Prevalence of Cleft Uvula Among 2,732 Danes

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A total of 2,732 patients at the Royal Dental College, Cophenhagen, were studied for *occurrence* of *cleft uvula*. The prevalence was 1.13%, and the ratio of partial to total clefts was 30:1. From a comparison with results of previous studies, it is concluded that the prevalence of cleft uvula in the *Danish population* appears to be in the same range as in other white populations which have been studied.

The term *cleft uvula* signifies partial or total bifurcation of the uvula.

Its occurrence has attracted increased attention during recent years because of the assumption that cleft uvula is a microform of cleft palate. Meskin et al., (1966) studied 343 relatives of propositi with cleft palate as well as 281 controls. In the former group, the prevalence of cleft uvula was about 10 times that in the control group. The prevalence was highest among the siblings of propositi (15.7%), next among their parents (10.5%), and lowest among other relatives (4.1%).

Cleft uvula is also of clinical interest inasmuch as otological diseases appear to be significantly more common in persons having this anomaly than in controls (Jaffe and de Blanc, 1970). According to Beeden (1972), a submucosal cleft of the palate is nearly always combined with cleft uvula.

Interest in cleft uvula increased after it was realized that its prevalence varies widely in different populations. The object of the present paper is to report the prevalence of cleft uvula in a sizable group of the Danish population and to compare it with other populations.

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Previous studies

Table 1 lists the results of a number of previous investigations. The publications are grouped by race and include Caucasians, Negroes, Mongoloids, and American Indians.

It is apparent that, regardless of age, the anomaly appears to occur with increasing prevalence in the races studied in the following sequence: *Negroes* (about 0.5%), *Caucasians* (1–2%), *Mongoloids* (4–10%), and *American Indians* (10–18%). The variations in the prevalence of cleft uvula are in accordance with the finding that the prevalence of cleft palate is lower in Negroes and higher in Indians than in Caucasians (Pelton et al., 1969; Jaffe and de Blanc, 1970; Schaumann et al., 1970).

Material and method

The Danish population studied is comprised of 1,217 male and 1,515 female patients, a total of 2,732, who applied to the Department of Oral Diagnosis of the Royal Dental College, Copenhagen, during 1973–1974 and who were examined, without prior selection, by one of the three authors. The age distribution is shown in Table 2.

The following patients were excluded: (1) Foreigners and Danish patients of foreign descent, including Greenlanders, (2) patients with cleft lip/palate, and (3) patients in whom the examination could not be carried through because of acute diseases.

TABLE 1. Reported prevalence of cleft uvula.

Authors	Individuals studied			Percentage having cleft uvula		
	Number	Origin	Age	Males	Females	Both sexes
A. CAUCASIANS						
Berans (1970)	3,000	U.S.A	?	–	–	1.8
McIntosh et al. (1954)	5,964	New York City, U.S.A.	"infants"	–	–	0.2
Meskin et al. (1964)	1,864	Minnesota, U.S.A.	"dental clinic patients"	1.6	1.1	1.3
Meskin et al. (1966)	7,837	Minnesota, U.S.A.	"students"	1.5	1.4	1.5
Baker (1966)	3,283	Illinois, U.S.A.	?	2.3	–	–
Tolarová et al. (1967a)	1,189	Prague, Czechoslovakia	18–21 yrs	–	–	1.8
Tolarová et al. (1967b)	1,081	Prague, Czechoslovakia	3–6 yrs	7.0	5.6	6.4
Grewe and McCombie (1971)	776	British Columbia	13–17 yrs	4.5	3.5	4.0
B. NEGROES						
Baker (1966)	186	Illinois, U.S.A.	?	0.5	–	–
Richardson (1970)	3,319	Tennessee, U.S.A.	"students"	0.3	0.3	0.3
Schaumann et al. (1970)	956	Washington, U.S.A.	662 adults 294 children	0.5	0.6	0.5
C. MONGOLOIDS						
Mochizuki et al. (1961)	4,726	Iwate Prefecture	6–15 yrs	–	–	10.0
Crewe and McCombie (1971)	191	Chinese	13–17 yrs	–	–	6.8
Jarvis and Gorlin (1972)	?	Arctic Eskimoes	?	8.5	8.6	8.6
Heathcote (1974)	297	Inuits	0–30	4.4	3,1	3.7
D. AMERICAN INDIANS						
Cervenka and Shapiro (1970)	635	Chippewa Indians, Minnesota, U.S.A.	"school children"	–	–	10.2
Jaffe and de Blanc (1970)	944	Navajo Indians, New Mexico, U.S.A.	"school children"	13	10	11
Shapiro et al. (1971)	959	Navajo Indians, New Mexico, U.S.A.	children	–	–	18.8

