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Anaesthetic Management of Acute Supraglottic Airway Obstruction Post-Extubation in a Child Undergoing Cleft Palate Repair: A Case Report

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ABSTRACT

Cleft palate repair in infants presents significant anaesthetic challenges due to altered airway anatomy. We report a case of a 13-month-old female child (7.5 kg) with complete cleft palate and retrognathia who developed acute supraglottic airway obstruction immediately following extubation after palatoplasty. Anaesthesia was induced with ketamine and succinylcholine, and intubation was achieved using a Miller blade via the paraglossal approach after initial difficulty. Anaesthesia was maintained with oxygen, nitrous oxide, isoflurane, and atracurium. Post-extubation, the child developed desaturation and bradycardia due to tongue and floor-of-mouth edema, necessitating immediate re-intubation after administration of atropine and succinylcholine (1 mg/kg). The patient was electively ventilated and later extubated after resolution of edema. Prompt recognition and intervention ensured a favorable outcome

Keywords: cleft palate, paediatric airway, supraglottic edema, extubation, anaesthesia

INTRODUCTION

Cleft palate repair is associated with difficult airway management due to anatomical abnormalities such as retrognathia, large tongue, and distorted palatal architecture. The use of mouth gags during surgery can predispose to airway edema due to prolonged tissue compression. Post-extubation airway obstruction, although uncommon, can be life-threatening in infants and requires immediate recognition and intervention.

CASE REPORT

A 1-year-1-month-old female child weighing 7.5 kg with a history of complete cleft palate was scheduled for primary palatoplasty. The child had feeding difficulties with regurgitation and a history of recurrent upper respiratory tract infections; however, the last episode occurred several weeks prior, and she was afebrile at presentation.

On the day of surgery, identity and fasting status were confirmed, and preoperative auscultation was normal. The child was premedicated with intramuscular glycopyrrolate (0.025 mg/kg) and ketamine (5 mg/kg).

In the operating room, standard monitors were applied. The child was preoxygenated using a Jackson-Rees circuit, and a 24G intravenous cannula was secured. Intravenous midazolam (0.05 mg/kg) was administered, and anaesthesia was deepened using isoflurane. After confirming adequate ventilation, succinylcholine (2 mg/kg) was administered

Direct laryngoscopy using a Macintosh blade (size 1) failed to visualize the epiglottis. A second attempt using a Miller blade (size 1) via the right paraglossal approach facilitated successful intubation with a 4.0 mm internal diameter south polar endotracheal tube. Tube position was confirmed with auscultation and capnography.

Atracurium (0.5 mg/kg) was administered, and anaesthesia was maintained with oxygen, nitrous oxide, isoflurane, and intermittent doses of atracurium.

At the end of surgery, the child was extubated when fully awake. Immediately post-extubation, desaturation and bradycardia occurred due to airway edema. Atropine (0.02 mg/kg) and succinylcholine (1 mg/kg) were administered, and the child was re-intubated successfully.

The child was shifted to PICU and later extubated after resolution of edema.

DISCUSSION

Airway obstruction following cleft palate repair is uncommon but potentially fatal. The likely cause in this case was compression-induced edema due to prolonged use of a mouth gag. Prompt recognition and rapid pharmacological intervention are critical.

CONCLUSION

Acute supraglottic airway obstruction is a rare but serious complication following cleft palate repair. Vigilant monitoring and prompt airway intervention are essential.

Consent

Written informed consent was obtained from the patient's guardian.

Conflict of Interest

None declared

REFERENCES

N\A.