



## Neglected Obstructed Labor and the Need to Revive the “Dying Obstetric Art of Fetal Destructive Vaginal Operations” in the Developing Countries

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### Editorial

Neglected obstructed labor is a major cause of feto-maternal morbidity and mortality in the developing countries [1-3]. Labor is obstructed when the presenting part of the fetus cannot progress into the birth canal despite strong uterine contractions [4]. It becomes neglected obstructed labor when the obstruction is not relieved for several hours or days. Labor that is not supervised by skilled birth attendants (unsupervised labor) begets neglected obstructed labor and this situation is still prevalent in most developing countries [5-8]. It consumes a huge amount of the scarce resources budgeted for healthcare.

Globally, 293,000 maternal deaths occurred in 2013, 800 maternal deaths occurred every day, and 99% of these preventable tragedies occurred in developing countries mostly in sub-Saharan Africa and South Asia [9,10]. Majority of the maternal deaths occurred in the poor, illiterate, hard-to-reach women who are living in the rural areas with limited or no access to skilled birth attendants [11,12]. Over 80% of the skilled birth attendants in Nigeria live and practice in the urban areas [12]. Other causes of neglected obstructed labor include poverty and prohibiting high cost of maternal care in hospitals, ignorance, illiteracy, obstructed transportation, socio-cultural belief to achieve vaginal delivery at all cost, late referrals, and aversion to caesarean delivery and hospital delivery especially after a previous caesarean operation. Non-skilled birth attendants filled the vacuum created by absence of skilled birth attendants in the rural areas by providing antenatal care and even “supervising” childbirth without the prerequisite knowledge and skills [13]. The woman in this unsupervised childbirth passes through the ordeals of prolonged labor, obstructed labor, and to neglected obstructed labor with the associated sequels. The fetus dies first followed by the death of the mother that puts the lives of other children in the family in jeopardy. Many parturient women die undelivered and postmortem caesarean delivery performed as in the 18<sup>th</sup> century Obstetrics [14,15]. The few women with intra uterine infection and fetal deaths that managed to reach the hospital alive, the tip of the iceberg, were usually delivered by caesarean operations because of lack of the skills to perform the simpler fetal destructive vaginal operations, and this is associated with gamut of complications [8,16-19]. The risk of maternal death after abdominal delivery in such septic condition can be very high [20,21]. Other complications of abdominal delivery include sepsis and septic shock, anemia, blood transfusion, wound infection and burst abdomen, prolonged hospital stay, high cost of care, infertility, aversion to hospital delivery and caesarean delivery in subsequent pregnancy, obstetric fistulas, abandonment, and even divorce. Complications that have been attributed directly to fetal destructive vaginal operations include uterine rupture in 2.6% -9.1% of cases, postpartum hemorrhage in 4.5%, and cervical and vaginal lacerations in 1.3% [20,21]. Maternal mortality arising from destructive operations in the management of neglected obstructed labor ranged from 0% to 2.7% when compared to 7.5% for abdominal delivery [20-22]. Certainly, fetal destructive operation is safer than abdominal delivery in neglected obstructed labor with fetal demise provided the uterus has not ruptured and is not at the verge of rupture.

Neglected obstructed labor with septic mother and intra uterine fetal death is no longer common in the developed countries because most women in labor has unlimited access to skilled obstetric care including comprehensive emergency obstetric care. Here fetal destructive operations are obsolete and should be in the archives for historical remembrance. The “unsupervised - neglected obstructed labor” syndrome is, unfortunately, still common in the developing countries, and accounts for 8% to 10% of maternal deaths in the region [23,24]. Simple life-saving fetal destructive operations like

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craniotomy, cleidotomy, decapitation and evisceration would have prevented these morbidities and mortalities. Regrettably, these arts are dying in our current obstetric practice [17,18]. This necessitates the need for both the old and young obstetricians to "Revive the Dying Obstetric Art of Fetal Destructive Vaginal Operations" in the developing countries.

