

TCI Remifentanil for Fetal Immobilization And Analgesia During Ex-utero Intrapartum (EXIT) Surgical Airway For Fetal With Congenital High Airway Obstruction Syndrome (CHAOS).

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Abstract

Case Report:

A fetal (30 weeks of gestation) diagnosed by MRI to have congenital upper airway obstruction (CHAOS). Initial ultrasound of the fetal revealed a bilateral lung atresia with area of stenotic trachea with obvious dilatation distal to the stenotic trachea. Fetal MRI revealed a complete gap (approximately measuring 0.7 – 0.8cm) seen in fluid-filled, high signal airway at 0.5cm below the tip of epiglottis (possible of upper trachea or larynx) consistent with obstruction. Given the severe anomaly of the upper airway, conventional delivery followed by airway manoeuvres and manipulation were thought to be the least favourable options. A multidisciplinary meeting with the paediatric anaesthesiologist, paediatric otolaryngologist, neonatologist, maternal and fetal medicine specialist, and the obstetric anaesthesia team, an EXIT procedure was planned.

Management performed:

A combination of sevoflurane (MAC 2-3) with target-controlled infusion of Remifentanil (0.2 ng/kg/min) was used to provide general anaesthesia and aiming for adequate uterine relaxation and maintaining maternal mean arterial pressure above 70mmHg for a stable uteroplacental perfusion. The airway manipulations and surgical tracheostomy of the fetal was lasted for almost 30 minutes and during the airway procedure the fetal did not show any movement or barking and the fetal remain apnoea. Throughout the airway procedure SPO2 of the fetal remain around 80% with no episode of bradycardia.

Conclusion reached:

Extensive placental transfer remifentanil with its ultra-short acting property and combining with targeted controlled infusion provide optimal condition for immobilization and analgesia during ex-utero intrapartum (EXIT) surgical airway for fetal with Congenital High Airway Obstruction Syndrome (CHAOS).