

## Prevalence of dental torus in patients receiving care

### Prevalencia de torus dentales a pacientes con atención odontológica

ZAPATA-MAY, Rafael†\*, ROSADO-VILA, Graciella, OROZCO-RODRIGUEZ, Rubén and VIDAL-PAREDES, Jorge

*Universidad Autónoma de Campeche, Facultad de Odontología, y Facultad de Contaduría, San Francisco de Campeche, México.*

ID 1<sup>st</sup> Author: *Rafael, Zapata-May* / **ORCID:** 0000-0000-0002-3750

ID 1<sup>st</sup> Co-author: *Graciella Josefa, Rosado-Vila* / **ORCID:** 0000-0000-0002-8688

ID 2<sup>nd</sup> Co-author: *Ruben, Orozco-Rodriguez* / **ORCID:** 0000-0002-5425-0107

ID 3<sup>rd</sup> Co-author: *Jorge, Vidal-Paredes* / **ORCID:** 0000-0002-4474-3733

**DOI:** 10.35429/JOHS.2023.29.10.28.32

Received July 25, 2023; Accepted December 30, 2023

#### Abstract

**Introducción.** Dental torus is a benign bone growth, palatal or lingual, lobulated or nodular in shape, which generally does not present symptoms. In some cases it may represent an oral pathology, harmful to patients who need some type of prosthesis. **Objective.** To identify the prevalence of dental tori in patients from the Faculty of Dentistry of the Autonomous University of Campeche. **Methodology:** A descriptive cross-sectional study was carried out on 81 patients who attended the Clinics of the Faculty of Dentistry of the Autonomous University of Campeche. **Methods.** A descriptive, cross-sectional study was carried out on 81 patients who attended the clinics of the Faculty of Dentistry of the Autonomous University of Campeche, using convenience sampling. **Results.** 38.3% were women, and 61.7% were men. Regarding age, 87.7% are patients between 20 and 50 years old, 7.4% are over 50 years old, and 4.9% are people under 20 years old. 54.3% of the sample presented torus, being more frequent in the upper jaw 54.9%. **Conclusions.** There is a high prevalence of 54.3% of oral torus in patients who attend the Faculty of Dentistry of the Autonomous University of Campeche. These do not affect the quality of life on their own; however, when the torus interferes with the patient's rehabilitation treatment, it is important to provide information about their therapeutic options, such as surgical excision, which could be necessary when using a total or removable prosthesis.

#### Resumen

**Introducción.** El torus dental es aquel crecimiento óseo benigno, de ubicación palatina o lingual, de forma lobulada o nodular, que generalmente no presenta sintomatología. En algunos casos puede representar una patología oral, perjudicial para los pacientes que necesiten algún tipo de prótesis. **Objetivo.** Identificar la prevalencia de los torus dentales en pacientes de la Facultad de Odontología de la Universidad Autónoma de Campeche. **Metodología** se realizó un estudio transversal descriptivo en 81 pacientes que acudieron a las Clínicas de la Facultad de Odontología de la Universidad Autónoma de Campeche. **Métodos.** Se realizó un estudio descriptivo, de corte transversal en 81 pacientes que acudieron a las clínicas de la Facultad de Odontología de la Universidad Autónoma de Campeche, mediante muestreo por conveniencia. **Resultados.** El 38.3% fueron mujeres, y el 61.7% fueron hombres. Respecto a la edad el 87.7% son pacientes entre 20 a 50 años, 7.4% más de 50 años, y el 4.9% personas menores de 20 años el 54.3% de la muestra presentó torus, siendo más frecuente en el maxilar superior 54.9%. **Conclusiones.** Existe una alta prevalencia de 54.3% de torus bucales en pacientes que acuden a la Facultad de Odontología de la Universidad Autónoma de Campeche. Estos no afectan la calidad de vida por sí solos, sin embargo, cuando el torus interfiere con el tratamiento rehabilitador del paciente, es importante proveerle información sobre sus opciones terapéuticas, como la exéresis quirúrgica, que podría necesitarse al uso de alguna prótesis total o removible.

**Dental torus, Oral health, Prevalence**

**Torus dentales, Salud oral, Prevalencia**

**Citation:** ZAPATA-MAY, Rafael, ROSADO-VILA, Graciella, OROZCO-RODRIGUEZ, Rubén and VIDAL-PAREDES, Jorge. Prevalence of dental torus in patients receiving care. *Journal of Health Sciences*. 2023. 10-29:28-32.

