

# A Review of Obstructed Labour due to Abnormal Presentation of Foetus with Special Reference to Mudhagarbha

Ganpatye Gouri<sup>1</sup>, Sakharkar Bhagyashri<sup>2</sup>

<sup>1</sup>Associate Professor, Dept. of StrirogaPrasutiTantra, Sant Gajanan Maharaj Ayurvedic Medical, College, Mahagaon Maharashtra  
Email id – gurugouri[at]gmail.com

<sup>2</sup>Associate Professor, Dept. of ShalyaTantra, Sant GajananMaharajAyurvedic Medical College, Mahagaon. Maharashtra, India

**Abstract:** *Child birth is very important phase in the women's life. It is also called as rebirth of the women. Labour is said to be obstructed if the presenting part of the foetus cannot pass through the birth canal, despite of strong uterine contraction. It is more common in human than in primates, because the birth canal of woman is not straight and wide as in primates. The most common cause of obstructed labour is cephalo-pelvic disproportion i.e. mismatch between the fetal head and the mother's pelvic brim. Neglected obstructed labour is a major cause of both maternal and foetal morbidity and mortality. It was estimated to be the most disabling of all maternal conditions. In Ayurveda obstructed labour can be discussed under the Mudhagarbha. The concept of Mudhagarbha is described in various classical texts of Ayurveda. Especially Sushruta has given the detail account of Mudhagarbha explaining its causes, types and management both conservative and surgical. This implies the depth of knowledge of ancient day gynaecologists and surgeons.*

**Keywords:** *Mudhagarbha*, abnormal presentation of foetus, obstructed labour, CPD(cephalo-pelvic disproportion)

## 1. Introduction

**Definition** - Obstructed labour is also known as labour dystocia. It is when the baby cannot exit the pelvis during childbirth because of being physically blocked, despite the normal uterine contractions. This results in the death of the foetus due to hypoxia<sup>1</sup>. Obstructed labour ranked 41<sup>st</sup> in Global Burden of Death in 1990, representing 0.5% of the burden of all conditions and 22% of all maternal conditions. It was estimated to be the most disabling of all maternal conditions<sup>2</sup>. In Africa and Asia obstructed labour affects between two and five percentage of deliveries<sup>3</sup>

### Causes of obstructed labour-

The most common cause of obstructed labour is cephalo-pelvic disproportion i.e. CPD. It is a state where normal proportion between the size of foetus and the size of pelvis is disturbed. If not treated promptly, it can be fatal to both mother as well as foetus. Some causes of CPD include the following<sup>4</sup>

- 1) Contracted pelvis – in this condition the pelvis of the woman is smaller than the normal pelvic measurement(diameter)
- 2) Large sized baby- this may be due to gestational diabetes, post term pregnancies, multiparity, hydrocephalus or any other hereditary factors.
- 3) Abnormal fetal positions- baby is not in the typical head first position during delivery like breech presentation, transverse lie, shoulder presentation etc
- 4) Pelvic exostoses – this includes bony growths on the pelvis
- 5) Spondylolisthesis – this is a condition in which a bone in the spine slips out of its proper position onto the bone below.

### Complications of obstructed labour<sup>5</sup>–

- 1) Overdose of Pitocin (synthetic oxytocin) – physician may react by administering too much of Pitocin to speed up the delivery. This may cause excessive and traumatic contraction of the uterus harming the foetus inside
- 2) Prolonged labour – obstructed labour may take more time than the normal labour causing oxygen deprivation injuries to foetus like hypoxic ischemic encephalopathy, cerebral palsy and developmental delays. The trauma from continued labour may result in serious intracranial hemorrhages.
- 3) Shoulder dystocia – when CPD is present, the baby is likely to have shoulder dystocia injuries, including Erb's palsy or Klumpke's palsy
- 4) Umbilical cord compression – when there is decreased room in the uterus, the umbilical cord may get trapped causing oxygen deprivation

### Signs and symptoms of CPD<sup>6</sup>

One can suspect CPD if

- 1) The labour is lasting longer than the expected time
- 2) Uterine contractions are not strong enough to keep the labour moving forward
- 3) The dilation and thinning of the cervix is slow or not at all
- 4) The foetus head is not entering the pelvis
- 5) The foetus is not progressing through the birth canal.

