—The accouchement of Cleopatra. Bas-relief from the temple of Esneh, a town on the Nile in Upper Egypt.

barber-surgeons were increasingly called in cases likely to result in fetal and/or maternal morbidity or mortality; often they practiced manual extraction of the fetus from the mother in order to save her life.[23] The practice of obstetrics offered surgeons a plausible entry into the medical field. Their attendance at traumatic cases helped them develop a disease orientation to childbirth, and they held a competitive advantage over midwives due to their skills or practice in dealing with complications. Derogated by the physicians and forced to compete with midwives, they had to make themselves marketable. If most women viewed pregnancy as a normal, natural event, then the surgeons' services would not be required. If, however, pregnancy was seen as an illness, then their presence might appear more appropriate. Midwives did at times promote their own services by proclaiming the need

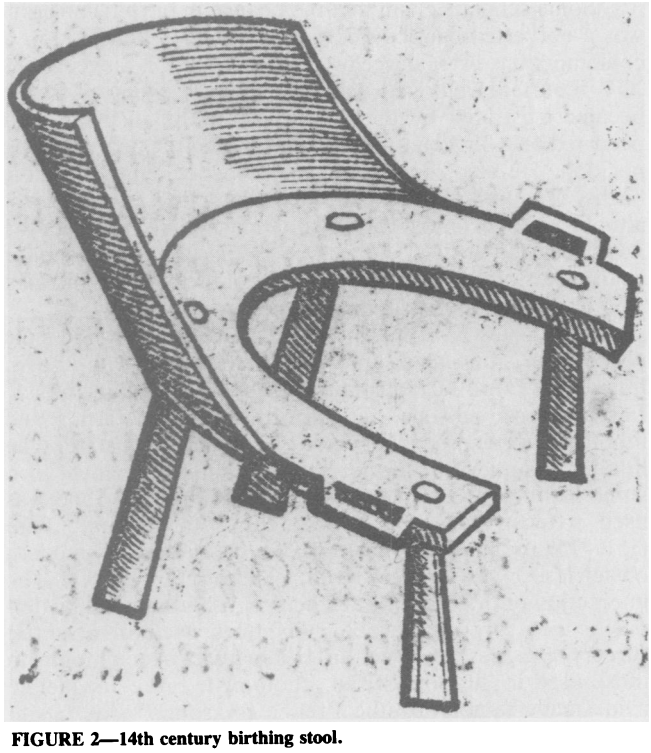

FIGURE 2—14th century birthing stool.

FIGURE 3—Midwives attending woman in labor on birth chair, 16th century.

for intervention, although intervention within a disease orientation benefited the male accoucheurs.

Guillemeau (the pupil and son-in-law of Paré) had advocated reclining bed birthing in 1598, supposedly for women's comfort and to facilitate labor[27]; the techniques used by surgeons to handle difficult births 50 years later could also be best performed in a reclining position. This led to using the bed as the place to perform childbirth, and the reclining position developed into the one practiced for normal as well as complicated deliveries. Women at the Paris Hôtel Dieu (a large hospital with a maternity section) delivered in a special bed; by the end of the 17th century, bed delivery had

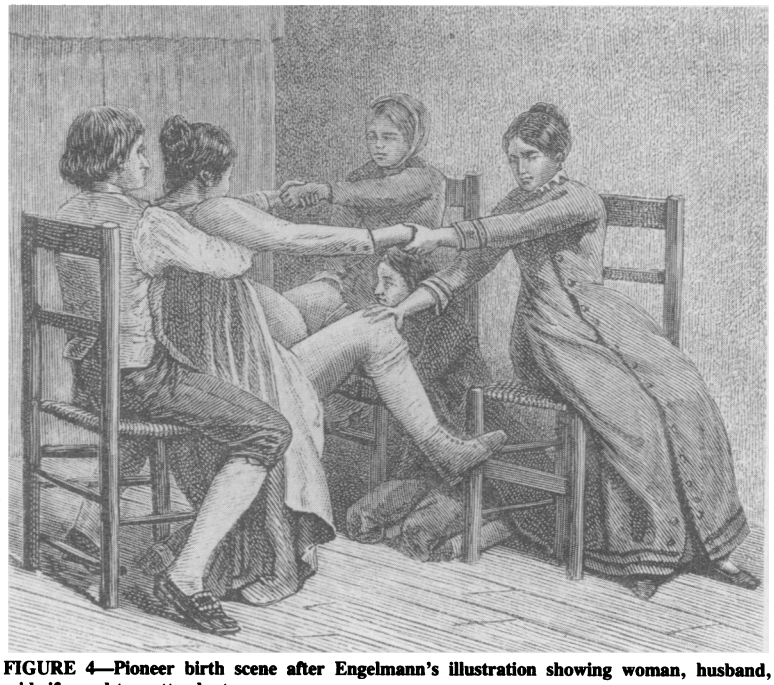

FIGURE 4—Pioneer birth scene after Engelmann's illustration showing woman, husband, midwife, and two attendants.

