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# FETAL NECK MASS AS A CAUSE OF OBSTRUCTED LABOUR - AN ANAESTHESIOLOGIST'S AND OBSTETRICIAN'S NIGHTMARE

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**ABSTRACT :** Fetal neck masses cause a nightmare for obstetrician and anaesthesiologist when delivery is conducted. The techniques and methods of the delivery vary with experience of the surgeon and it is a real emergency when there is an obstruction and foetus is not delivered in time. It may cause hypoxia and cardiac arrest or aspiration to the baby to be delivered. Appropriate experienced team of obstetrician, anaesthesiologist and neonatologist is required to conduct these deliveries. Giant fetal mass is most common indication where Ex-utero intrapartum treatment can be done in experienced hands. Here we present a case where a giant neck mass was delivered by turning the foetus to breech position and was delivered smoothly.

**KEY WORDS :** Fetal neck mass, Exit procedure, Caesarean section

## INTRODUCTION

Delivery of foetus with large neck mass is a nightmare for both obstetrician and anaesthesiologists. Large neck masses in the foetus can lead to difficulty in the delivery and the anaesthesia technique may vary according to the size of the neck mass. Generally, neck masses in children fall into 1 of 3 categories: congenital, inflammatory, or neoplastic. 1 Although malignancies do occur, most neck masses in children are benign in nature. Large foetal neck masses can make it difficult or impossible to secure airways at birth, with associated risks of hypoxia, brain injury, and death.[2] The delivery of foetus causes obstruction and the vaginal delivery may become very difficult. Also, the delivery through caesarean section is a difficult task and anaesthesia technique may vary in these types of cases. [1]

Here we discuss a rare case of massive cystic hygroma in the foetus and the difficulties faced in the delivery of a foetus with anaesthesia challenges are discussed here.

## CASE REPORT

A 28-year-old, G3P2L2 at term (37 weeks) was admitted in the obstetric ward of a tertiary hospital of north India in emergency area. The chief complains were labour pains and leaking per vaginum for 12 hours. The patient was dehydrated and exhausted. The pulse rate was 110/mt. and BP was 150/100 mm Hg; respiratory rate was 19/minute and was afebrile. The per abdomen size uterus, with lower uterine segment over stretched with Bandl's ring was observed. The fetal heart rate was 156/min., regular, uterine contractions of 35-40 sec duration occurring at 1 min. interval. Per vaginum examination revealed dryness, loose hanging cervix and edematous 8 cms dilated caput ++, cephalic at -3 station. Pelvis was gynecoid. The investigations showed Hb 9 gm%, blood group A+ve. The patient was immediately shifted to operation theatre for obstructed labour. On searching the previous ANC checkups, there was no ultrasound scan available and the patient was taken for emergency caesarean.

Detailed quick pre-anaesthetic checkup was done on the operation table that revealed tachycardia and hypertension of the mother. The history revealed nothing significant and the patient was fasted for 5 hours. Adequate blood units were arranged and appropriate consent was obtained. The patient was scheduled for spinal anaesthesia in view of 5 hours fasting and the drugs for general anaesthesia were made ready.

Intravenous cannulation was done with an 18 guage i.v cannula. Preloading was done with normal saline @10 ml/kg and oxygen was started. Senior most anaesthesiologist administered spinal anaesthesia in a single prick after achieving asepsis and with appropriate spinal space identification. Total of 2 ml. of 0.5% bupivacaine heavy was given at L3-L4 intervertebral space after receiving csf using 25G spinal needle. Adequate block till T6 was obtained and lower segment caesarean section was started. On opening the lower abdomen, it was over stretched and myometrium thinned out. When the uterus was opened by the obstetrician, it was a huge dismay. A large cystic swelling was observed in the neck region and the baby was delivered as breech instead of normal method. The technique was changed by obstetrician at that moment during delivery of baby. The baby head was stuck for 5-6 seconds and finally delivered by breech delivery. The APGAR score was 9/10 and 2.8 kg male baby cried in a while. A 20x 14 cm size cystic swelling was seen on left side of neck which was probable cause of obstruction. There were no visible veins or pulsations over the swelling and it was translucent. (Figure-1) A differential diagnosis of teratoma neck / cystic hygroma was made and the baby was transferred to the paediatric surgery unit for further management. The final diagnosis could not be made as the baby was not operated upon due to parents' refusal of consent. Translucency test was positive for cystic hygroma and most probable diagnosis was giant cystic hygroma of the fetal neck. Caesarean section was completed and abdomen stitched. The mother's postoperative surgery was uneventful.