### Diagnosing CPD<sup>7</sup>-

CPD is usually not diagnosed until the period of labour. But some investigations during antenatal period can diagnose the condition earlier. Now-a-days many diagnostic tools are available to detect the CPD which may help in early diagnosis and planning for the treatment. Some of these are as follows-

- 1) Pelvimetry by MRI – it can assess the dimension of the pelvis, determine the baby's position and examine the soft tissues of the mother and baby
- 2) Clinical pelvimetry- this technique is used to assess the size of the birth canal using the hands or a pelvimeter
- 3) Ultrasound – the head and body size of the baby is measured and compared with the standardized growth charts to determine the relative risk of CPD by the time of delivery.
- 4) X-ray or CT pelvimetry- it is used to determine the dimensions of the mother's pelvis and the diameter of baby's head.
- 2) *Pratikhura*: In this the foetus gets obstructed by its body presenting with head, hands and feet all together.
- 3) *Bijaka*: Foetus presented with one arm and head
- 4) *Parigha*: foetus lies like a bolt (horizontally) obstructing the orifice of vagina

#### Movements (*Gati*) of *mudhagarbha*.<sup>11</sup>

- 1) Some foetus descend into vaginal orifice with both the legs
- 2) Some present with one leg
- 3) Some present with both legs and body bent and the area of buttocks placed horizontally
- 4) Some present with the chest, flanks and back
- 5) Some present with the head bent towards the flanks and with one arm protruding
- 6) Some present with the head bent inward and both arms protruding
- 7) Some present with the middle part of the body together with arms, legs and head bent inwards
- 8) Some present with one arm protruding through the vaginal orifice and the other arm through the anus

In this way there are total 8 kinds of movements of obstructed foetus

#### Complications of *mudhagarbha*<sup>12</sup>

- 1) Complications in mother – the woman shakes her head vigorously, her body becomes cold and she loses the sensation of shyness. There is appearance of prominent blue veins on her body. It may lead to the death of mother
- 2) Complications in foetus – it will ultimately lead to the death of foetus which is represented by the following signs and symptoms – loss of movement of the foetus, cessation of the labour pain, appearance of bad breath in woman accompanied by the pain in abdomen.

#### Treatment of *Mudhagarbha*<sup>13</sup>

Removing the obstructed foetus is the most difficult procedure. Hence it should be done by the skilful physician and surgeon and also while doing any procedure the permission of the husband should be obtained

#### General Principle (Non-invasive and Invasive)

- 1) Extraction of the foetus – when the foetus is alive, attempts are made to remove it. If it is difficult to do so, expelling hymns from *athervaveda* are chanted so as to be heard by the mother
- 2) Physical manipulation – when the foetus is found dead, the woman should be placed in knee chest position, then physician should lubricate his hand and introduce it into the vagina and try to pull the foetus out. Different techniques of manipulation should be used for different types of *mudhagarbha* for eg –
  - The foetus presenting with legs should be pulled downwards
  - If one leg is prolapsing and the other leg is bent, then the bent leg should be straightened and foetus pulled out
  - If the foetus is coming out by the buttock (breech), then the buttocks should be pushed up, legs extended and then pulled out
  - If the foetus is coming obliquely, like a door bolt (transverse presentation), then the lower half of

#### Management<sup>8</sup>–

The goal of the treatment is to have a safe delivery sparing the life of both foetus and mother. Treatment varies depending upon the severity and the time of diagnosis. If it is severe and diagnosed early, a planned C-section is done. In other cases, the treatment is to continue with the labour. In some cases CPD may be treated with symphysiotomy i.e. the surgical division of pubic cartilage or an emergency C-section.

- 1) **Trial of labour** – in some cases it is tried to deliver the foetus normally by vaginal path. It is done by closely monitoring the uterine contraction, foetus progress in birth canal, foetus heart rate, confirmation of foetus position with vaginal exam etc. during the trial of labour different positions are given to the mother to open up the pelvis and move the labour, for ex. Sitting, squatting, changing sides, going on hands and knees, etc. if labour continues, forceps or a vacuum is used to help the foetus out..
- 2) **Caesarean section** – if the trial of labour fails due to ineffective contraction, slow dilation and effacement, no descent or foetal distress, then C-section will be needed

#### Obstructed labour in Ayurveda Literature –

The word *mudha* is derived from “*muh*” *dhatui*.e to become stupefied or swooned, going in wrong direction and become lazy. Meaning of *mudha* is the obstructed movement as given by *Bhavamisra* and abnormal along with obstructed movement as given by *Madhukosa* commentary. The definition given by *Sushruta* and *Vagbhata* actually includes almost all the conditions of obstructed labour described today.

