13.1 Historical Perspectives

In the early 1980s, Professor Romano Forleo, the Head of the Department of Obstetrics at Fatebenefratelli Hospital in Rome, was one of the first in Europe to introduce in a Department of Obstetrics the so-called humanized childbirth (humanizing birth means considering women's values, beliefs, and feelings and respecting their dignity and autonomy during the birthing process). The idea was to introduce the “home in the hospital” rather than reproducing the home-like environment proposed by the birthing centers which sprung up in the USA in the 1970s, as alternatives to the heavily institutionalized maternity hospital [1].

A women-centered labor and delivery performed within a hospital department was thought to be more complete, adding the chance of a pain-free labor and delivery upon the woman’s request. Therefore, in parallel, the anesthesia department was called on to contribute to this project, starting an epidural service and increasing the use of epidural anesthesia for cesarean section and creating one of the first full-time obstetric anesthesia departments in Italy, led by Prof. Giorgio Capogna. One of the major changes for all of us was the different way of considering the women as mothers rather than as patients, but also the involvement of the father and his presence in the labor and delivery room and in the cesarean section theater contributed to change and adjust our anesthetic procedures [2].
At that time, the UNICEF maternal best practice standards had not yet been published, but we already used to let the mother hug her baby immediately after birth after cesarean delivery, even if for only a short period of time and after the neonatologist’s assessment, and the rooming-in was one of the most frequent maternal choices after delivery.

13.2 The Cesarean Section, A Normal Surgical Procedure?

Nowadays, cesarean section is one of the most frequent surgical procedures in many European countries and North America and it is perceived as a “normal surgical procedure,” a routine practice that is not performed exclusively to save the life of the mother and of the baby, as it was originally designed for, or as a necessary or advisable procedure due to obstetrical reasons, but also for various nonmedical reasons, like the wish of the parents. The anesthesia approach is in favor of spinal anesthesia except for emergency cesarean section. One of the advantages is that both parents can experience the birth of their child. However, in many hospitals the cesarean section is still approached as a strict surgical procedure and therefore only the mother is allowed in the theater. Nowadays, in more and more hospitals the father is allowed to be present in the operating theater, but more can be done in order to satisfy both parents. Despite the general awareness of encouraging parent participation, rigid protocols define the appropriate behavior in the operating theater, and therefore the couple’s participation is usually limited by the medical staff’s needs as well as by the material and hygienic constraints of the surgical setting, according to the different hospitals’ habits and procedures.

In addition, most frequently cesarean sections are performed as an emergency procedure or as an elective, programmed surgery due to pathological reasons, and therefore an immediate contact with the parents is often not possible or advisable, due to the neonatal or maternal conditions.

Even if the mother and the baby are doing well and are at term, an immediate maternal–neonatal contact might be denied for many not well-defined reasons. For example, although the mother is generally awake during the surgery, she usually does not see her baby coming out, because a drape separates her head from her abdomen. Unfortunately, in some institutions, the mother may be routinely under the effect of tranquilizers to help her face the atmosphere of the operating theater and the sensation of her body being operated on. In addition, it is not unusual for the baby to need assistance because he/she cannot breathe autonomously. Moreover, after the delivery, the baby is quickly shown to the mother and transferred to another room next to the theater together with the father. Subject to the health of mother and baby, the time of separation between the woman and her child after surgery can last one or more hours according to the hospital routines.

As a consequence, cesarean section does not allow the immediate skin-to-skin contact deemed beneficial in promoting bonding between mother and baby [3].
13.3 A More Human Approach

To increase the satisfactory birth experience, another approach is needed. In many years of research in cesarean section, the focus has been on improving the surgical technique and to reduce or to prevent complications. This has led to a reduced peri-operative risk, but there was no focus on a very important point which is generally accepted in vaginal delivery, namely, the immediate skin-to-skin contact between the mother and her child. Also generally accepted is that due to this interaction several important factors are positively influenced like breastfeeding, bonding, glucose levels, and cardiovascular and respiratory stability [4-6].

Therefore, another approach in cesarean section is needed to improve not only the mother’s satisfaction but also the maternal and neonatal outcome.

