

# THE PREVALENCE OF PALATINE AND MANDIBULAR TORI IN A NIGERIAN POPULATION

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## INTRODUCTION

Tori are bony exostosis commonly found on the midline of the hard palate or the lingual aspects of the mandible above the mylohyoid line. They are slowly growing non-neoplastic and non-pathological osseous projections. In the past, various factors such as genetic, evolutionary process, functional stress, infectious process and developmental growth process were suggested aetiological causes (1). However, the current accepted view is that tori arise from an interplay of both genetic and environmental factors (2).

Torus mandibularis (T.M.) or torus Palatinus (T.P.) have been reported in most races and the frequency of occurrence varies from one race to the other and between males and females. Various reports have documented the prevalence of tori in the regions of Europe, America and Asia (3, 4, 5, 6, 7, 8, 9, 10). Information on the prevalence of tori in black Africans is however, scanty. The presence of study therefore aims at examining the prevalence of tori in a Nigerian population.

## PATIENTS AND METHOD

Two thousand, five hundred and six (2,506) consecutive Nigerian patients reporting for dental treatment for the first time at the Dental Centre, University College Hospital Ibadan were the subjects of this study.

They were examined by visual inspection and digital palpation for the presence of torus palatinus (T.P) and torus Mandibularis (T.M). These comprised of 1,210 (48,3 %) males and 1,296 (51,7 %) females. None of these patients came to the clinic because of the presence of torus. Patients were divided into 4 groups according to their ages 0-20 years, 21-40 years, 41-60 years and 61 years and above.

Data obtained were subjected to statistical analysis using student t-test for determining significance. The concurrence rate was also determined.

## RESULTS

Out of the 2,506 subjects examined, 114 (4,5%) had either T.P or T.M or both. These were made up of 44 (3,6 %) out of 1,210 males and 70 (5,4%) out of 1,296 females giving a male to female ratio of 2:3 (Table I).

The ages of the subjects with tori ranged from 7 to 62 years with a mean of 26.6 ( $\pm 10$ ) years while the median was 24 years. Majority (68 %) of the subjects were in the age group 21-40 years. The age of the male subjects ranged from 7 to 55 years (mean 26.8  $\pm$  11.3 years) while those of the female subjects ranged from 15 to 62 years (mean 26.5  $\pm$  9.3 years). There was no significant difference in mean age at 5 % level ( $P < 0.05$ ).

### Torus Palatinus

Out of 2,506 patients 49 (2 %) had T.P. and were made up of 18 (1.5 %) males and 31 (2.4 %) females. The males to female ratio was 3:5. The age range was 7 to 55 years while the mean age for males was 22.5 ( $\pm$  11.3) years and for females 24.3 ( $\pm$  6.6) years.

### Torus mandibularis (T.M.)

Out of the 2,506 subjects 79 (3.2 %) had torus mandibularis. They were made up of 29 (2.4 %) males and 50 (3.9 %) females, giving a male to female ratio of 3:5. The mean age was 28.1 ( $\pm$  7) years with a range of 15-62 years for all patients.

For males, the mean age was 29.3 ( $\pm$  10) years while the mean age for females was 27.3 ( $\pm$  10) years.

## CONCURRENCE

Fourteen (28.6 %) patients had both types of tori occurring concurrently. They were made up to 3 males and 11 females with a mean age of 25.7 ( $\pm$  4.0) years and 24.1 ( $\pm$  6.0) years respectively.

## DISCUSSION

Racial differences in the prevalence of oral tori has been well documented (6, 7). Tori have been consistently shown to be more frequently seen in the mongo-

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loids than in the Caucasians (1, 3, 7). YAACOB et al. (7) in a study of various Malaysian ethnic groups found the prevalence rate of tori higher in those with mongoloid racial stock than those of caucasiod stock.

COSTICH (11) speculated that tori may be less common in blacks (Negroes) than in whites (Caucasians). Our findings confirm this view as a low prevalence rate of 4.5 % was obtained in this study. A lower rate of 2 % and 3.2 % were calculated for torus palatinus and torus mandibularis respectively. Previous reports in mongoloid and Caucasian races showed higher rates. KOLAS et al. (1) found a rate of 20.9 % and 7.5 % for torus palatinus and torus mandibularis respectively while HAUGEN (2) found a rate of 9.2 % T.P. and 7.2 % T.M. in a Norwegian population. YAACOB et al (7) found a high rate of 24,4 % of torus palatinus in Malaysians but the prevalence rate of torus mandibularis in the same population was low (2.2 %). SHAH et al. (9) reported similar findings in Indians.

