The bifid uvula

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Interest in the uvula has waned to the point where a modern standard E.N.T. text (Ballentyne and Groves, 1971) contains not a single reference apart from a brief description of the normal anatomy and a sentence mentioning the bifid uvula. Older texts dwell in more detail upon anatomical abnormalities and so-called diseases of the uvula, for example, four pages in Tilley (1919); details of 'Casselberry's operation for amputation of the elongated tip of the uvula' (Ballenger, 1947). Thomson and Negus (1948) illustrate three degrees of bifid uvula and in discussing the elongated uvula state 'The symptoms popularly ascribed to a "relaxed" uvula are, in the majority of cases, caused by the concomitant condition of the soft palate'.

The purpose of this paper is to suggest that the bifid uvula is sometimes of considerable interest and significance and may not always be dismissed as merely 'a very minor degree of cleft palate' (Simpson *et al*, 1967).

A bifid uvula sometimes represents the most obvious sign of the presence of a submucous cleft in the soft palate. Failure to recognize this may lead at adenoidectomy to accidental splitting of the soft palate or to production of persistent nasal escape. A bifid uvula may be the clue to the aetiology of speech problems, nasal regurgitation, dysphagia (Illingworth, 1969), persistent secretory otitis media, recurrent acute otitis media or chronic suppurative otitis media (Jaffe and DeBlanc, 1970), all of which whilst commonly anticipated in association with a full-thickness cleft of the palate, may be unexplained unless the presence of a submucous cleft is appreciated.

The incidence of bifid uvula is variously reported as 1·34 per cent in 1,864 dental patients and 1·47 per cent in 7,837 college students (Meskin *et al.*, 1964), 1·82 per cent in an unspecified population (Berans, 1893) and 0·18 per cent in young children (McIntosh, 1954).

The discrepancy between the last figure and the remainder is probably due to the fact that the visualization of the uvula can be very difficult in young children. The opportunity presented to the E.N.T. surgeon to examine the uvula when the mouth is open with a gag in the tonsillectomy position is unique. The tongue is held out of the way and it is a simple matter to probe the uvula and demonstrate whether it is completely fused or whether two halves are held together by surface tension.

The incidence of submucous cleft palate is not known, nor is the

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statistical correlation between bifid uvula and submucous cleft in the general population. A submucous cleft palate may be defined (Calnan, 1954) as a congenital deformity in which there is imperfect muscle union across the velum; the palate is short and velo-pharyngeal closure is incompetent so that speech is nasal in quality and may even be unintelligible. Developmentally there has been a failure of mesoderm to reach the midline of the velum whereas the ectoderm has done so. In Calnan's series of eighteen cases, there was a notch in the hard palate in all, and the uvula was bifid in all but three. In Crikelair *et al* (1970) series 20/20 had a palatal notch and 18/20 a bifid uvula. Kelly (1910), examined ninety patients with a bifid uvula, and found an angular gap in the hard palate in eighteen. None of these ninety cases had nasopharyngeal incompetence and he states that 'submucous cleft without insufficiency is present in about 20 per cent of those with a bifid uvula'.

Kelly also describes eight cases with insufficiency of the palate and of these the uvula was bifid in three and 'rudimentary' in the remainder. He quotes Lermoyez as saying that the uvula was bifid in all cases of submucous cleft. Dorrance (1930) says that the uvula is bifid in some cases.

Table I reviews eighteen cases of submucous cleft seen at the Hospital for Sick Children, Great Ormond Street, in the ten years 1960–1969 for which complete records are available. Five of these cases presented with nasal escape following adenotonsillectomy. 18/18 had a bifid uvula. 7/18 had ear trouble—two cases of chronic suppurative otitis media, one case of secretory otitis media, and four cases of deafness of unspecified cause.

It appears that a bifid uvula is present in almost all cases of submucous cleft palate while a notch in the hard palate is present in every case. The bifid uvula is the most obvious clinical feature.

The diagnosis of a submucous cleft is not straightforward. Cases usually present because of either nasal regurgitation or defective speech. Nasal regurgitation may be present from birth or may only be manifest during vomiting. Speech problems may take the form of delay in speech development or nasal escape. Symptoms are commonly made worse by adenoidectomy. A submucous cleft can however occur in a patient with normal speech (Calnan, 1954), and here the good speech may depend on an adequate adenoid pad. Alternative explanations may be that muscular divarication is not extensive, that the length of the palate is adequate in spite of the lack of muscle or that there is sufficient pharyngeal wall mobility to close off the naso-pharynx.

Clinical examination usually reveals a bifid or occasionally a stunted uvula, a gutter along the midline of the velum, absence of the median raphe and a palpable notch in the posterior margin of the hard palate.

Special examinations which may be helpful are transillumination (Massengill, 1966), cine-radiography (Calnan, 1954), electromyography

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TABLE I.

