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Coblation Intracapsular Tonsillectomy Outcomes in Paediatric Obstructive Sleep Disordered Breathing: A Singapore Study

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Aim

This study aims to assess the clinical efficacy of coblator intracapsular tonsillectomy (CIT) in paediatric patients with Obstructive Sleep Disordered Breathing (oSDB), emphasizing improved value-based healthcare outcomes.

Background

Paediatric oSDB often requires tonsillectomy as a primary surgical intervention.

Traditionally, extracapsular tonsillectomy is utilized in Singapore. However, CIT (fig 1a, 1b) has emerged as a promising alternative, showing reduced post-operative morbidity while effectively treating oSDB.

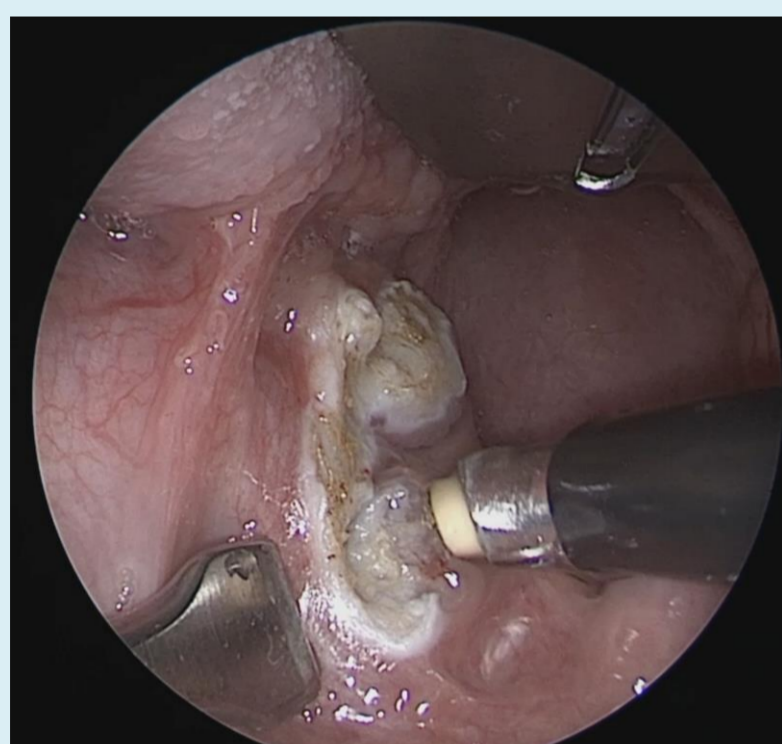


Fig 1a. Use of coblator wand for CIT

