

**Title:** The presence of submucous cleft palate in patients with isolated cleft lip and middle ear dysfunction

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## **Abstract**

**Introduction:** Recent studies have suggested that children with isolated cleft lip (CL) are more likely to develop middle ear disease and eustachian tube dysfunction (ETD). This may be related to abnormal palatal musculature or an undiagnosed submucous cleft palate.

**Objectives:** To determine the prevalence of submucosal cleft palate in patients with CL who exhibit significant ETD.

**Methods:** A retrospective chart review was performed for children with an isolated CL requiring tympanostomy tubes over a 20-year period at an academic tertiary care medical center. Demographic, clinical, and surgical data were collected.

**Results:** Three hundred twelve patients had an isolated cleft lip, and 29 (9.3%) children required tympanostomy tubes. Of those, nine (31%) were also found to have a submucous cleft palate (7 males, 6 Caucasian). The average age at CL repair was  $3.94 \pm 1.03$  months, and the average age at tympanostomy tube placement was  $13.68 \pm 13.8$  months. All 9 patients had

chronic otitis media, with 4 having mild conductive hearing loss and 3 having moderate conductive hearing loss. The submucous cleft palate was diagnosed at the time of CL diagnosis (4), after CL diagnosis with the diagnosis of chronic otitis/ETD (2) and after a diagnosis of chronic otitis/ETD (3). Seventy-seven percent of patients were enrolled in speech therapy, with 2 (22.2%) patients having velopharyngeal insufficiency.

**Conclusion:** To our knowledge, this is the first study in the United States to look at rates of submucous cleft palate in children with isolated CL and middle ear disease and/or ETD.

While our rates of middle ear disease/ETD are lower than has been previously cited in the literature, the prevalence of submucous cleft palate in this population is not insignificant and suggests that the palatal exam should be revisited to rule out an occult submucous cleft in patients with isolated CL and middle ear disease and/or ETD.