



Full Length Research Article

PREVALENCE OF MAXILLARY AND MANDIBULAR TORI IN A GROUP OF POPULATION IN SULAIMANI CITY

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ABSTRACT

Background: Tori are benign anatomical bony prominences occurring in the hard palate and the lingual aspect of the mandible.

Aim: to investigate the prevalence of maxillary and mandibular tori in different gender and age group.

Methodology: three hundred and fifty patients from shorish teaching dental center (198 males and 152 females) were examined for presence of torus palatinus and torus mandibularis, their location and relation to gender and age were evaluated.

Result: the overall prevalence of tori was 9.42%. The prevalence of torus palatinus was 4.75%, while the prevalence of torus mandibularis was 4.85%. Female showed a higher prevalence of tori 10.52% than males 8.58%.

Conclusion: the incidence of tori is higher in females when compared to males, torus palatinus is more frequent in younger age group, while torus mandibularis in older age group.

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INTRODUCTION

The tori (meaning "to stand out" or "lump" in Latin) has been mentioned in the literature for about 180 years (Seah, 1995), they are exostosis that are formed by a dense cortical and limited amount of bone marrow, and they are covered with a thin and poorly vascularized mucosa (Castro Reino, 1990). A slowly growing torus palatinus (TP) usually occurs in the midline of the hard palate along the median palatine suture involving both processipalatine (Vidic, 1966). Torus mandibularis (TM) occurs most commonly in small size. They are often located at the canine to premolar area (Seah, 1995). Torus palatinus is covered by thin layer of mucous membrane that is easily traumatized by the denture base unless a relief is provided. Also torus mandibularis is covered by an extremely thin layer of mucous membrane for that reason they may be irritated easily with the movement of the denture base in edentulous patients (Johnson, 1958 and Rakprasitkul, 1991).

There is no specific etiology for tori, but there are many predisposing factors according to many researchers such as genetic, environmental, masticatory, hyper function and nutritional (Haugen, 1992 and Gorsky, 1998). The reported prevalence of tori varies among studies, probably because of racial or ethnic differences. Torus Palatinus has been found more frequently in women, whereas Torus mandibularis is more common in men. Tori are frequently observed in young adults and in middle-aged persons (Reichart, 1988 Gorsky *et al.*, 1996). A study of Haugen estimated that the prevalence of torus palatinus predominate in female, in a gender proportion of 5:3, whereas in torus mandibularis the males were in majority and the gender ratio was 4:3. In both genders prevalence of the two tori was highest in the 35–65 years age group (12). The aim of the present study is to investigate the prevalence of torus palatinus and torus mandibularis among the population of different age and sex in Sulaimani city.

Subject and method

A total of 350 (198 males and 152 females) randomly selected Kurdish dental patients attending shorish dental center in

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sulaimani city were included in this study. They were interviewed and examined and a short medical history was obtained including presence of any chronic diseases, medical complaints or drug intake (Ismail, 2007). The presence of tori were confirmed by clinical examination and palpitation, torus palatinus was defined as a raised bony exostosis in the midline of the hard palate, and torus mandibularis as a raised bony exostosis at the lingual aspect of mandible. Subject were categorized based on their sex and classified into 5 age groups, namely (21-30, 31-40, 41-50, 51-60, ≥ 61 years).

RESULT

Table 1 revealed that out of total 350 subjects only 33(9.42%) had prevalence of both TP and TM ranged from 21 to 69 years of age. The majority of patients with tori were in 21-30 years group. Table 2 presents the distribution of TP and TM with respect to age and sex. Out of the 16 subjects with TP, maximum number of males (3 (33.33) %) belonged to the age-group 21-30 and 41-50 years, and the minimum of (0%) to the age-group ≥ 61 years. However, a maximum of three females (42.85%) belonged to the age-group 41-50 years and minimum (0%) to the age-group ≥ 61 years. Out of the 17 subjects with TM, a maximum of 3 males (37.5%) belonged to the age-group 51-60 years and minimum (0%) to the age-group ≥ 61 years. However, a maximum of 4 females (44.44%) belonged to the age-group 21-30 years and minimum of one female (11.11%) to the age-groups of 31-40, 41-50 and 51-60 years.

DISCUSSION

Tori are nodular protuberances that are composed of mature bone, the exact designation of which depends on their anatomic position (Sisman, 2008). The majority of this asymptomatic, benign bony outgrowth remains undisturbed over the patient's life time. However the tori occasionally need to be removed. Analysis of prevalence of torus palatinus and torus mandibularis depending on the gender, revealed that the prevalence was higher among women than men and this result was explained by the recent theory of the cause of its occurrence due to genetic and environmental factors so the differences in these factors during life and its effect on the women more than men, so the differences happened between women and men (Eggen, 1994).

These results agreed with that of Eggens *et al* (Eggen, 1994), and Shah *et al* (Shah, 1992), while this disagrees with Haugen (Haugen, 1992) and Kerdpon (Kerdpon, 1999) who found that torus palatinus was more in female while the torus mandibularis is more predominant in male than female. The majority of torus palatinus was present in the age group between 21-30 years, while the torus mandibularis increased with the increase in age and the highest percentage was found in age of 51-60 years. These results maybe explained due to the increase in the force on the lower arch (mandible) due to bruxism and other parafunction activity where the effect appear on the mandible more than maxilla, these results agreed with that found by Haugen (Haugen, 2012; Ismail, 2007).