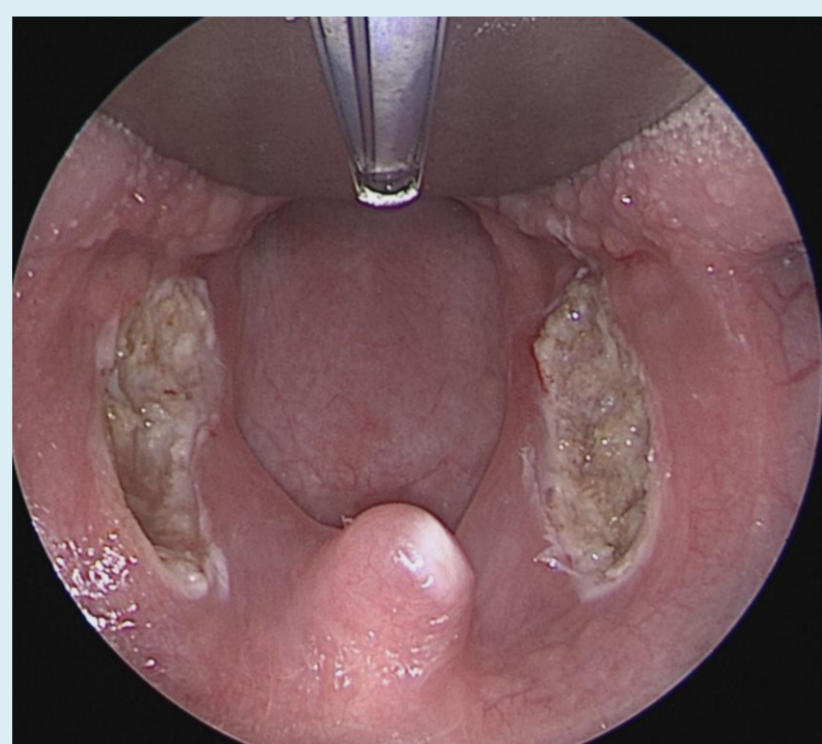


Fig 1b. Post-operative surgical bed with no charring or bleeding

Methods

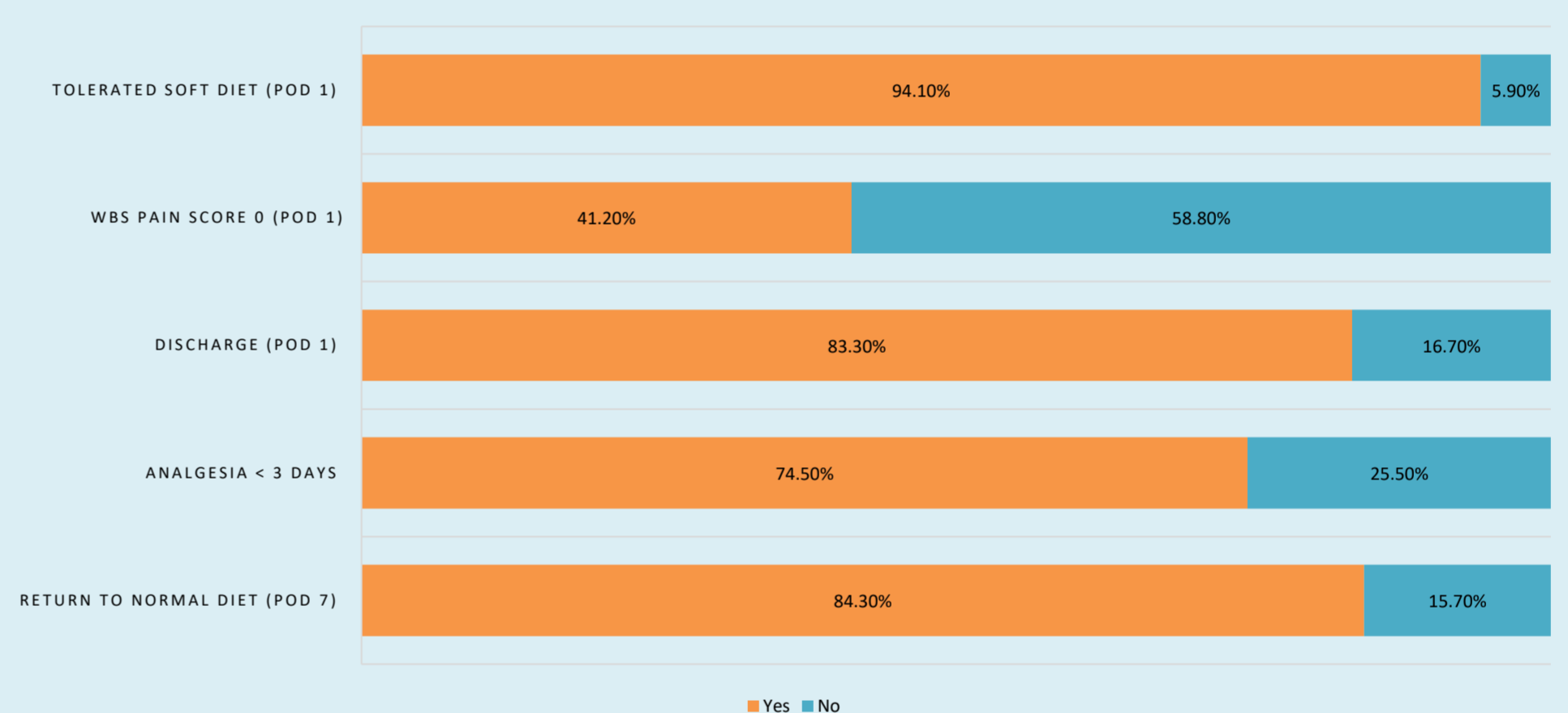
This is a single-centre prospective study of 102 pediatric patients aged between 2-17 years with oSDB who underwent CIT between April 2023 and April 2024. Exclusion criteria are history of recurrent tonsillitis, bleeding disorders, prior tonsil surgery, or suspected tonsil malignancy. Primary outcome measures encompass peri-operative haemorrhage, complications requiring intervention, and disease-specific quality of life (QOL), measured via OSA-18 QOL questionnaire. Secondary outcome measures include post-operative pain control, return to normal diet, and overall impact on value-based care. Statistical analysis was performed with SPSS v29.0 with significance set at $p < 0.05$.

