INTRODUCTION

The torus palatinus (TP) is a slowly growing, flat-based bony protuberance or excrescence which occurs in the midline of the hard palate. Torus mandibularis (TM) is a bony protuberance located on the lingual aspect of the mandible, commonly in the canine and premolar areas. Exostosis are multiple bony nodules which occur along the buccal aspect of the maxilla or mandible, usually in the premolar and molar areas. Tori and exostoses are nodular protuberances of mature bone, the precise designation of which depends on anatomic location. TP and TM are the two most common intraoral osseous outgrowths as compared to exostoses. TP is to be differentiated from palatal exostoses which are found on the palatal aspect of the maxilla and the most common location is the tuberosity area. The histological features of tori and other types of exostoses are identical. These are described as hyperplastic bone, consisting of mature cortical and trabecular bone with occasional osteoblastic activity or even hemopoietic marrow. The concurrence and coexistence of tori and exostoses have been investigated. In cases with multiple lesions syndromic relationships with multifactorial genetic and environmental factors have been suggested.

Although a benign lesion but the significance of its prominence with others factors, can be considered while making decisions for testing bone density in otherwise normal postmenopausal women.

The etiology of tori has been considered multifactorial and is attributed to genetic factors, environmental factors, masticatory hyper function, and...
continued growth\(^{2,20}\). The reported prevalence of tori varies among studies, probably because of racial or ethnic differences\(^{10,11,12,21,25}\). 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.

**SUBJECTS AND METHODS**

Our sample consisted of randomly selected 300 Indonesian dental patients attending the Oral Surgery Clinic in the Pakistan Medical Mission Field Hospital established at Tirtomarto; Chawas district Kalatan, Central Java, Indonesia for earthquake relief duty in Jun-Jul 2006. In order to give equal weight to all genders, an almost equal number of cases for each category were selected at random. The subjects were divided into age groups: 1 to 9, 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 to 89 and 90 to 99 years. All subjects were examined by one observer (A. I.) for the presence or absence of tori. Diagnosis of TP was made by clinical inspection and palpation. Questionable tori were recorded as not present. The tori were recorded in relation to sex and age, and data subsequently subjected to statistical analysis. The chi-squared test was used to compare differences between sex and age groups. Significance for differences between some groups was set at \( P < .05 \). In one female patient a palatel torus was excised because of her aesthetic concern pointed out by her friend. The specimen was preserved in 10% formalin for histopathology as an academic case in Department of Pathology Army Medical College.

**RESULTS**

Out of 300 subjects studied 164 (54.7%) were males and 136 (45.3%) were females (Fig 1). A total of 67 (22.3%) exhibited TP. Out of these 67 subjects 31 were males and 36 were females. Table 1 describes the decade wise age group and relationship of torus with each age group. The histopathology report of the excised TP showed it to be a normal (mature cortical and trabicular) bone.

![Fig. 1. Gender wise Distribution of Study](image)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<td>.3</td>
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</table>

**TABLE 1: DECADE WISE FREQUENCY OF TORUS PALATINUS**
DISCUSSION

Our results show a high number of individuals having torus palatinus (22.3%). It was more common in women (54.7%) as compared to men (45.3%) and it was more frequently seen in 3rd, 4th and 5th decades. The prevalence of Tori varies among studies probably because of racial divergence or ethnic groups. It has been reported as 29.8% among Jordanian population, without significant difference in the prevalence between males and females. In Thailand, however TP has been seen among 67.7% of patients attending a dental clinic with a male to female prevalence ratio of 1:1.4. This study has reported a very high prevalence. In Israel the lesion was noted in 21% of individuals with non significant differences among different age groups, however the increase in the size was described to be associated with increase in age. Other studies have reported that tori are frequently observed in young and in middle aged persons with high prevalence in females. This has also been observed in our study. A study conducted in India reported prevalence of TP as 9.5% and more common occurrence in females as compared to males. Moreover, this study also reported very rare occurrence before 10 years of age, and this phenomenon has also been observed in our study. Our results are also comparable with the results of a study comprising of a group of 530 natives of Central American countries, where TP has been observed to be more common in female than males. The prevalence of TP is more in Mongoloid than in Caucasoids. Similar relationship has also been described between African Americans and Caucasian women. Studies show that the oriental nose projects less from the face as compared to Caucasian nose. This may result in a tendency of compensatory accumulation of bone at cruciform suture leading to development of TP. On the basis of ours and other available studies, it is postulated that there is inverse relationship between the projection of nasal bridge and TP with associated interplay of multifactorial genetic and environmental factors.

CONCLUSIONS

Torus Palatinus are normal bony growths. The prevalence varies among different communities and races with a high percentage in oriental population as compared to Caucasian. Our findings in Indonesian patients agree with other studies carried out in the same region. Routine excision surgeries of these lesions should be avoided unless indicated by prosthodontic and aesthetic needs. It is postulated that there is an inverse relationship between the projection of nose and the development of torus palatinus along with interplay of other factors.

REFERENCES

5. Gnepp DR 2001 Diagnostic surgical pathology of the head and neck. Philadelphia: Saunders; 159-161
Prevalence of Torus Palatinus