Table 1. Prevalence of Tori according to age

Age(years)	No.	No. of patients with Tori	Prevalence %
21-30	110	11	10
31-40	90	5	5.55
41-50	60	9	15
51-60	60	6	10
≥ 61	30	2	6.66
Total	350	33	9.42

Table 2. Distribution of torus palatinus and torus mandibularis according to age and sex

Age groups	Torus palatinus			Torus mandibularis		
	Male n (%)	Female n (%)	Total n (%)	Male n (%)	Female n (%)	Total n (%)
21-30	3 (33.33)	2 (28.57)	5 (31.25)	2 (25)	4 (44.44)	6 (35.29)
31-40	1 (11.11)	2 (28.57)	3 (18.75)	1 (12.5)	1 (11.11)	2 (11.76)
41-50	3 (33.33)	3 (42.85)	6 (37.5)	2 (25)	1 (11.11)	3 (17.64)
51-60	2 (22.22)	0 (0)	2 (12.5)	3 (37.5)	1 (11.11)	4 (23.52)
≥ 61	0 (0)	0 (0)	0 (0)	0 (0)	2 (22.22)	2 (11.76)
Total	9 (100)	7 (100)	16 (100)	8 (100)	9 (100)	17

Table 3. Prevalence of tori in the study population according to location

location	Male n(198) %	Female n(152) %	Total n(350) %
Torus palatinus	9 (4.54)	7 (4.60)	16 (4.75)
Torus mandibularis	8 (4.04)	9 (5.92)	17 (4.85)
Total	17 (8.58)	16 (10.52)	33 (9.42)

Table 3 showed that out of 350 subjects that included in this study, 17 males had tori, which constitutes (8.58%) of male subjects, and 16 females had tori which constitutes (10.52%) of female subjects.

Conclusion

The result of present study showed that the prevalence of tori in kurdis population is low, and the incidence of tori is higher in females when compared to males. The incidence of torus

palatinus is higher in younger age group while there is a trend toward higher prevalence of torus mandibularis with increasing age. It seems to be occurrence of torus mandibularis are nearly the same.

REFERENCES

- Castro Reino, O., Perez Galera, J., Perez Cosio Martin, J., Urbon Caballero, J. 1990. Surgical techniques for the exeresis of torus, both palatal and mandibular. We observe indications, contraindications and complications as well as enumerate all the right events to realize correctly the said techniques. [Surgery of palatal and mandibular torus]. *Rev Actual Odontoestomatol Esp.*,50:47-50, 53-6.
- Eggen, S., Natvig, B. 1994. Concurrence of torus mandibularis and torus palatinus. *Scand J Dent Res.*, Feb, 102(1): 60-3.
- Eggen, S., Natvig, B., Gasemyr, J. 1994. Variation in torus palatinus prevalence in Norway. *Scand J Dent Res.*, Feb: 102(1): 54-9.
- Gorsky, M., Bukai, A., Shohat, M. 1998. Genetic influence on the prevalence of torus palatinus. *Am J Med Genet.*, 75: 138-40.
- Gorsky, M., Raviv, M., Kfir, E., Moskona, D. 1996. Prevalence of toruspalatinus in a population of young and adult Israelis. *Arch OralBioI.*, 41:623-5.
- Haugen, L.K. 1992. Palatine and mandibular tori. A morphologic study in the current Norwegian population. *Acta Odontol Scand*, 50:65-77.
- Haugen, L.K. 1992. Palatine Mandibular tori. Morphologic study in the current Norwegian population. *Acta Odontol Scand*, Apr: 50(2): 65-77.
- Ismail, I.J., Hamad, T.I. 2007. Prevalence of torus palatinus and torus mandibularis in a sample of Baghdad Population. *J BaghColl Dentistry*, 19(1): 42-46.
- Johnson, O.M. 1958. The tori and masticatory stress. *J Prosthet Dent*, Nov 9(6): 975-7
- Kerdpon, D., Sirirungrojying, S. 1999. A clinical study of oral tori in southern Thailand: prevalence and the relation to Para functional activity. *Eur J oral Sci.*, Feb, 107(1): 9-13.
- Rakprasitkul, S., Rojvanakarn, M. 1991. Torectomy wound protection splint. *J Dent Assoc Thai*, May-Jun, 41(3): 109-14.
- Reichart, P.A., Neuhaus, F., Sookasem, M. 1988. Prevalence of toruspalatinus and torus mandibularis in Germans and *ThaisCommun Dent OraJ Epidemiol*, 16:61-4.
- Seah, Y.H. 1995. Torus Platinus and torus mandibularis: a review of the literature. *Aust Dent J.*, Oct: 40 (5): 318-21.
- Shah, D., Sanghavi, S.J., Chawda, J.D., Shah, R.M. 1992. Prevalence of torus palatinus and torus mandibularis in 1000 patients, *Indian J Dent Res*, Oct, Dec , 3(4): 107-10.
- Sisman, Y., Ertas, E.T., Gokce, C., Akgunlu, F. 2008. Prevalence of torus palatinus in cappadocia region population of Turkey. *Eur J Dent.*, 2: 269-275.
- Vidic, B. 1966. Incidence of torus palatinus in Yugoslav skulls. *J Dent Res.*, 45:1511-1515.