There are now a great number of studies [4-6] that demonstrate that mothers and babies should be together, skin to skin immediately after birth. The neonate’s temperature, heart and breathing rates, and glycemia are more normal and stable. In addition, skin-to-skin contact immediately after birth allows the baby to be colonized by the same bacteria as the mother and this, plus breastfeeding, is believed to be very important factors in preventing allergic diseases. From the point of view of breastfeeding, babies who are kept skin to skin with the mother immediately after birth for at least 1 h are more likely to breastfeed without any help, which is seen in vaginal delivery. Prolonged skin-to-skin contact during the first few months after birth may also decrease total neonate crying, improve sleeping and decrease the incidence of maternal postpartum depression [7].

The first hour after birth after vaginal delivery, which is also to be expected in cesarean section, has been defined as the “sacred hour,” a period of time during which skin-to-skin contact provides physiological stability and maternal attachment behaviors, favors optimal brain development, decreases the negative effects of separation, and increases breastfeeding rates and duration [8].

In 2008, the first steps were made to promote uninterrupted skin-to-skin contact immediately after birth after cesarean section by Professor Nicholas Fisk and coworkers at Queen Charlotte’s Hospital in London, which signified a turning point in the humanization of the cesarean section [9]. Their approach described a number of measures mimicking as much as possible a vaginal delivery and called it “natural cesarean.” These measures included among others the following: (a) parents can watch their baby immediately born since the surgical drape that separates the upper part of the mother’s body from the birthing scene is dropped at the extraction time; (b) the baby is extracted slowly so that he/she is better able to start breathing unaided [10]; (c) the newborn is immediately handed to the mother for the skin-to-skin first contact, favoring maternal–infant bonding; (d) if requested, the father can perform a second cutting of the umbilical cord. The aim of this procedure is to encourage mother and father to be active participants in the birth of their child instead of undergoing the surgical event passively. This was a big step forward, as even little changes can make a big difference: for example, at Brigham and Women’s Hospital in Boston, USA, the version of the “natural cesarean” or family-centered cesarean is called the “gentle cesarean,” and mothers who choose this way of treatment can
view the birth through a clear plastic drape, and immediate skin-to-skin contact follows.

The modification of the ordinary surgical technique to a more natural or better, woman-centered model is certainly a challenge and seems to indicate the current trend towards medical and social acceptance of cesarean section in many countries, where women as well as physicians regard surgery and more generally interventions during the birthing process as part of the necessary routine [11, 12].

The definition of “natural cesarean” may, however, be questionable since the definition of natural childbirth itself is very difficult, and there is no clear consensus about what “natural” or “normal” childbirth is but there is a general agreement about the fact that childbirth should be “woman centered,” giving priority to her wishes and her needs, highlighting the importance of informed choice, continuity of care and the woman’s involvement. For this reason, we feel it more appropriate to define all the attempts to perform a woman-centered cesarean section as a “humanized cesarean delivery” to emphasize that even if it is a surgical procedure it is still a “delivery” and not only a “section,” and more like a birth than an operation.

13.4 The Challenge and Implementation of “Humanized Cesarean Delivery”

The clinical processes that support a mother- and baby-centered approach to cesarean section may vary between hospitals and countries and are a challenge to achieve. Although birth is a major life event for parents, a full parental involvement during cesarean section is still not common practice. Furthermore, we have to realize that apart from the cesarean section per se, the whole journey of the parents is a multidisciplinary team effort. Gynecologists, anesthesiologists, pediatricians, nurse anesthetists, obstetric nurses, and surgical nurses should be involved in the multidisciplinary approach of the humanized cesarean delivery [13, 14]. Each discipline contributes to the general protocol which describes in detail every step of the humanized cesarean delivery. The most important steps in the protocol are the parental participation, information for the parents (e.g., with video), a perfect neuraxial anesthesia (without any form of sedation), the 24-h staff availability for this procedure, and well-defined criteria of contraindications for this approach, in order to offer a humanized cesarean delivery also in the case of unplanned cesarean section due to nonprogressive labor without fetal distress. Usually this procedure is not recommended, or even contraindicated, with preterm births in emergency cesarean deliveries in cases where the baby is at risk of a low Apgar score.

