Submucous cleft palate and the general practitioner

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Summary: Submucous cleft palate refers to a situation where the soft palate is largely composed of mucosa with little or no muscle. The defect is often not obvious on inspection of the mouth and pharynx. There is considerable clinical variation, with speech ranging from normal or minimal nasality to severe nasality and defective articulation. Many patients who have latent submucous cleft palate have the condition unmasked by an adenoidectomy because the adenoid pad had served as a compensatory factor in effecting palatopharyngeal closure. All physicians who perform tonsillectomy and adenoidectomy should be aware of the signs and symptoms which may suggest the diagnosis.

Résumé: *La fissure palatine sous-muqueuse et l'omnipraticien*

Dans la fissure palatine sous-muqueuse, le palais mol est principalement composé de muqueuse et ne comporte pas ou ne comporte guère de muscle. La fissure est rarement évidente par un simple examen de la bouche et du pharynx. Quant au langage articulé, il est frappé de divers troubles dont le nasonnement qui peut être minimal ou sévère et une articulation vicieuse. Chez de nombreux malades, dont la fissure palatine sous-muqueuse est simplement latente, la lésion peut être révélée par une adénoïdectomie: en effet les végétations adénoïdes ont jusque là constitué un facteur compensatoire permettant la fermeture palatopharyngienne. Il importe donc que les médecins qui pratiquent l'amygdalectomie et l'adénoïdectomie connaissent bien les signes et symptômes qui peuvent mener au diagnostic.

Many physicians are familiar with the fact that occasional patients may have hypernasal speech following a tonsillectomy and adenoidectomy. Usually this is temporary; however, there are a few patients in whom the hypernasal speech is a permanent feature after this operation. Such patients probably have a submucous cleft palate. Their soft palate contains little or no muscle, being composed almost exclusively of mucosa, and therefore is unable to effect palatopharyngeal closure. Fig. 1 summarizes the signs and symptoms which should lead a physician to suspect this disorder. Bifid uvula is a frequent but not an invariable finding, and a variety of other palatal morphologic variations may be seen.[1]

Effects on speech

Normally the soft palate closes off

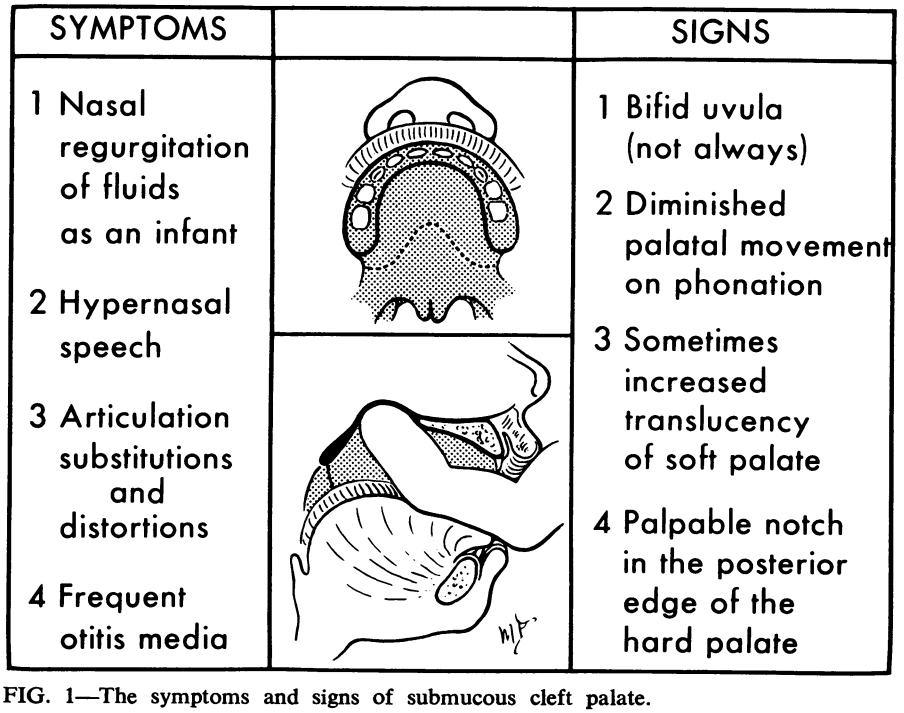

FIG. 1—The symptoms and signs of submucous cleft palate.

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This work was supported in part by MRC Grant no. MA-3415.

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the nasal cavity in the production of certain speech sounds and in swallowing. The degree of speech defect will depend on the extent of the submucous cleft. If it is extensive, then the child's speech may be no different from that in a case of overt cleft palate. Less severe submucous clefts may cause minimal nasality partly because of the degree of movement of the soft palate and partly because the adenoid pad may act as a compensatory factor by reducing the distance that must be bridged for palatopharyngeal closure. Children with minimal nasality due to a submucous cleft palate can develop severe and often permanent nasality following adenoidectomy.[2] The mucosa covering the cleft acts as a drumhead which transmits vibrations from mouth to nose,[3] and nasality is particularly noticeable on high vowels such as *ee*/i/ and *oo*/u/. There may be additional speech errors such as (a) weak production of plosive sounds (p and b); (b) nasal grimacing (alar pinching) during the production of most consonants, and (c) presence of non-speech sounds such as glottal stops (tiny cough-like sounds) and pharyngeal fricatives.

