

Clinical Perspective

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Vertical Facial Excess in Children: A Clinical Perspective

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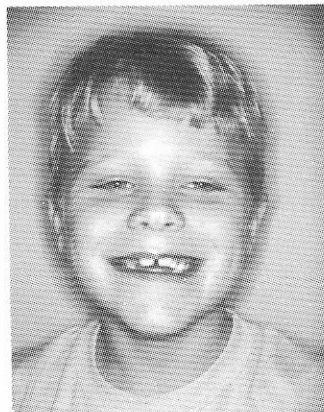
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Children with excessive vertical face height, with an accompanying skeletal openbite, have variously been described as having a long face syndrome or vertical maxillary excess. Recent data, however, indicate that most of the anatomical variations observed cephalometrically in pre-adolescent patients occur below the palatal plane rather than in the maxilla (Fields et al, 1984).

Many children with vertical facial excess have a short mandibular ramus and excess eruption of posterior teeth. This combination results in a steep mandibular plane with an anterior openbite (Proffit, 1986). One treatment approach to such problems is the use of high pull headgear to the maxillary posterior teeth as a means of inhibiting their eruption. Probably a better alternative is the use of a functional appliance that incorporates posterior bite blocks (Proffit, 1986). Such an appliance can be designed to inhibit eruption of the posterior teeth in both arches. In addition, the mandible can be positioned anteriorly if mandibular deficiency is evident.

There are many types of vertical facial excess patterns in children and adults. Patterns are more easily identified in the adult since cephalometric normative data, obtained primarily in the lateral projection, are readily available. Even so, cephalometric norms have traditionally been better descriptors of the horizontal plane of space. Some cephalometric analyses have been developed to describe vertical proportions (Sassouni and Nanda, 1964; Nahoum, 1977). Most recent is the cephalometric analysis offered by Huang et al (1990). Each of these analysis systems provides a means of describing an openbite in reference to landmarks on the skull, palatal plane, and mandible. It remains difficult to document the potential effects of posterior maxillary alveolar excess, although this can be determined to some extent from measures of the position of the maxillary molars in relation to other landmarks or reference planes (such as sella-nasion).

With the above information in mind, we would like to express a concern for those young patients in the age range of 4 to 7 years who have developed an anterior openbite in association with a thumb or finger habit. The patients of particular concern are those who give the clinical appearance of developing vertical facial excess



that is associated with maxillary vertical excess, in contrast to previous data reported by Fields et al (1984). Maxillary excess is manifested clinically by a "gummy" smile, an anterior openbite, a constricted upper dental arch, and prominence of gums (and alveolar bone) at the canine area at rest or during smiling.

Such patients do not lend well to current cephalometric analysis systems. The fact that the maxillary arch is constricted serves to obscure the description of the true vertical relationships involved. Also, the vertical dental positions seen in the lateral cephalometric projection are characterized by variation and change, which is appropriate to this age range. Altogether, the younger child does not present an ideal model for evaluating the vertical components of facial growth.

In spite of the fact that vertical facial excess is multifactorial in origin and patterns of expression, most orthodontists can recognize facial or cephalometric signs that elicit concern that a skeletal problem is developing or is present. When a thumb or finger habit is present, that concern results in the decision to initiate treatment to eliminate the thumb or finger habit.

For the young child with a thumb or finger habit who appears to be developing the maxillary excess characteristics cited above, our experience recommends oral myofunctional therapy as the procedure of choice in contrast to orthodontic appliances for the age range 4 to 7 years. To us, oral myofunctional therapy procedures are better suited to achieving the goal of creating an oral environment in which normal processes of growth and development can be reestablished.

Orthodontic appliances such as cribs, high-pull headgear and functional appliances have great utility in orthodontics. For habit breaking and normalization of oral cavity rest posture, a non-invasive (or non-appliance) approach has been preferred by us. Oral myofunctional therapy appears to be our best resource in confronting the source of the problem rather than working with appliances to override the symptom or to encourage other efforts to eliminate the thumb or finger habit.

One of the most important aspects of oral myofunctional therapy for thumb and finger habits is a combined approach of eliminating the thumb or finger from the oral cavity along with establishing a lips-together, tongue-back resting posture of the patient. In our experience, patients in the range of 4 to 7 years are able to respond to instruction in all of these areas. For some, a tongue-tip against the lingual surface of the lower incisors rest posture is more easily obtained than requesting that the tongue-tip rest against the palatal rugae area. A tongue down position seems more economical

for some patients, especially where there is an openbite as in the sample under discussion.

The general procedures that we utilize with the young thumb or finger sucker who appears to be developing vertical facial excess are those reported by VanNorman (1984, 1985) and by Pierce (1988). These are behaviorally based programs which some may distinguish from oral myofunctional therapy. To us, such programs are part of oral myotherapy, and contrast importantly with appliance use that is primarily symptom-oriented.

We do not advocate that any child with a thumb or finger habit in the age range of 4 to 7 years needs treatment for the habit pattern. Those patients who have developed an anterior openbite, have a gummy smile, and show clinical evidence of vertical maxillary excess, with maxillary constriction, seem appropriate candidates for concern and conservative treatment of the habit by techniques reported as programs of oral myofunctional therapy. The overall goal of treatment should be to reestablish a normal rest posture of the tongue and lips, with the thumb or fingers out of the oral cavity, as a means of recapturing more normal processes of growth and development.

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