

Anesthetic Considerations During Prolonged Fetal Extraction: A Case Report

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Background

- Impacted fetal head during cesarean section is a potentially devastating cause of difficult extraction occurring in 1.5% of all surgical deliveries.¹
- Difficult extractions are associated with increased risk of maternal and fetal hemorrhage, traumatic injury, and fetal asphyxia. Risk factors include prolonged labor, malposition, macrosomia, obesity, and failed operative deliveries.²

Case Report

- 23 year old female who presented at 37 weeks gestation for induction of labor secondary to gestational hypertension with a pregnancy notable for suspected fetal macrosomia.
- Labor epidural was successfully placed after induction began.
- Urgent cesarean section was called 12 hours later for arrest of descent and category II fetal heart tracing.
- Fetal pillow was placed in anticipation of difficult extraction and incision was made under epidural anesthesia.
- Total extraction time of 14 minutes during which hand-push, reverse breech and extension of uterine incision was attempted by obstetricians.
- Anesthetic interventions included nitroglycerin (3 mins), followed by conversion to general anesthetic with inhalation agents and paralytics (9 mins).
- Estimated blood loss was 1700 and initial hypotension was managed with albumin and crystalloid infusions. Pain was well controlled with epidural morphine and postoperative transversus abdominis plane block.
- Patient ultimately discharged in stable condition on POD 4 and infant was discharged from the NICU on DOL 19. No current concerns for longstanding neurologic injury.

