Transillumination of the Occult Submucous Cleft Palate: A Practical Diagnostic Technique

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Submucous Cleft Palate

Congenital defect with deficient union of the muscles that normally cross the velum and aid in soft palate elevation.
Submucous Cleft Palate

- **Overt** submucous cleft palate has obvious external anatomic landmarks, and an estimated prevalence of 0.02% to 0.08%.

- **Occult** submucous cleft palate prevalence is difficult to estimate as patients lack external anatomic deficits.

- Studies suggest occult submucous cleft palate may be far more prevalent than currently recognized.
Need for Pre-operative Diagnosis

• Oropharyngeal surgery on patients with undiagnosed submucous cleft palate can result in iatrogenic velopharyngeal insufficiency (VPI).

• VPI causes hypernasal speech, air emission, nasal regurgitation and difficulty swallowing.

• 5-50 % of patients with submucous cleft palate have VPI at baseline.
The absence of external anatomic markers makes the diagnosis of occult submucous cleft difficult, and dependent on ancillary tests.
## Current Diagnostic Methods

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<th>Expensive</th>
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Transillumination Technique

- Flexible fiberoptic laryngoscopy is already commonly used in peri-operative workup of craniofacial surgery patients.
- Scope is introduced through patient’s nose or mouth, then angled anteriorly to transilluminate the velum.
Transillumination Benefits

- Employs tools already routinely used by craniofacial surgeons.
- Easily integrated into practice.
- Inexpensive
- Quick
Transillumination Results

Normal patient

Patient with occult submucous cleft palate
Transillumination Findings

Normal patient

- Homogenous velum, with no anterior lucency.
- Transilluminated velar musculature continues to midline.
- No notching of hard palate.
Transillumination Findings

Patient with occult submucous cleft palate

- Pronounced central and anterior lucency.
- Deficient median interdigitation of velar musculature.
- Notching of hard palate.
Conclusions

Transillumination is an inexpensive, quick, and easily incorporated technique to screen for undiagnosed occult submucous cleft palate.
Selected References