

Vaginal delivery: A forgotten art!

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Birth is, perhaps, the most exciting and risky journey undertaken in a lifetime

Practice changes as knowledge progresses. But our knowledge about parturition remains limited with regards to biological mechanism that controls the initiation of labour. Factors that result in successful vaginal delivery are the uterus, the placenta, the cervix and the foetus. *All must act in concert*. Also, there should be an adequate pelvis for a foetal size.

In the last three decades, focus has shifted to foetus and induction of labour has doubled as our efforts to “Save Life”. The concept of Elective Primary Caesarean is no longer a rarity and “myth”.

Times change—not always for the better

Caesarean section

During 70's and 80's there has been an exponential increase in the caesarean rate throughout the world and in some countries more than the others. Norway in 1969 showed C-section rate of 2% compared to 13.4% in the 1990's. Similarly Europe in 2001 had 22%, Puerto Rico showed 31%, and Brazil 35% C-section rates. United States in 2000 showed an alarming 60% of Caesarean section¹.

Several factors have attributed to this rise in caesarean section. These include level of medical training in art of Obstetrics, defensive medical practice, teenage pregnancy/ increased maternal age at the time of 1st pregnancy, small family, “celebrity factor” and “on demand” for life style reasons.

The rise in caesarean section has caused an alarm in the medical fraternity and the present target world-over is to limit the Primary Caesarean section to 15% and repeat C-section to 65%². To achieve this, there should be specified guidelines for trial of labour. Also continuous labour support with cardiotocography and partogram should be available for monitoring. A strong leadership with inter-department collaboration between the obstetrician, the physician and the paediatrician is the need for present practice.

The single-most factor that remains unresolved between “vaginal delivery versus caesarean section” is our limited knowledge of pathophysiology of foetal adaptation to labour; and short and long term outcome of the foetus and the mother.

The foetus

For the last 50 years there has been a considerable reduction in intra-partum and post-natal death of foetus. However, the relationship between such decline and caesarean section is not well defined. Studies on foetal middle cerebral artery blood flow suggest that during uterine contractions, the intracranial haemodynamics changes dramatically even in a normal fetus^{3,4}. So in an already compromised foetus (IUGR, high risk pregnancy), reduced foetal blood flow during uterine contractions may be detrimental. Hence-forth primary caesarean may be a better choice as a mode of delivery for a compromised foetus.

Beneficial Impact of Vaginal Delivery on Neonatal Respiratory Morbidity

There is substantial evidence to suggest that caesarean section is associated with high risk of short and long term respiratory complications in neonates. Respiratory distress syndrome is more common after caesarean because of aspiration of amniotic fluid or blood during the surgery. During vaginal delivery- as the foetus negotiates its way through the maternal pelvis, there is stress which induces an endogenous release of cortisol in the foetus. This cortisol helps to improve the pulmonary function of the neonate. There is consensus that caesarean section performed after the onset of labour will reduce chances of RDS⁵.

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The post-natal respiratory complications increase in caesarean birth because of prevention of thoracic compression. Also the L.S. ratio and surfactant concentration are found to be lower in infants delivered by elective caesarean than vaginal delivery or emergency caesarean⁶. The respiratory morbidity can be reduced to some extent if elective caesarean is performed after 39 weeks^{7, 8}. Likewise, asthma in the childhood has been found to be more in caesarean born and as early as seven years⁹.

Still birth

The risk of unexplained still birth is found to be more during second pregnancy in mothers who had previous caesarean compared to mothers who had no surgery on the uterus. Caesarean may result in ligation of major uterine vessels which may cause high resistance blood flow pattern. During subsequent pregnancies, this may hamper implantation and placentation and result in still birth. It is suggested that for women who demand caesarean delivery over vaginal, the potential risk of still birth during the next pregnancy should be discussed.

Neonatal trauma

The complications of c-section are more in unplanned emergency surgeries. Trauma during breech presentation is as much as in vaginal delivery because acute stretching of the brachial plexus can occur even during caesarean.

Neonatal Adaptation

Extra uterine adaptation is a complex phenomenon for the foetus. The most important change in extra uterine life is in hypothalamic-pituitary-adrenal axis¹⁰. The umbilical blood and plasma concentrations of thyroxine, triiodothyronine, TSH were higher and cortisol levels seen lower in foetus born by elective LSCS than by vaginal route^{11, 12}. It was also observed that neonates are less active for initial 48 hours after caesarean delivery than vaginally born infants. However, long term consequences of the altered levels of neurohormonal factors in the immediate postpartum period of the caesarean born infant is yet to be determined.

Mother

The lady delivering vaginally is an integral part of the process of labour. Immediate maternal-infant bonding is greater with vaginal delivery once the mother holds the baby. The skin to skin interaction relates with better physiological, neurological and behavioural outcome of the infant. The let down of milk also hastens. Breast feeding is taken up earlier following vaginal delivery than after caesarean.

Caesarean section definitely has more maternal mortality and morbidity in the subsequent pregnancies than vaginal delivery due to uterine rupture or abnormal placentation.

Post partum complications

Although labour pain is the central focus during vaginal delivery, but pain after 72 hours is much less than after caesarean section. Endometritis is a major cause of morbidity following caesarean and is 21 folds more than vaginal delivery. Caesarean deliveries require frequent blood transfusions (5% more) and are commonly associated with post partum anaemia. Also, recumbency often leads to pneumonia and DVT. Rate of reopening is 0.7% after caesarean section.

There is increased morbidity following caesarean section because of fever and endometritis (27%), secondary PPH (21%), UTI (12%), breast complications (11%), wound infection (0.8%) and DVT (0.4%). Women are therefore twice as much likely to be hospitalized after caesarean than compared to women delivering vaginally¹³.

Long term morbidity after caesarean

With C-section there are increased chances of intermenstrual bleeding, secondary infertility, ectopic pregnancy, uterine rupture, abnormal placentation and chronic pelvic pain.

Long term morbidity after vaginal delivery

Increased damage to pelvic floor occurs which may result in urinary incontinence or pelvic organ prolapse. But other factors like multiple pregnancies, congenital anomalies, menopausal status also contribute.

Conclusion

During the recent past, obstetric practice has profoundly created wide controversies and it is not easy to practice maternal-foetal medicine. Currently there is no evidence to suggest that elective Caesarean Section is safer than vaginal delivery. Establishing clinical protocols aimed at identifying cases appropriate for vaginal delivery or for caesarean section should be a clear objective for an institution and that will help improve the maternal and foetal outcome.

VAGINAL BIRTH SHOULD NOT BECOME A RELIC OF THE 20TH CENTURY!

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