INTRODUCTION

- Adenotonsillectomy is a recognised treatment for paediatric obstructive sleep apnoea (OSA)\(^1\).
- Untreated, OSA is associated with complications including behavioural, metabolic and cardiovascular sequelae\(^2\).
- Recent literature suggests diminishing rates of success in children with paediatric obesity\(^3,4\).
- Paediatric obesity has reached epidemic levels, and its incidence continues to rise\(^5\).
- BMI Z-score (number of standard deviations above or below the mean) is used to stratify obesity in paediatric patients\(^6\).
- We sought to review the efficacy of adenotonsillectomy performed in patients diagnosed with extreme paediatric obesity.

METHODS

- Patients with a BMI Z-score of 3 or above and had undergone adenotonsillectomy for OSA were identified.
- Electronic notes including sleep study reports were analysed.

RESULTS

- Nine patients were referred to the obesity service with a BMI Z-score ≥3 (median Z-score 3.5) and had undergone adenotonsillectomy for OSA.
- Mean age at referral to the obesity clinic was 6.9 years.
- All nine patients were commenced on non-invasive ventilation pre-operatively, average age of commencement was 7.8 years.
- Four patients had an underlying medical cause for obesity, the remainder were secondary to lifestyle factors.
- No patients had an underlying craniofacial or neuromuscular disorder.
- Post-operatively, eight patients (89%) required on-going non-invasive ventilation (BIPAP or CPAP), with evidence of persistent OSA on post-operative sleep studies (Figure 1).

Figure 1 - Requirement for NIV Post- Adenotonsillectomy

[Diagram showing 11% Continued NIV for OSA and 89% NIV stopped]

DISCUSSION

The aim of adenotonsillectomy is to remove tissue that causes obstruction of airflow through the nasal and oral airways. In obese children obstruction of the airway still persists following surgery, suggesting that increased soft tissue surrounding the airway is responsible for persistent obstruction. Management of OSA in this group may therefore involve a combination of NIV to prevent long-term sequelae, specialist management of the underlying obesity, surgical intervention (if indicated) and close outpatient monitoring.

Given the disappointing success rate of adenotonsillectomy in the obese population, it is important to counsel the parents/caregivers during the consenting period. It is crucial to explain that adenotonsillectomy may improve OSA, it is unlikely remove the need for ongoing use of NIV.

CONCLUSION

- Obese patients failed to demonstrate the same response to adenotonsillectomy compared to non-obese counterparts.
- In patients with extreme paediatric obesity, adenotonsillectomy does not remove the need for use of NIV.
- Treatment of OSA in this patient group requires expert management of obesity alongside any potential surgical intervention.
- Adenotonsillectomy alone is not efficacious in treating OSA, and may influence the decision to proceed with surgery.

REFERENCES


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