

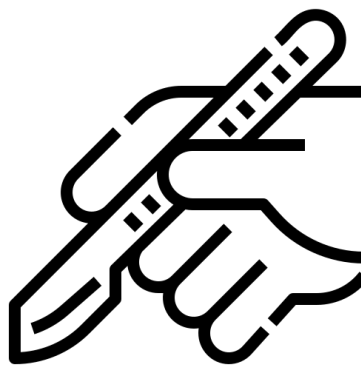
Navigating the Anesthetic Challenges of VACTERL Association: A Delicate Balancing Act

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CASE DESCRIPTION

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- Newborn male, 3340g
 - 39w6d
 - VACTERL association (anal atresia, tracheoesophageal fistula, renal abnormalities and polydactyly)

Surgery

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- Surgical repair of tracheoesophageal fistula type C + repair of imperforate anus
 - 2nd day of life

Pre-operative period

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- Multidisciplinary discussion
 - Risks of air leak, gastric and bowel distension following positive pressure ventilation in an already distended abdomen.

Intra-operative period

1°

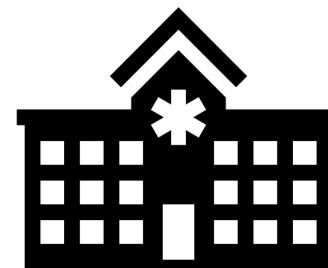
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- Diverting colostomy under regional anesthesia:
 - Ultrasound-guided single-shot caudal block + ketamine and dexmedetomidine sedation

2°

- Thorascopic TEF repair under general anesthesia:
 - Intubation under spontaneous ventilation
 - Maintenance with fentanyl, ketamine, dexmedetomidine

Several pauses to optimize ventilation and hemodynamics

Post-operative period

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- Transferred to NICU
 - Extubated and Initiated enteral feeding on the 7th postoperative day

DISCUSSION

VACTERL ASSOCIATION & ANESTHESIA

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- Variable anatomy and physiology that can complicate airway management and increase anesthetic risk.

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- Concurrent surgical correction of TEF and anal imperforation



Crucial to preserve spontaneous ventilation – the negative pressure redirects air influx towards the lungs rather than through the fistula.

Ultrasound caudal block + Intravenous sedation with dexmedetomidine and ketamine



Sedative and analgesic effects + preservation of airway reflexes and respiratory drive



Learning objective



In patients with tracheoesophageal fistula and anal imperforation, the combination of ketamine and dexmedetomidine along with regional anesthesia is a good alternative to avoid positive-pressure ventilation.

References:

Kinottenbelt G, Skinner A, Seefelder C. Tracheo-oesophageal fistula (TOF) and oesophageal atresia (OA). Best Pract Res Clin Anaesthesiol 2010;24:387-401
Anaesthesia recommendations for patients suffering from VACTERL Association. (2014, October). Orphan Anesthesia. <https://www.orphananesthesia.eu/en/rare-diseases/published-guidelines/vacterl-association/174-vacterl-association/file.html>