Ezugwu et al. [17] in a 15-year audit of obstructed labors in Enugu Nigeria, found that out of the 2947 cases of obstructed labor that occurred, 67 (2.3%) met the criteria for fetal destructive vaginal delivery, but only 11 (16.4%) had the destructive operations. The remaining 56 (83.6%) had caesarean section with 3 maternal deaths and higher rates of infection, blood transfusion, vesico-vaginal fistula and Asherman's syndrome. There was no maternal death in the destructive delivery group. Adeoye et al. [8] in a multi-centre study of 250 cases of obstructed labor found that 90.3% of the late referrals were from unsupervised labors with 62.7% of them coming from maternity homes and 27.6% from churches. Most women (55.6%) spent between 24-47 hours in labor before they were referred. Emergency caesarean section was performed in 81.8% of the cases; repair of uterine rupture was done in 11.6% while 3.5% had destructive delivery. Adeoye et al. [8] recommended elimination of the existence and patronage of informal maternity care providers in order to reduce the problem of obstructed labor. Sikka et al. [18] studied 230 destructive operations over 25 years in India and found that 202 cases were craniotomies (87.8%), 13 decapitations (5.7%), 8 eviscerations (3.6%), and 7 cleidotomies (2.9%). They recommended that if the fetus is dead, a destructive procedure should be considered in place of abdominal delivery which carries considerable risk to the moribund mother in neglected labor. In Turkey, Orkun et al. [19] performed caesarean delivery in a case of a neglected shoulder presentation with cyanosed hand prolapse after attempting dangerous internal podalic version. Simpler life-saving fetal decapitation was not attempted because of the clinician's insufficient experience

The principles of fetal destructive vaginal operations include quick maternal resuscitation to correct shock, electrolyte imbalance, and anemia in this ill, demoralized, exhausted, dehydrated, and infected woman that is in painful distress before relieving the obstruction through operative intervention. Intravenous infusion and blood transfusion may be required. A Foley catheter should be passed to monitor and guide fluid management. The patient is usually infected and broad spectrum antibiotics should be administered. A nasogastric tube may be passed to empty the stomach contents. Blood should be taken for full blood count, and coagulation screen. Vaginal swab and urine should be taken for analysis, microscopy, culture and sensitivity tests. These patients are at risk of postpartum hemorrhage from uterine atony and genital lacerations, and cross matched blood should be available. Other criteria for fetal destructive vaginal operations include: fetal demise must be confirmed with ultrasound, fetoscope auscultation or absence of umbilical cord pulsation, the surgeon should be skilled on art, the cervix must be fully dilated, the uterus is not ruptured and is at verge of rupture. There must not be obstructing pelvic mass or cancer of the cervix. The woman, her husband, and other members of her family should be counseled on the causes of the fetal demise, and informed consent obtained for destructive delivery. There should be adequate anesthesia or analgesia combined with sedation. After performing operation, the procedure must be clearly documented; the uterus, cervix, and genital tract must be explored to exclude rupture or lacerations, and to remove fetal bones. The self retaining catheter should be left in the bladder

for at least 10-14 days to prevent obstetric fistula formation. Third stage of labor should be managed actively to prevent post partum hemorrhage. The cause and prevention of the neglected obstructed labor and fetal demise must be fully explained to the patient and her family before discharge.