Figure 1: showing the foetus delivered

The patient, both mother and child, were managed and they were discharged home after 7 days of hospitalization. The patient did not follow up in the hospital further.

**DISCUSSION**

Large foetal neck masses can present a major challenge to securing an airway at birth, with associated risks of hypoxia, brain injury, and death.` The authors report a case of a giant neck mass, diagnosed in a foetus of 37 weeks, delivered through caesarean section but with change of technique of delivery of foetus. This obstructed labour was unanticipated and in emergency LSCS and in unbooked referred patient in obstetric emergency area. The anaesthesia was planned for regional anaesthesia because of anticipated full stomach and the safety of patient was kept in the mind. Although the foetal heart rate was more and thus senior most anaesthesiologist administered the anaesthesia in the patient. The senior obstetrician who had more than 20 years experience conducted the delivery (LSCS) where the normal technique of baby out was abandoned due to obstruction of head was anticipated after abdominal incision. The baby was turned to breech and then delivered breech with increase in the incision.

There have been reports of obstructed labour due to congenital swellings of the foetal neck. Huge swellings can be congenital teratoma or cystic hygroma.[3] This patient most probably had cystic hygroma in the fetal neck and it was larger in size. This cystic hygroma is due to dysplasia arising from the sequestration of lymphatic tissue that fails to communicate with the lymphatic tree. It is present in the posterolateral aspect of neck.[2] The antenatal diagnosis of these swelling can be made by ultrasound and the delivery has to be done with utmost care not to injure the foetus. The neonatal complications may arise due to tracheal compression and it should be dealt with as the emergency LSCS. The surgical management needs a team effort with obstetrician, anaesthesiologist and neonatologist. These cases if are already anticipated then these need multi-disciplinary approach as a team work. Patients' counselling is another component of management. The neonatal outcome depends on the expertise of the surgeon or obstetrician , anaesthesiologist foresightedness and skills of management of such patients and neonatologists

alertness in the fast management in resuscitation if required. The appropriate and adequate equipment may be required at that moment and the skill of its use is equally important.

Fortunately, according to the present set up the delivery can be conducted after conversion to breech otherwise Ex utero Intrapartum Treatment (EXIT) Procedure would have been a viable choice keeping in view that the expertise of doing this procedure is there or not.[4]

It is a rare and high-risk operation done before birth to help a baby breathe once born. This procedure ensures that the baby can get air to their lungs, while still being connected to the placenta and supported by their mother. It's typically done for babies in the uterus who have problems with their airways or the lower respiratory system (the parts of the body involved in breathing). The main goal of the procedure is to make sure the baby can breathe during a Caesarean section before the umbilical cord is cut. This allows obstetricians' to use the mother's blood supply to support the baby during the procedure.[4] The most common indication for an EXIT procedure is due to a growth in the neck area. Like in this patient but it needs expertise to conduct through this technique. Other reasons may include problems with the baby's diaphragm or respiratory system, or in rare cases, needing to separate conjoined twins.

In general, the procedure involves making an incision in the mother's abdomen and uterus and safely delivering the baby's head, neck, and upper body until the problem area is exposed. The necessary procedure is then done, which can range from a simple intubation to removing the problematic growth. Once the surgery is complete, the baby is safely delivered. This was difficult to conduct in this case as the patient was obstructed due to huge swelling of the neck . It was not possible to take neck out with head during the conduct of delivery in LSCS.

In well-equipped advanced centres this could have been treated through ex utero intrapartum treatment procedure to assist in securing an airway followed by excision of the mass on the day after delivery. A multidisciplinary team approach, combined with an accurate prenatal diagnosis obtained through foetal ultrasound magnetic resonance imaging examination, should have been the key to a successful outcome. The role of the paediatric surgeon could be initially to secure the airways through airway life saving skills followed by excision of the mass when the infant's vital parameters had been stabilized. Open discussions with the family and all involved care teams need to happen regularly in these situations. Our patient was not followed up as the patient did not visit again.

Conclusion

Delivery of foetus with giant neck mass needs experience, expertise and multidisciplinary approach. Obstetrician, anaesthesiologist and neonatologist as a team with prenatal diagnosis of type of neck swelling plays an important role in safe outcome of both mother and foetus. The EXIT procedure is another approach if the neck swelling is smaller and needs expertise in performing this. An expert obstetrician can change the techniques during the delivery of foetus and can perform the safe delivery .

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