The age and sex characteristics of patients with tori do not differ significantly from previous reports from other races as most patients with tori fell within the age group 20-40 years while females were more frequently affected than males (1, 2, 5, 7).

A significant finding of this study was that torus mandibularis (3.2 %) was more frequently seen in this population than torus palatinus (2.0 %). KOLAS et al. (1) had earlier reported that mandibular torus was found more frequently in American and African Negroes than palatal torus.

This is in agreement with our finding. Since most studies on other races (1, 2, 4, 5, 7) reported a higher prevalence of torus palatinus than torus mandibularis, we suggest that the higher prevalence of the latter in our environment might be peculiar to Africans. More epidemiological studies are however needed to confirm this assertion.

**Table I : distribution of tori with respect to age and sex (prevalence in percentage)**

Age (years)	Males		Females		Both sexes	
	N	No with torus	N	No with torus	N	No with torus
0-20	426	13 (3.1)	446	15 (3.4)	872	(3.2)
21-40	512	26 (5.1)	584	515 (8.7)	1096	77 (7.0)
41-60	197	5 (2.5)	214	3 (1.4)	127	1 (0.8)
61 and above	75	0 (0)	52	1 (1.9)	127	1 (0.8)
Total	1,210	44 (3.6)	1,296	70 (5.4)	2,506	114 (4.5)

**Table II: Distribution of torus palatinus with respect to age and sex (prevalence in percentage)**

Age (years)	Males		Females		Both sexes	
	N	No with torus	N	No with tori	N	No with tori
0-20	426	8 (1.9)	446	8 (1.8)	872	16(1.8)
21-40	512	9 (1.8)	584	23 (3.9)	1096	32 (2.9)
41-60	197	1 (0.5)	214	0 (0)	411	1 (0.2)
61 and above	75	0 (0)	52	0 (0)	127	0 (0)
Total	1,210	18 (1.5)	1,296	31 (2.4)	2,506	49 (2.0)

**Table III : Distribution of torus mandibularis with respect to age and sex (prevalence in percentage)**

Age (years)	Males		Females		Both sexes	
	N	No with tori	N	No with tori	N	No with tori
0-20	426	5 (1.2)	446	10 (2.2)	872	15 (1.7)
21-40	512	20 (3.9)	584	36 (6.2)	1096	56 (5.1)
41-60	197	4 (2.0)	214	3 (1.4)	411	7 (1.7)
61 and above	75	0 (0)	52	1 (1.9)	127	1 (0.8)
Total	1,210	29 (2.4)	1,296	50 (3.9)	2,506	79 (3.2)

**Table IV : Concurrence of torus palatinus and torus mandibularis**

Age (years)	N		Prevalence of concurrence	
	Male	Female	Male	Female
0-20	426	446	3 (0.7)	3 (0.7)
21-40	512	584	0 (0)	8 (1.4)
41-60	197	214	0 (0)	0 (0)
61 and above	75	52	0 (0)	0 (0)
Total	1,210	1,296	3 (0.2)	11 (0.8)

**SUMMARY**

A survey of 2,506 consecutive Nigeria patients reporting for the first time at the Dental Centre, University College Hospital, Ibadan showed a prevalence of 4.5 % of oral tori. The male to female ratio was 2:3. Torus mandibularis (3.2 %) was seen to be more frequent than torus palatinus (2.0 %) in this population. This finding supports previous report on American and African Negroes in contradiction to reports on other races.

**Key-words :** *torus mandibularis, torus palatinus.*

**RESUME**

Une étude sur 2506 patients nigériens qui se sont présentés pour la première fois au centre de stomatologie du CHU d'Ibadan, montre une fréquence de 4,5 % de protubérances buccales. La proportion hommes/femmes fut de 2,3.

Dans cette population, les protubérances mandibulaires (3,2 %) se sont avérées plus fréquentes que celles du palais (2 %).

Ces résultats confirment les rapports faits sur les noirs américains et africains, mais ils sont en contradiction avec les rapports, sur d'autres races.

**Mots-clés :** *protubérance mandibulaire, protubérance du palais.*

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