become a common practice in France except among rural women.[28]

Although convenience is continuously pointed to in the literature as the primary reason for changing to the supine birth position, the experience varied by country. By the 17th century, when births began to occur in bed, many women, especially in England, lay on their sides, which differed from the reclining position used in France that accommodated the birth attendant.[29]

Influence of Mauriceau

Despite Guillemeau's earlier advocacy of the reclining position and the influence of the barber-surgeons, the person generally credited with greatly influencing the change in birth position is François Mauriceau.[8,30] He claimed that the reclining position would be both more comfortable for the parturient women as well as more convenient for the accoucheur. In his 1668 book, *The Diseases of Women with Child and in Child-Bed*, he recommended the change of position and offered the following recommended rationale for doing so:

> ". . . all Women are not accustomed to be delivered in the same posture; some will be on their Knees, as many in Country Villages; others standing upright leaning with the Elbows on a Pillow upon a Table, or on the side of a Bed . . . but the best and surest is to be delivered in their Bed, to shun the inconvenience and trouble of being carried thither afterwards;
>
> The Bed must be so made, that the Woman being ready to be delivered, should lie on her Back upon it, having her Body in a convenient Figure, that is, her Head and Breast a little raised so that she be neither lying nor sitting; for in this manner she breaths best, and will have more strength to help her Pains than if she were otherwise, or sunk down in her Bed . . . and have her feet stayed against some firm thing. . . ."[26]

Mauriceau also was affected by prevailing views of pregnancy as an illness. His 1668 work on midwifery in which he claimed that pregnancy, properly construed, was a "tumor of the Belly" caused by an infant was among the first of many early references to medical problems during pregnancy and childbirth[31] that defined all births as inherently pathologic and abnormal, leaving no room for the midwife.[32] Change in position was a natural accompaniment of the shift in concept.

Role of King Louis XIV

Some scholars claim that the change in birthing position was a perverted caprice of King Louis XIV (1638–1715), a contemporary of Mauriceau (1637–1709).[30,33] Since Louis XIV reportedly enjoyed watching women giving birth, he became frustrated by the obscured view of birth when it occurred on a birthing stool, and promoted the new reclining position. He also insisted on male accoucheurs attending births. The influence of the King's policy is unknown, although the behavior of royalty must have affected the populace to some degree. Louis XIV's purported demand for change did coincide with the changing of the position and may well have been a contributing influence.

King Louis XIV not only promoted the use of the male accoucheur, but also granted favors to a well-known lithotomist Frère Jacques (born Jacques Beaulieu in 1651).[34] For unknown reasons, the procedures of obstetrics and lithotomy were preoccupations of this head of state. The lithotomy surgery of the urinary bladder for removal of a stone had been performed since at least 200 BC,[35] and was used extensively in France in the 17th century. Paré (1517–1590), who has been called the father of modern obstetrics,[23] was also involved in lithotomy surgery. The interaction of the evolving sciences of lithotomy and obstetrics is not surprising since techniques used in obstetric surgery (e.g., cesarean section) had features in common with those used in lithotomy. The lithotomist, Frère Jacques, a name made famous by the French folksong,[34] was taught anatomy by Fagon, who served as a surgeon to Louis XIV.

At one point, Frère Jacques so impressed Louis XIV that the King gave instructions for him to be lodged with the Royal Valet and to be given the King's License to do lithotomy operations.[34,35] Frère Jacques performed the lithotomy operations at the same Hôtel Dieu during the time period in which the new birth position was instituted. Although a precise relation between the reclining birth position—the forerunner of the lithotomy position—and the lithotomy operation is difficult to establish, the adoption of the lithotomy position for birthing and extensive practice of the lithotomy operation occurred at the same time and place in France in the 17th century.