There are some commonly used procedures and practices utilized among the hospitals to promote the humanization of cesarean delivery to transform a major surgical procedure such as a cesarean section into a mother–baby–family-centered experience. This includes the way it is performed. In addition to some procedures described in literature, some more specific aspects have to be highlighted, including (1) the placement of the ECG leads on the maternal back to favor skin-to-skin contact, (2) the temperature in the theater is kept optimal at 24 °C, (3) the gynecologists
commence surgery with double sterile gloves and arm sleeves. The pediatrician is available in the neonatal resuscitation room and will treat the baby if neonatal distress occurs. Prior to the baby being born, the surgical drape is lowered for the parents to be able to observe the birth, which includes being born slowly, facing towards the parents and handed over to the mother’s chest with the help of the obstetric nurse. If possible leave the baby’s body in the uterus for a few moments in order to allow the contraction of the uterus around the body of the fetus [15]. This will favor the initiation of breathing and crying and the clearing of the fetal respiratory system of fluid. Delay cord clamping to permit auto transfusion and improve neonatal iron stores [16].

Before continuing the surgical procedure, the surgeon removes one pair of gloves and sleeves. The sterile barrier is restored by raising the surgical drape. The first neonatal assessment and monitoring on the chest of the mother can be performed by the neonatologist, the obstetric nurse, the midwife or the anesthesiologist, according to local clinical practice. If the baby shows no sign of distress, it stays on the mother’s chest as long as possible [13, 14]. Encourage intraoperative breastfeeding. Routine care for the infant can be delayed until after the first feeding is completed and keep the mother and baby together. Rather than separating the mother and newborn for the trip to the recovery area, have the mother cradle the newborn on her chest during the transport process. Within an hour after birth the baby may be checked by the pediatrician in the recovery room. In this procedure there are a few very important questions to answer regarding the safety of the surgical site infections, more blood loss and maternal and fetal outcome. In the next section, the outcome of the humanized cesarean delivery will be described.

13.5 Neonatal and Maternal Outcome

The plan to promote early skin-to-skin contact and keep the newborn with the mother may need to be altered if the newborn needs more intensive support at the resuscitation table for symptoms of transient tachypnea, which will affect both the neonatal and the maternal outcome. Careful attention to ensuring that the baby is not left exposed to the cold operating room temperature is helpful to reduce the risk of hypothermia. Early skin-to-skin contact at cesarean section has been reported to improve maintenance of neonatal thermoregulation [17]. Forced air warmers may prevent thermal dispersion and are as effective as an incubator in preventing neonatal hypothermia while the newborn baby is on the mother’s chest as she is undergoing surgery in the operating room, thus favoring very early skin-to-skin contact in a cold environment [18]. Nowadays, more data are published on the outcome of the humanized cesarean delivery [13–15]. Birth experiences of a more humanized cesarean delivery approach were rated higher when compared with the classical cesarean section. Moreover, with regard to humanized cesarean delivery neonatal outcome showed no differences in APGAR scores compared with the classical cesarean section performed; there were less admissions to the neonatal ward, and suspected neonatal infection was less frequent. The procedural surgical time may be
a little increased but that is due to the lowering of the surgical drapes and to removing the gloves and arm sleeves. The maternal outcome was not affected by applying a humanized cesarean delivery. Maternal surgical site infections and blood loss are comparable between the humanized cesarean delivery and the classical cesarean section. However, the need for maternal blood transfusion is less in the humanized cesarean delivery compared to the conventional cesarean section. This may possibly be explained by the fact that the humanized cesarean delivery includes spontaneous delivery of the placenta which is associated with less maternal blood loss when compared to manual removal [19]. and, in addition, neonates start to breastfeed earlier, most of the time already during surgery, and this may also increase uterine contractions [13–15].

Conclusion

As cesarean section rates are increasing worldwide, we have to realize that birth is a major life event for parents. It is our responsibility to increase the satisfactory birth experience for the parents and as such another approach is needed. The clinical processes that support a mother- and baby-centered approach to cesarean section may vary between hospitals and countries and is a challenge to achieve. The humanization of cesarean delivery to transform a major surgical procedure such as a cesarean section into a mother-baby-family-centered experience is a multidisciplinary challenge. Once the humanized cesarean delivery is well organized and more common practice the rating of the birth experience is increased. Moreover, the maternal and neonatal outcome is also improved and the satisfaction of the healthcare worker involved is increased.

References