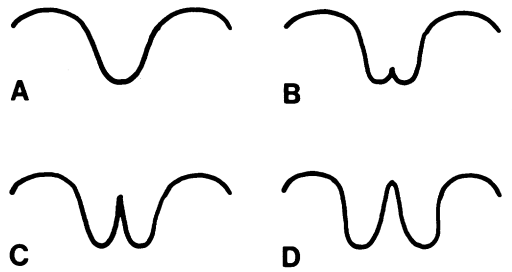

Figure 1. Classification of types of cleft uvula according to Meskin et al. (1964). A: Normal uvula. B: Uvula bifurcated up to one fourth of its total length. C: Uvula bifurcated from one to three fourths of its total length. D: Uvula bifurcated from three fourths to its total length.

The uvula was inspected after flattening the tongue with a dental mirror. In cases where the uvula did not appear to be normal, it was touched by a periodontal probe to disclose incomplete clefts, if any.

The findings were classified according to Meskin et al. (1964) (Figure 1).

The observations, together with routine patient data and other observations, were transferred to punch cards for electronic computer analysis.

Results

Cleft uvula was observed in a total of 31 cases (1.13%). No variation among age groups was found (Table 2).

Cleft uvula was observed in 20 males (1.64%) and 11 females (0.73%). The sex difference is statistically significant (χ^2 = 5.92 (Yate's correction), d.f. = 1, $0.01 < P < 0.025$).

Table 3 gives the distribution of the individual categories of cleft uvula. Total bifurcation (type D) occurred in only one case.

Discussion

There is agreement between the results of the present study and previous findings in adult Caucasians. The prevalence was of the same order of magnitude in children and adults. Thus, unlike Tolarová et al., (1967a, 1967b), we did not find a higher prevalence in children than in adults.

The significantly higher incidence in males than in females found in the present study corresponds to previously reported tendencies.

The higher frequency of partial than of total clefts has been found in a number of previous investigations of Caucasians as well as of other ethnic groups (Meskin et al., 1964; Meskin et al., 1966; Cervenka and Shapiro, 1970; Jaffe and de Blanc, 1970).

There is no reason to assume that the present data on the prevalence of cleft uvula differs from what would be found in the general Danish population. Accordingly, it may be concluded that the prevalence of cleft uvula in the Danish population seems to be in the same range as in previously studied populations of European and American Caucasians.

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TABLE 2. Distribution of patients by age and prevalence of cleft uvula

Age in years	Number of individuals		Individuals with cleft uvula		
			No.		Per cent total
	Males	Females	Males	Females	
0–9	76	92	1	0	0.59
10–19	86	114	2	0	1.00
20–29	393	382	7	2	1.16
30–39	203	203	5	3	1.97
40–49	140	167	2	2	1.30
50–59	118	209	0	1	0.31
60–69	118	209	3	3	1.83
≥70	83	139	0	0	0.00
Total	1,271	1,515	20	11	1.13

TABLE 3. Distribution by type of uvula

Type	Number	Per cent
A (normal)	2,701	98.87
B (bifurcated 1/4)	27	0.99
C (bifurcated 1/4 to 3/4)	3	0.11
D (total bifurcation)	1	0.04
Total	2,732	100.00

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