Forceps and Anesthesia

It has also been argued that the change in birthing position was instituted because it provided improved access to the perineum when forceps were used.[8,9] Forceps had been known in obstetrics since the third century[36] and were also used in lithotomy procedures by Paré in the mid-1500s.[35] Obstetric forceps fell into disuse, however, until 1588 when they were rediscovered by Chamberlen. To guard their secret, the Chamberlen family, French Huguenots who fled to England for safety, carried the forceps in a locked case, and used them under a sheet with the patient blindfolded.[37,38] Mauriceau, because of his prominence, was offered the secret of the forceps by a descendant of Chamberlen in 1670. He declined to buy the instrument (which he never actually saw)[24] because he had witnessed their unsuccessful use in the delivery of one of his patients.[6]

It is reported that forceps were not used by others outside of the Chamberlen family until 1700,[24,31,37] and that the secret of forceps construction emerged around 1720 at which time their utilization increased dramatically.[39] Forceps could not initially have played a major role in affecting the birth position, since the birthing position had been changed many years before forceps came into wide usage, although they may have been an important factor in the retention of the reclining and lithotomy positions.

A number of scholars believe that the advent of general anesthesia eliminated women's ability to participate at all in labor and delivery, requiring them to lie down to be delivered.[40] However, a relationship between general anesthesia and the change in birth position is unlikely, since anesthesia was not used until almost 200 years after the reign of Louis XIV. In Europe, Sir James Simpson of Edinburgh introduced the use of chloroform in 1847, and the use of general anesthesia in obstetrics increased after chloroform was administered to Queen Victoria in 1853.[39]

Flat Maternal Birth Position in US

Neither the lithotomy position nor the flat horizontal position was recommended by Mauriceau in the mid-1600s. He advocated the reclining posture which may be more favorable physiologically and more comfortable for the woman. The controversial flat position[41] (in contrast to reclining) first began to be used in the United States.[42,43] This position differed from that used in European countries. In Cazeaux's 1884 obstetrics book, it is reported that women in the United States lie flat on their backs, French women lie back on an inclined plane, English women lie on their left side, and German women use the birthing chair.[42] Since European practices greatly influenced those of the United States, it is understandable that American accoucheurs would have emulated the European practice of birthing in bed. Exactly why the United States deviated from the European reclining posture is not clear, however.

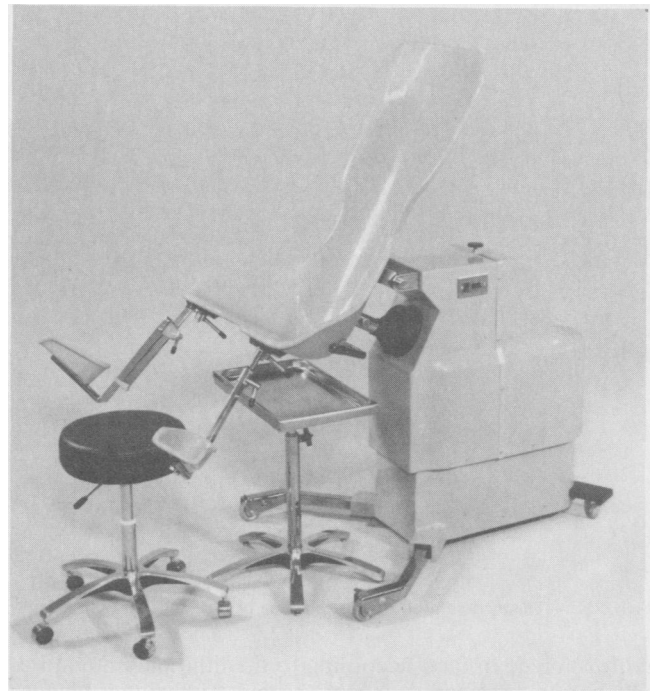

FIGURE 5—The modern birthing chair supports the mother in the upright position.

The employment of the flat dorsal birth position (circa 1834) is attributed to William Potts Dewees, the third chairman of obstetrics at the University of Pennsylvania.[8,44] Dewees advocated the dorsal birth posture, although he recommended side-lying for labor. The site of implementing his recommendation is uncertain, since Dewees does not define the term "sick room."[43] His writings support the contentions that the United States had deviated from European practice, and that convenience of the accoucheur was crucial.

> "The British practitioner almost invariably directs the patient to be placed upon her side . . . while the Continental accoucheur has her placed on her back . . . the woman should be placed so as to give the least possible hinderance to the operations of the accoucheur—this is agreed upon by all; but there exist a diversity of opinion, what that position is. Some recommended the side; others the knees, and others the back. I coincide with the latter. . . . Therefore, when practicable, I would recommend she should be placed upon her back, both for convenience and safety."[43]

Since he "coincides" with an established position, evidently he was reflecting an existing opinion and the flat position had been advocated by others preceding him.