The aim of any fetal destructive operations is to reduce the size of the head, shoulder girdle or trunk of the dead fetus in order to achieve vaginal delivery. The methods include craniotomy, decapitation, cleidotomy, and evisceration. Craniotomy is the perforation of the fetal head (cranium), and is the commonest fetal destructive operation [25,26]. Cranioclastm (crushing of the cranium), and cephalotripsy (crushing of the whole head including the base of the skull) are now obsolete [27-29]. Craniotomy is indicated in hydrocephalus, retained after-coming head of a dead breech fetus, cephalopelvic disproportion with a dead fetus, and impacted malpresented dead fetus in mento-posterior and brow presentation. The sites of perforation include the anterior fontanelle or suture lines, roof of the mouth, foramen magnum, occipital bone behind the mastoid, orbit and frontal bone depending on the fetal presentations. Under adequate anesthesia or analgesia, the bladder is emptied, and the head is steadied by an assistant through suprapubic pressure. The Simpson's perforator or strong embryotomy scissor is held closed in the operator's hand that guides the tip to the site of perforation. The fetal skull is perforated with a Simpson's perforator up to the shoulders of the blades and opened widely, it is then closed and rotated through 90 degrees and opened again to produce a cruciate incision in the vault. The septa and brain substance is broken by inserting the closed perforator deep in the skull then opening the blades and rotating. Delivery of the fetus is facilitated by applying traction on the vulsella or Kocher's forceps that were clamped to the edges of the cranium to protect the maternal soft tissues from trauma.

The procedure described by Lister [26] commences with a cruciate incision on the fetal scalp and the lifting of the four flaps off the cranium. A sharp instrument such as a Mayo's scissors is then introduced into the fetal head through the most accessible suture line. The scissors is then retained in the fetal skull and opened repeatedly in all directions to facilitate evacuation of the brain tissue. When the cervix is up to 7cm dilated, the method described by St Georges can be used [30]. The steps are similar to those described by Lister. After emptying the brain tissue, two Kocher's forceps are clamped unto the incised scalp and suitable weights are tied to the handles with bandage. The patient's legs are removed from the lithotomy poles and rested on stools. The weights hanging from the forceps gently and effectively completes the delivery.

Decapitation is severing of the fetal neck from the trunk, and is indicated in neglected shoulder presentation with a hand prolapse, and locked twins. Under general anesthesia, the prolapsed arm is grasped to bring the neck within easier access. The decapitation hook, protected by the palm of the left hand, is passed up over the neck of fetus to sever it by sawing movement or to causing fracture dislocation of the cervical spines, and then the soft tissue is cut with the tip of an embryotomy scissors. The trunk is delivered first by traction on the arm, and the head is then delivered by hooking a finger into the fetal mouth. Cleidotomy is division of one or both clavicles with an embryotomy scissors to reduce the biacromial diameter in shoulder dystocia with a dead fetus in order to affect vaginal delivery. Evisceration is performed by making large incision in the fetal

abdomen and/ or thorax with emryotomy scissors to evacuate its viscera and reduce its size, and allow vaginal delivery. The procedure is indicated in fetal ascites, and thoracic or abdominal tumors.

## Recommendations and Conclusion

The etiopathogenesis of neglected obstructed labor in the developing countries is multi-factorial and requires multi-disciplinary approach for its prevention. Quality maternity care should be free and universally accessible to every woman including those in the rural areas in the developing countries. The antenatal care and childbirth should be provided and supervised by skilled birth attendants for early detections and prompt managements or referrals of complicated pregnancies and childbirths. This requires increased production and even distribution of the skilled health personnel in the urban and rural areas, and the provision of social amenities and adequate security in these areas [12]. Emergency obstetric services should be accessible to every woman in labor without geographic or financial barriers. There should be good roads, efficient communications and transportations for prompt emergency obstetric referrals. Women empowerment through good care of the baby girls, female education, and abolition of sex discrimination against women are crucial in the elimination of poverty and ignorance among women. Provision of family planning, prevention of early marriage and teenage pregnancy can reduce prevalence of obstructed labor and its sequels. In the long run, quacks must be eliminated from the healthcare system in the developing countries as in the advanced countries before fetal destructive vaginal operations can be said to become obsolete. In conclusion, neglected obstructed labor with intrauterine infection and fetal death is still common in most developing countries, and until the above recommendations are implemented, fetal destructive vaginal operations will remain essential procedures in the prevention of maternal deaths in this region.

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