Results

POD 1-7 outcomes (Fig 2)

- 83.3% (n=85) of patients were discharged on POD 1
- Wong Baker Faces Pain Scores averaged 1.97, with 41.2% (n=42) reporting a score of 0 by POD 1
- By POD 1, 94.1% (n=96) tolerated a soft diet, with 84.3% (n=86) returning to a normal diet by POD 7
- 74.5% (n=76) of patients did not require analgesia beyond 3 days
- **No complications were recorded**

FIG 2. CIT OUTCOMES



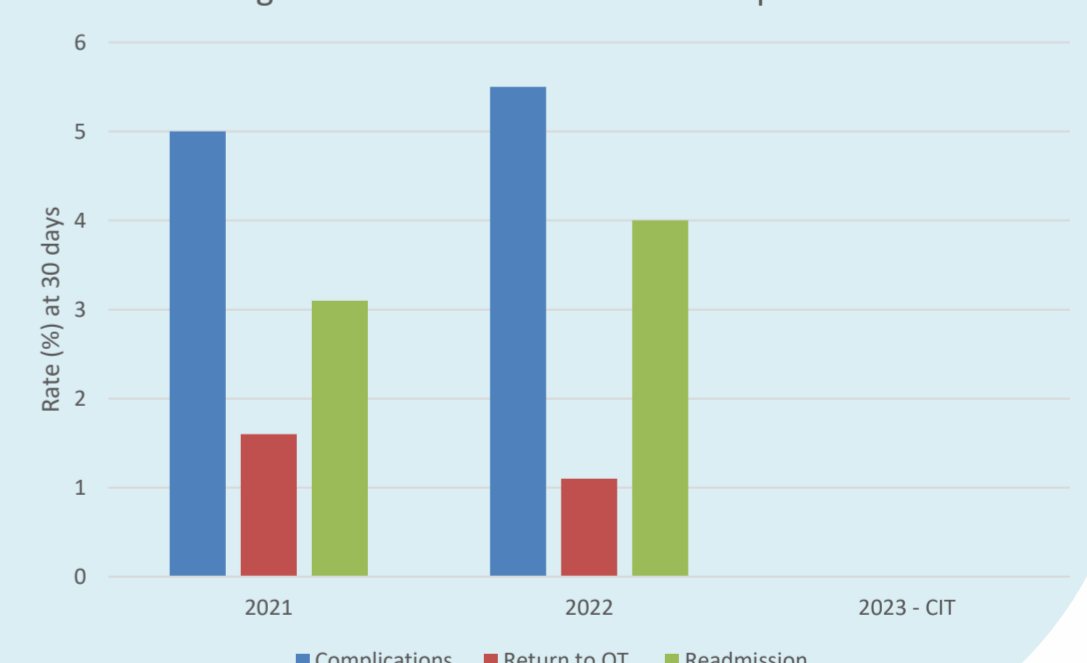
POD 3 month outcomes

- 96.5% (n=83) patients had minimal to no snoring after CIT
- No significant tonsil regrowth/tonsillitis was reported
- Overall, patients experienced improved QOL, reflected by enhanced OSA 18 QOL survey scores ($z = -7.33, p < 0.001$)

Value-Based Outcomes

Compared to previous years, the implementation of CIT has seen a significant reduction in 30-day complications, return to OT and readmissions (Fig 3).

Fig 3. Value-Based Healthcare Comparison



Conclusion

This study suggests optimal healthcare delivery and effective value-based care outcomes with CIT. Patients experienced minimal pain, good post-operative QOL, short hospital stays and symptom resolution after surgery.