Anaesthesia management in foetus-ex-fetu

INTRODUCTION

Conjoined twins is a rare entity with incidence of 1 in 50,000 to 1 in 200,000.[1] Foetus in fetu[2] is another congenital abnormality in which a nonviable, parasitic foetus grows within the body of its twin. We came across a similar but an extremely rare condition in which a malformed foetus was attached to a live foetus externally. We called it 'Fetus ex fetu'. Foetus ex fetu in craniopagus position can be a great challenge to anaesthetist due to difficult airway.

CASE REPORT

On 1st day of his life, this 3.4 kg male neonate was admitted to Neonatal Intensive Care Unit (NICU) with a foetus like mass attached to his face. The mass looked multilobulated with roughly 18 cm length, 7-8 cm diameter and was attached to his nasal region with 2/5th of it extending above bridge of nose on forehead [Figure 1]. Remaining part of it had engulfed the nose, upper lip, and gums almost completely and was hanging down to middle of chest. The mass was slightly mobile and could be lifted off the face so that the mouth could be uncovered partly. The baby was being nursed in the lateral position. Feeding was almost impossible.

This child had no other congenital anomalies and breathing orally. Eyes were widely placed but normal. The mass had limb buds in respective

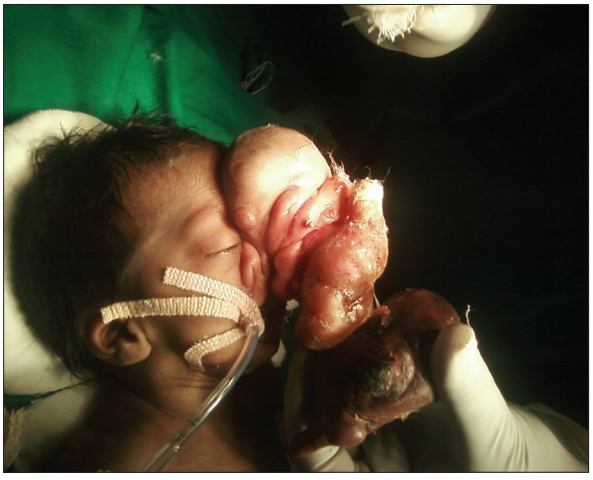

Figure 1: A nonviable foetus attached to a normal foetus like a craniopagus

positions, palpable cranium, pelvic bones and femur bilaterally but no signs of cardiac activity. X-ray showed no bony attachment between them. Ultrasonography and 2-D echo were within normal limits. Intravenous maintenance fluid was started through a 24 G i.v. line.

In operation theatre, the baby was placed supine with an assistant constantly lifting the mass off the face and flushing O_2 with Jackson Ree's (JR) circuit near patient's mouth continuously. SpO_2 probe, electrocardiogram (ECG) was connected. Paediatric intubation equipments and laryngeal mask airway (LMA) of size 1.0 were kept ready. Neonatal tracheostomy set with tube no. (2.5 and 3) was also kept ready with surgeon scrubbed to tackle the emergency. Premedication—Inj. Atropine 0.06 mg, Inj. Ondansetron 0.3 mg, Inj. Fentanyl 6 mcg and Inj. Midazolam 0.1 mg. Inj. Ketamine 3.0 mg was injected slowly watching the spontaneous breathing movements. A check laryngoscopy was done using Miller blade by pulling the mass away as far as possible. Cormack-Lehane grade 3 view was obtained. Then LMA of 1.0 no. was successfully inserted. The patient was ventilated with O_2 and Sevoflurane on JR-circuit monitoring SpO_2 and $EtCO_2$. Anaesthetic plane was deepened with Inj. Propofol and Inj. Atracurium. LMA was removed after ventilating for 3 min, so that a definite airway is secured to facilitate surgery. The traction on the mass was continued and laryngoscope was inserted. Although laryngoscopy was difficult, Cormack-Lehane grade II could be obtained by external laryngeal pressure given by an assistant. Trachea Intubated with Portex ETT 3.0 mm and confirmed by $EtCO_2$. Anaesthesia was maintained using N_2O and O_2 and Inj. Atracurium. A Paracetamol suppository of 80 mg was inserted. Surgical area draped carefully to avoid kinking of the tube. Surgery was uneventful. Trachea was extubated after reversal of neuromuscular blockade. Postoperative period was uneventful. The child was started on breast feeds on second postoperative day and was discharged from hospital on 7th day. Regular follow up for 6 months was normal.