Surgical aspects

Is operation indicated when a submucous cleft palate is diagnosed in infancy? Advocates of early surgical management overlook the fact that some children with a submucous cleft palate do not have palatopharyngeal incompetence and do not invariably develop speech defects.[4] Conversely, it is well recognized that surgery performed after faulty speech is established is often not rewarding.

The decision to operate in infancy (i.e. 15 to 18 months) should be based on a diagnosis of palatopharyngeal incompetence, not merely on a diagnosis of submucous cleft palate. A recent study[4] suggests that there is no correlation between the extent of the muscular cleft and speech proficiency. However, a short palate and/or one with reduced mobility often results in speech defects. The failure of palatopharyngeal closure can often be demonstrated by radiologic methods (Fig. 2).

If there is a distinct probability that hypernasal speech will result from palatopharyngeal incompetence, then surgery is indicated. The procedure of choice is the Wardill V-Y repair as recommended by Calnan[5] in 1954. In an older child with established hypernasal speech, particularly if an adenoidectomy has been performed, this may not be sufficient to produce adequate palatopharyngeal closure during speech and serious consideration should be given to combining the palatal surgery with a Hynes pharyngoplasty.[6]

It is vital therefore to approach each patient with submucous cleft palate individually with respect to the need for operation. A muscular cleft alone does not demand surgical intervention; one must look for further signs of palatopharyngeal incompetence such as a short palate and/or one with inadequate mobility.

Comment

Many pediatricians, otologists and family doctors are not aware of this entity. All physicians who perform tonsillectomy and adenoidectomy should be aware of the signs and symptoms which may suggest the diagnosis, and if it is suspected the patient should be referred for evaluation to a unit specifically dealing with the cleft palate, or, if this is unavailable, to a plastic surgeon and speech pathologist, since personnel from these disciplines probably have the most experience in this area. It is well known that patients with cleft palate have an increased frequency of otitis media, and those with submucous cleft palate are no exception.[7] However, in the interests of good speech, and since the indications for tonsillectomy and adenoidectomy are seldom urgent, it is preferable to conserve the adenoid pad and treat the otitis media by other methods, thereby preventing the speech disorder that may follow operation.

References

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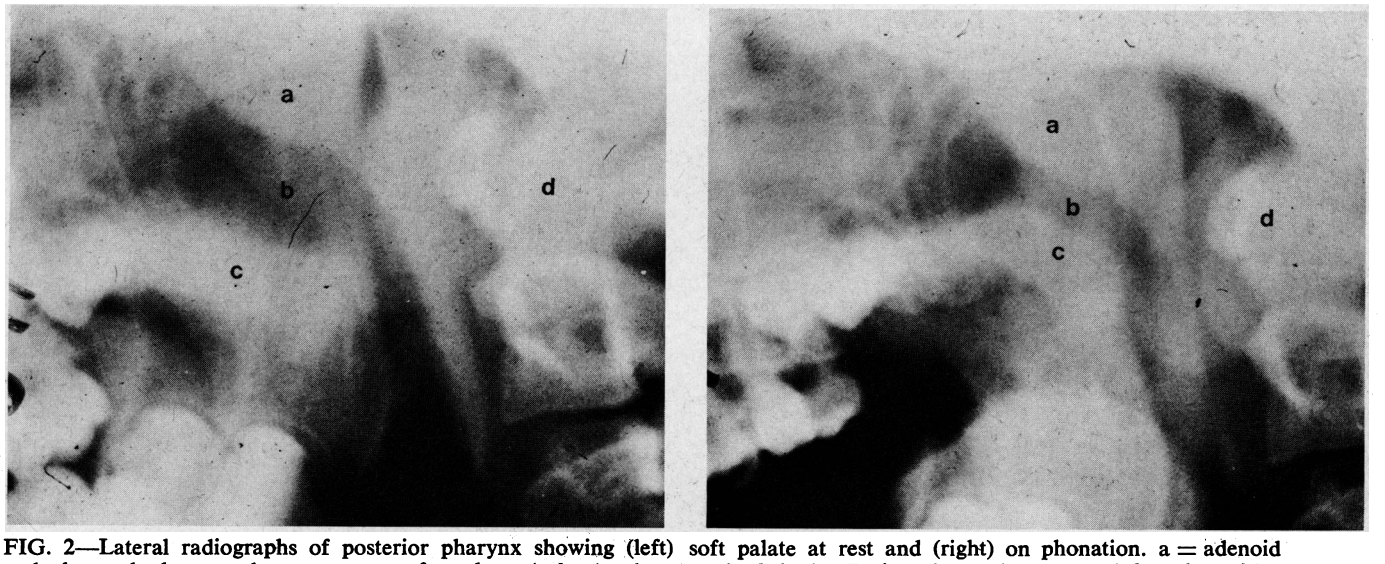

FIG. 2—Lateral radiographs of posterior pharynx showing (left) soft palate at rest and (right) on phonation. a = adenoid pad, b = velopharyngeal space, c = soft palate (velum), d = vertebral body. Patient has submucous cleft palate. Note failure of closure of the velopharyngeal space during phonation.