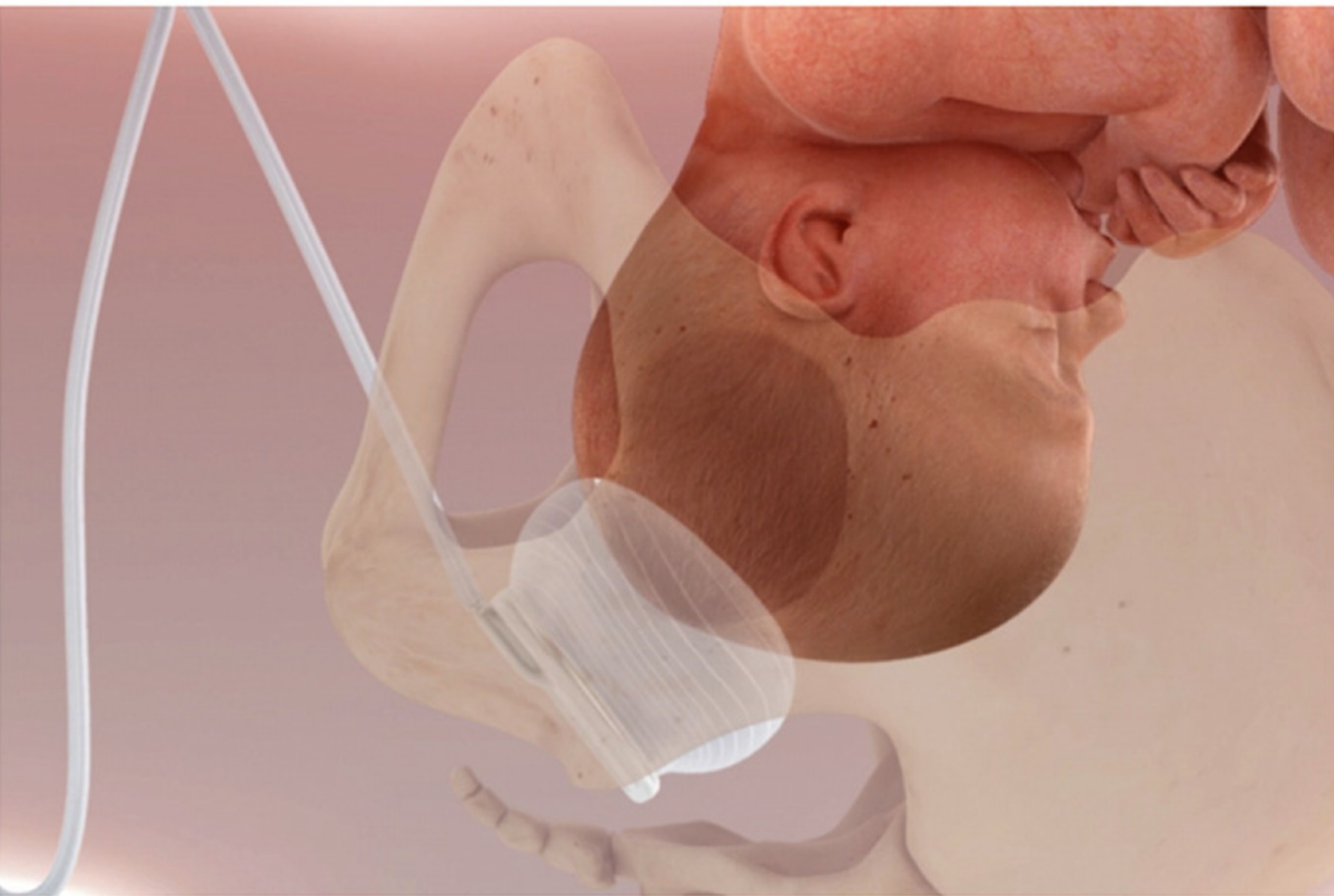


Figure 1: Inflated fetal pillow ⁶

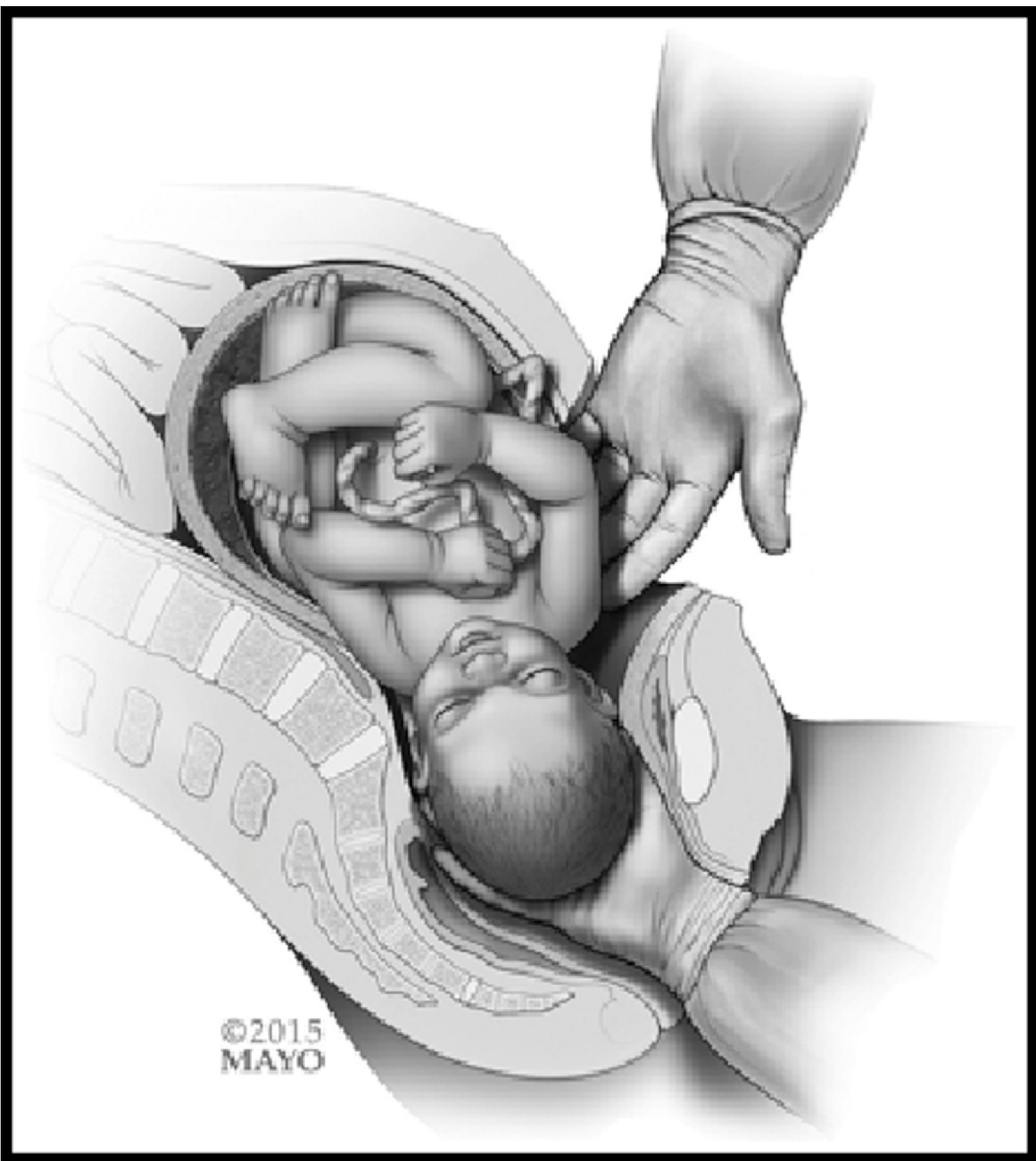


Figure 2: Push technique⁵

Discussion Points

- Successful management of a difficult fetal extraction involves both surgical and anesthetic intervention.
- Tools utilized in difficult extractions such as the fetal pillow/head elevators as well as surgical approaches such as hand-push technique, and reverse-breech method are well described in obstetric literature.^{3,4}
- Medication and anesthetic adjuncts aimed at uterine relaxation such as nitroglycerin, volatile anesthetics, and paralytics may provide more optimal conditions for extraction.
- Anesthetic management should consider potential complications such as maternal hemorrhage and increased
 - Additional IV access, invasive blood pressure monitoring, aggressive resuscitation.
 - Regional techniques for additional pain control.

Conclusion

- Anesthetic interventions during a difficult fetal extraction are focused on improving uterine relaxation and improving surgical conditions.
- Anticipating complications such as hemorrhage and pain is an important part of any prolonged extraction.

References

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