FEATURES OF 18 SUBMUCOUS CLEFT PALATE CASES—GREAT ORMOND STREET

Case	Sex	Age at presentation	Presenting Symptoms	Bifid Uvula	State of ears	Age at operation*	Comments
F.C.	F	4/12	Regurgitation	+	N.A.D.	—	Speech satisfactory at 2 2/12.
S.N.	F	8/12	Regurgitation	+	N.A.D.	1 3/12	—
M.W	M	2	Speech delay N/E post T&A.	+	S.O.M.	8 3/4	E.U.A. at age 3 said to be N.A.D. Symptoms worse after T&A operation
A.B.	F	2 10/12	Speech delay + N/E	+	N.A.D.	2 11/12	—
K.B.	F	3	Speech delay	+	N.A.D.	3 4/12	—
S.F.	F	3 1/12	N/E	+	N.A.D.	—	Speech satisfactory with Sp. Therapy.
T.J.	F	3 1/2	N/E	+	N.A.D.	4 3/4	—
P.M.	M	4 1/12	N/E	+	C.S.O.M.	4 1/12	Has also had mastoid surgery.
T.P.	F	4 2/12	N.E. post T&A.	+	C.S.O.M.	—	Speech satisfactory with Sp. Therapy. Mastoidectomy.
N.W	M	4 1/4	Speech delay + N/E	+	N.A.D.	4 11/12	—
D.H.	F	4 9/12	N/E post T&A.	+	'Slightly deaf'	5 1/12	—
E.I.	F	5	N/E	+	N.A.D.	6 11/12	—
G.H.	M	5 5/12	N/E	+	N.A.D.	6 6/12	—
R.S.	M	6	N/E	+	'Deaf'	—	Improved with Sp. Therapy. Hearing aid supplied.
M.D.	M	7	N/E post T&A.	+	N.A.D.	—	Speech satisfactory with Sp. Therapy.
T.S.	F	7	N/E post T&A.	+	N.A.D.	7 5/12	—
W.C.	M	7 1/12	N/E	+	'Some deafness'	7 9/12	—
C.H.	M	7 1/12	N/E + Deaf	+	'Deaf'	9 1/12	Speech therapy for 6 years pre-operation. Hearing aid.

N/E = Nasal Escape. S.O.M. = Secretory Otitis Media.
C.S.O.M. = Chronic Suppurative Otitis Media.
* Operation = Repair of the palate, with or without push-back and/or pharyngoplasty.

(Rees *et al.*, 1967). None of these special examinations is absolutely reliable however and even examination under anaesthetic may be misleading. Two of the eighteen cases of submucous cleft in the series described had initial examination under anaesthesia which was said to be normal, only to have this proved wrong later when the soft palate was explored because of persisting symptoms.

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The combination of a bifid uvula and a notched hard palate should make one highly suspicious and, together with evidence of nasopharyngeal incompetence, certain of the presence of a submucous cleft.

In a period of a little over six months at the Hospital for Sick Children, Great Ormond Street, I saw fifteen cases with a bifid uvula in the E.N.T. Department. Three out of fifteen had submucous clefts.

Case 1 (*C.M.*) Referred at age $7\frac{1}{2}$ with deafness and difficulty in pronouncing 's'. Found to have a bifid uvula, notched palate, and secretory otitis media. Treated by insertion of grommets and pharyngoplasty.

Case 2 (*G.W.*) Referred at age 6 because of deafness. Had nasal escape after Ts and As one year before. Treated by myringotomies and grommets. Speech not sufficiently affected to warrant surgery to the palate or pharynx.

Case 3 (*A.H.*) Referred at age 9 months with bilateral chronic suppurative otitis media. Found to have bifid uvula and palatal notch. Strong family history of clefts. Speech not developed yet, but nasal regurgitation of food present.

A further four cases have mild speech problems not sufficient to warrant consideration of surgical correction Eight out of fifteen had ear problems—six cases of secretory otitis media, one case of recurrent acute otitis media, one of chronic suppurative otitis media.

These figures are small but it seems likely that a significant proportion of children with a bifid uvula have a submucous cleft.

Following this experience I have seen eight children with bifid uvulas presented for adenotonsillectomy in a general E.N.T. Department (St. Thomas's Hospital), four had in addition a notched hard palate. In no case did adenoidectomy lead to increased nasal escape. In two cases with slight pre-operative nasal escape the parents said subsequently that the speech was improved following operation.

Discussion

The incidence of bifid uvula in the population is approximately 1 in 70. However, the occurrence of nasal escape following adenoidectomy is much lower—1 in 2,000 cases is the figure suggested by Gibb (1969). Unless therefore the population presenting for adenotonsillectomy is markedly different from general, the incidence of a *significant* degree of palatal abnormality is small even in those cases which have a bifid uvula. My experience bears this out and corresponds well with Kelly's (1910) observations.

Faced with a bifid uvula at operation the surgeon should feel for a palatal notch and if it is present refrain from adenoidectomy in any case where there is doubt about nasopharyngeal competence. There is otherwise a risk of producing nasal escape.

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Summary

The presence of a bifid uvula should alert one to the possible presence of a submucous cleft.

The features of a series of eighteen submucous cleft palate children are tabulated.

The incidence of a significant degree of submucous cleft is small even in cases with a bifid uvula.

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