DISCUSSION

Highest incidence of conjoint twins is encountered in humans. Conjoined twinning happens when the twinning event occurs at about the primitive streak stage of development, at about 13-14 days after fertilization and is associated with the monoamniotic monochorionic type of placentation.[3] Preoperative diagnosis in this case was based on clinical findings viz rudimentary eyes, upper and lower limbs and head. Radiological findings such as the presence of cranium, femurs and vertebrae like structures were confirmatory.

Surgery was urgent because breathing and feeding was difficult and the malformed foetus was dead.[1] This was also a privilege compared to other conjoint twins where sharing of multiple organs and transfer of anaesthetic through blood are core issues. Still, airway management was a crucial issue, more difficult than the surgery itself.

We were facing two problems. First: Whether we would get adequate mouth opening and space to introduce the laryngoscope? And second was how to maintain ventilation between induction and intubation.

Mask ventilation was impossible which ruled out possibility of inhalational induction. Oral fibreoptic intubation was an option but proper sized fibrescope was not available. So, intravenous induction was the choice.

We used Ketamine[4] for sedation to maintain spontaneous breathing as it is known to stimulate the respiration. Pulling the mass away could uncover the mouth partly. This important observation provided the idea of LMA[5,6] insertion before paralyzing the patient for intubation. The classic LMA is recommended as a safe airway device in many such indications.[7] As ventilation was possible, so muscle relaxants were used. LMA had to be removed as fixing it in position was difficult and chances of its displacement and kinking during surgical manipulations were high. Also, inserting a throat pack to protect trachea was easier with ETT.

Check laryngoscopy[8] helped us to use muscle relaxants to facilitate tracheal intubation prevent a possible laryngospasm. If we had failed in intubation, LMA could be resumed till mass excision. Emergency tracheostomy preparations ready as a part of contingency plan.

In conclusion, difficult paediatric airway like foetus ex fetu can be tackled with careful airway assessment, planning with anticipation and proper use of equipments and procedures like check laryngoscopy.

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REFERENCES

1. Spitz L. Surgery for conjoined twins. Ann R Coll Surg Engl 2003;85:230-5.
2. Borges E, Lim-Dunham JE, Vade A. Fetus in fetu appearing as a prenatal neck mass. J Ultrasound Med 2005;24:1313-6.
3. Kaufman MH. The embryology of conjoined twins. Childs Nerv Syst 2004;20:508-25.
4. Reves JG, Glass P, Lubarsky DA, McEvoy MD, Ruiz RM. Intravenous Anesthetics. In: Miller RD, editor. 7th ed. Philadelphia: Elsevier Churchill Livingstone; 2009. p. 1611-21.
5. Walker RW. The laryngeal mask airway in the difficult paediatric airway: An assessment of positioning and use in fibreopticintubation. Pediatr Anesth 2000;10:53-8.
6. Ghai B, Malkar IK, Bhardwaj N, Wig J. Laryngeal mask airway insertion in children: Comparison between rotational, lateral and standard technique. Paediatr Anaesth 2008;18:308-12.
7. Höhne C, Haack M, Machotta A, Kaisers U. Airway management in pediatric anesthesia. Anaesthesist 2006;55:809-19.
8. Mishra SK, Kavitha J, Kumaravel S, Lalatendu KK. Anesthestic management of a newborn for pedunculatedteratoma of oral cavity. Anesth Essays Res 2010;4:124-5.

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