



Editor:

Wannakamon Panyarak,
Chiang Mai University, Thailand.

Received: March 28, 2023

Revised: May 18, 2023

Accepted: September 20, 2023

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Comparison of the Upper Pharyngeal Airway in Thai Children With or Without Unilateral Cleft Lip and Palate in the Supine Position

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Abstract

Objectives: This study aimed to evaluate differences in the upper pharyngeal airway morphology between Thai children with repaired unilateral cleft lip and palate (UCLP) and Thai non-cleft children.

Methods: This prospective study used cone beam computed tomography (CBCT) and polysomnography (PSG) studies. The subjects were 34 children with UCLP (21 males and 13 females; mean age 8.94±1.87); and 32 non-cleft children (20 males and 12 females; mean age 10.03±1.91). The Dolphin imaging software measured the volume and the most constricted cross-sectional airway (version 11.7 premium).

Results: An independent sample t-test showed that the differences between groups were significant. The means of oropharyngeal ($p=0.003$), hypopharyngeal ($p=0.020$), and total volume ($p=0.013$) in UCLP children were lower than those in non-cleft children. Furthermore, the most constricted axial area of the oropharyngeal airway in UCLP children was narrower than that in non-cleft children ($p=0.004$).

Conclusions: The volume and most constricted axial area of the upper pharyngeal airway in Thai UCLP children were significantly smaller than those in Thai non-cleft children.

Keywords: cleft lip and palate, cone-beam computed tomography, upper pharyngeal airway lumen, upper pharyngeal airway volume