5) Patient is asked to seal the lips, difficulty breathing through nose should be noted. One nostril can be occluded and the response compared to the same procedure on the other side. (Fig. 10)

The evaluation of nasal airway patency is complicated, especially when the possibility exists that airways may clinically appear inadequate but be quite functional physiologically. Lip separation or an open-mouth habit is not an infallible indicator of mouth breathing. Often complete nasal respiration is coupled with dental conditions that cause open-mouth posture. 2,3

Adenoid Evaluation

Nasopharyngeal space and the size of adenoids have been evaluated using different methods of assessment:

1) Determination of the remnant, or nasopharyngeal space (a lateral cephalometric ratio, x-ray), 2) flexible optic endoscopes (Fig. 11), 3) acoustic rhinometry, and 4) direct measurements during surgery.

Direct measurements are considered to be the most accurate because space can be assessed in three directions. A lateral cephalometric radiograph is an added valuable diagnostic tool for the orthodontist in the evaluation of children with upper airway obstructions. 4 (Fig. 12).

Treatment of Nasal Obstruction

1) Adenoidectomy with or without tonsillectomy is indicated if hypertrophied adenoids (and tonsils) are the cause of upper airway obstruction. 5,6

2) Seepal surgery (rarely indicated in the child), but may be considered in the presence of a marked nasal sepal deflection with impaction. Conservative sepal surgery in growing patients will not have an adverse effect in dentofacial growth. 7,8,9

3) Maxillary expansion (RME or SNE) — an orthodontic procedure that widens the nasal vault (Fig. 15).

4) Cryosurgery or electro surgery — this is a viable option for patients with vasomotor rhinitis. 10

5) Bipolar Radiofrequency Ablation (allergic rhinitis) — performed under local anesthesia.

6) Inferior turbinate surgery — using powered instrumentation.

7) Use of nasal sprays.

Conclusion

The effect of adenoids on facial expression, malocclusion and the mode of breathing has been a topic of debate and investigation by practitioners in the field for the last one hundred years. A review of the literature exposes several theories.

A healthcare provider with a practice philosophy based on prevention of malocclusion development cannot ignore the early years of the patient’s growth cycle. By age twelve, 90 percent of craniofacial growth has already occurred. This is the age when many practitioners begin orthodontic treatment. 11

But this is the age when 80-90 percent of craniofacial growth is complete, so utmost formation and/or deformation has occurred. 12 To wait until 90 percent of the alveolar bone has occurred, before beginning treatment, is not consistent with a preventive philosophy. Interceptive measures must be initiated sooner.

Early intervention requires an acceptance of a multidisciplinary approach to total patient health. An integrated approach to patient evaluation, diagnosis and treatment is most effective. Primary care physicians, dentists, allergists, otolaryngologists and orthodontists must all work together for early prevention and management of young patients with increased nasal airway resistance.

After diagnosis, a comprehensive risk benefit analysis regarding early intervention must be considered. Although hereditary and environmental factors must be considered, the universal goal is the promotion of proper nasal respiration throughout a child’s early years of facial growth.

Figure 14 shows the before and after treatment results of a young girl who had her adenoids removed, then underwent a maxillary expansion before full-arch braces. She was treated as a second opinion against the removal of four premolar teeth. 13

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References


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