Links between Lithotomy and Obstetrics in US

William Shippen, Jr., the first chairman of Obstetrics and Anatomy at the University of Pennsylvania, was an influential leader and teacher in obstetrics until his death in 1808. Writing of Shippen, one scholar stated: "Among colonial physicians specializing in midwifery, no one deserves a more prominent place."[45] Shippen established a lying-in hospital in Philadelphia in 1765.[46] Yet when Shippen is discussed in midwifery literature, his career as an esteemed lithotomist is

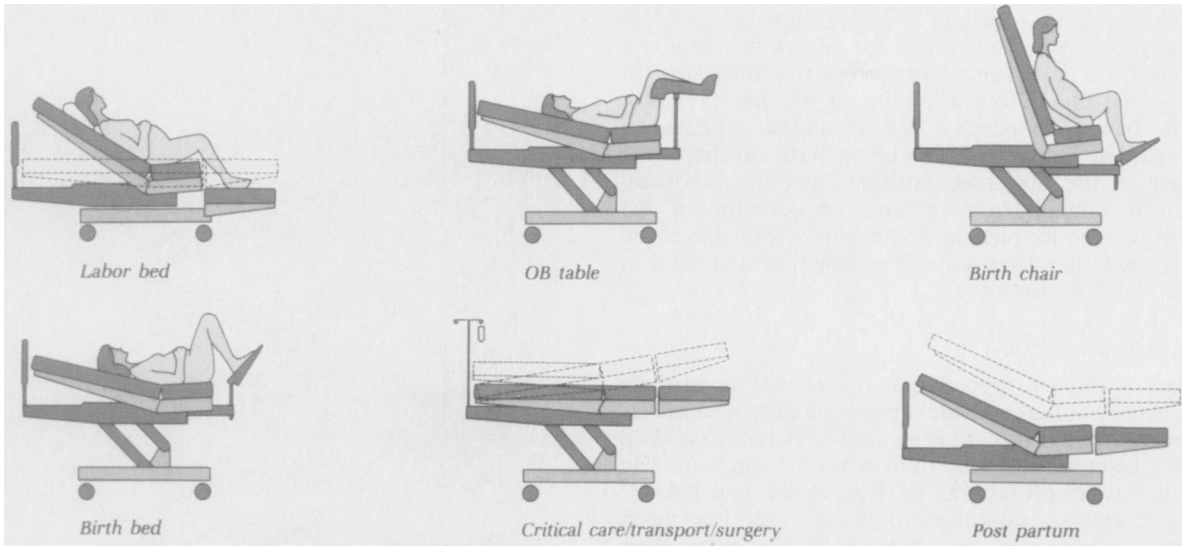

FIGURE 6—The modern multipurpose birthing bed has many uses in today's labor-delivery-recovery (LDR) room.

not explored. In fact, according to the lithotomy literature, Shippen is considered one of the most influential bladder stone lithotomists although only a few of his writings are extant.[47] Another connection between the two specialties involves Hugh Hodge, who followed Dewees as the Chairman of Obstetrics at the University of Pennsylvania Medical School. Like Shippen, Hodge was a student of lithotomy. His mentor (Caspar Wistar) was a bladder stone lithotomist and a pupil of Shippen's. Thus we have an additional link between obstetrics and lithotomy in the United States during the late 18th century.[44]

From the mid-18th to the 20th centuries, obstetric practices were not standardized, and various forms of horizontal positioning prevailed. Moreover, there was almost no control of or examination for medical licensing, and medical schools enforced only minimal requirements.[48] Such circumstances would delay the spread of Shippen's influence on birth position, which was also undoubtedly greatly affected by accoucheur advantage of horizontal positioning.

Conclusions

The pros and cons of childbirth in the dorsal and lithotomy positions have been discussed at least since Engelmann's time (1882)[7]; however, little has been done until recently to encourage alternative birthing positions that may be better accepted by and more beneficial to the parturient woman, her child, and the birth attendant (see Figures 5 and 6). The adoption and use of the lithotomy position was not based on sound scientific research. By exploring the circumstances that existed when the maternal birth position changed, we see that the position was altered as a result of interprofessional struggles of surgeons and midwives and by the development of obstetrics as affected by the practice of lithotomy. A position was implemented without verifying its appropriateness. Today, with more women and their families exercising their rights to actively participate in the birth experience and to make it a more personal and more physiologically and psychologically advantageous experience, the time is ripe for further scientific investigation of the lithotomy position. Unlike our historical precedent, where an important change seems to have been influenced by the reputation of prominent persons and the prevailing circumstances of the times, it is currently possible to design and plan studies that evaluate the different birthing positions—options that have an important bearing on the health and safety of the parturients and the newborns.

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