#### Aetiology of *Mudhagarbha*

Woman indulging in too much copulation, travelling in vehicles, riding on animals, jumping,, falling from heights, assaults, running, improper way of lying and sitting, suppression of natural urges, diseases like diarrhoea, vomiting etc are the causes due to which fetus gets detached from its bonds, oversteps the uterus and descends into the spaces amongst the liver, spleen and produces movements in the abdomen of the woman. The *apanavayubegins* move in abnormal way producing pain in flanks, upper region of urinary bladder, abdomen and vagina, retention of urine etc. causing expulsion of the premature foetus accompanied with bleeding per vaginum<sup>9</sup>.

#### Types of *Mudhagarbha*<sup>10</sup>

- 1) *Kila* or *sankilaka*: The foetus presenting with its arms, head and legs upwards.

the body should be pushed up, the upper half pulled down into the delivery canal and then pulled out

- If the foetus is presenting with its flanks, then its head and shoulder be pulled down, head brought into the delivery canal and then pulled out
- If foetus is presenting with both the arms, the shoulder should be pushed up, the head brought down and pulled out

The last two types of *mudhagarbha* are impossible to manage by these manipulation techniques, hence surgical intervention is done for their management

- 3) Surgical intervention – it should only be done in last two types of *mudhagarbha* or in cases where the foetus is dead. The living foetus should never be treated with surgical intervention.

After giving courage to the lady, the head of the foetus should be punctured with *mandalagrashastra* or *angulishastra* then skull is squeezed, held by the hook and pulled out either by chest or axilla. If it is impossible to puncture the head, then the eye socket or cheek may be punctured and then pulled out. If the shoulders are obstructing then the arm may be cut at the shoulders and foetus pulled out. If the abdomen of the foetus is bloated by the accumulation of gas, the abdomen should be cut open, intestine manipulated and then foetus is pulled out. If it is obstructed by the hips, then the flat bones of the hips should be cut and foetus is removed.

#### Emergency treatment<sup>14</sup>

According to *Susruta*, in a woman who has died during labour, if quivering of abdomen still persists, the abdomen should immediately be opened and live foetus should be extracted.

## 2. Discussion

CPD can be firmly correlated with *mudhagarbh* mentioned in classical Ayurveda texts, which was the prime cause of maternal and foetal death during intra and post-partum time in ancient time

Different functions of uterus are controlled by Vayu, especially apanvayu. Here we can divide the causes of *mudhagarbh* in two categories.

- 1) Anatomical causes (abnormal shapes of shroni / fetal head causing CPD )
- 2) Physiological causes (Vitiatedapanvayu especially prasutimarut )

Now a days for safer outcome CPD cases are treated surgically i.e by Lower segment Caesarean Section.

Normally, fetal lie and presentation can be seen as follows -

Cephalic - 96.8%

Breech - 2.8 %

Transverse lie - 0.3 %

Compound 0.1 %

Face - 0.05 %

Brow - 0.01 %

Out of this, Cephalic presentation is most common.

In ancient days, most of the deliveries were home deliveries. The modern obstetrics takes the help of developed

diagnostic techniques and advanced surgical procedures to treat the obstructed labour. Moreover they have the developed branch of anaesthesia to perform the surgical procedures safely. In ancient time there was lack of all these facilities and techniques still there were knowledgeable and skilled physicians and surgeons to handle the cases of obstructed labour. They had a fair knowledge of abnormal position of foetus and different manipulation techniques to manage these conditions. Also the basic principle of taking the consent of the guardian in case of patients who are not in the condition to choose the treatment option is emphasised in the treatment of *mudhagarbha*. Never the less the base of c- section is also derived from the management of *mudhagarbha* which was indicated in that era only if the mother has died during labour with the alive foetus inside. As the branch of anaesthesia is developed now-a-days surgeon can perform c-section even on the live mother and thus it has made the management of obstructed labour easier than the ancient time.

## 3. Conclusion

Ayurveda has the unique concept of obstructed labour which is termed as *mudhagarbha*. The concept of *mudhagarbha* described in Ayurveda alongwith its management is very much logical. It has not only given the concept of informed consent but also the idea of c-section which are the basics of today's surgical and obstetrics field. Detail use of instruments while extraction of dead fetus throws light on the developed obstetrical practices in the ancient area.

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