\* Correspondence to Author (E-mail: razapata@uacam.mx)

† Researcher contributing as First Author

## Introduction

Dental torus, also called exostosis or hyperostosis, is a benign bony growth, located palatally or lingually, lobulated or nodular in shape, which generally does not present symptoms. Different types of exostoses have been described; torus palatinus TP torus mandibularis TM are two of the most common intraoral exostoses, other types of exostoses affecting the jaws are less frequent, one or more torus may be present. In some cases it can represent an oral pathology, detrimental to patients who need some type of prosthesis. It is considered to evolve throughout life, and although its aetiology is unknown, different multifactorial theories have been formulated, including hereditary, genetic, functional and para-functional factors. One of them mentions that it may be the result of chronic mild periosteal ischaemia, secondary to gentle pressure of the nasal septum in the case of torus palatini, and in the case of torus mandibularis, by the action of the torsional force of the arch of the mandible or by the lateral pressure of the underlying teeth. In recent years, the prevalence of palatal and mandibular torus has been sought in patients requiring dental care in university dental clinics in Campeche. The prevalence of torus is close to 10% of the world's population. It is estimated that between 20% to 25% of the population, including Asians, Native Americans and Eskimos, have torus, with a higher incidence in men than in women in a 4:1 ratio, and with a higher frequency in patients between 35-65 years Raldi et al. In the Caucasian race there is a variation from 1 to 7%. In North America the general population is 8%, the variation in frequency of mandibular torus in the foreign literature is from 1 to 80% Arevalo 2005.

## Problem statement

Exostoses also known as hyperostoses are benign bony protrusions that rise above the central lamina, frequently affecting the mandibular skeleton. Different types of exostoses have been described; torus palatinus and torus mandibularis are two of the most common intraoral exostoses, other types of exostoses affecting the jaws are less frequent, one or more torus may be present, although they are very rare in the same individual.

It is considered a slow growing anomaly throughout life, it may be the result of chronic mild periosteal ischaemia secondary to gentle pressure from the nasal septum, from the action of the torsional force of the mandibular arch or mandibular torus, from the lateral pressure of the underlying teeth buccal exostosis, but this is highly speculative Dentistry, it is sought that patients can have the maximum degree of functionality with respect to their dental services.... However, in recent years the prevalence of palatal torus has been sought in patients requiring dental services.

What is the prevalence of torus in dental care patients?

## *Rationale*

A serious problem that occurs in patients who come to the clinics of the Faculty of Dentistry is the presence of torus palatineus, as this condition can cause problems before, during and after dental treatment. The clinical manifestations that may occur due to the presence of this lesion do not aggravate the state of oral health, however, it can cause discomfort to the patient, especially the patient who uses a prosthesis, this would be in the case that the volume of the lesion is very predominant. Palatal torus may or may not become a complication in dental treatment, as in some cases surgery may be required. Since they can present a problem, discomfort or in some cases even pain if a prosthesis is used, they are usually asymptomatic, for the most part, the aim is to get to know the prevalence of torus, in order to be able to provide a better service and offer better care to patients. It will improve prevention and, more than anything else, raise awareness of this pathology so that the disease can be spread so that patients who have no knowledge of it can learn how to treat and manage the lesion in a better way. In the event that they cannot afford surgery to remove the lesion, they can learn how to manage it or learn how to lead a better quality of life.

*Theoretical framework*

Since the last century, different authors, such as Fox (1809) and Danniels (1884), have tried to define torus from a clinical and histopathological point of view, while in the 1950s, Woo (1950) defined it according to its location. According to Shafer and Levi in 1983 and Stafne in 1987, they define torus as protuberances or exostoses found locally in the buccal region, while Antoniadis et al. and Sapp et al. in 1998 agree that torus are non-neoplastic excrescences, which can be located in the maxillae from the same bone. Although their aetiology is unknown, different multifactorial, but not exclusive, theories have been formulated. Torus have been classified according to their size, location and number. Small tori are no larger than 3 mm, while medium-sized tori range from 3 to 5 mm. The large ones, on the other hand, are characterised by reaching sizes greater than 5 mm Seah, 1995. Palatine torus: in the midline of the hard palate. Mandibular torus: on the lingual surface of the lower premolar region, bilateral in 80% of cases Exostosis: on the vestibular surface of the vestibular bone table of both maxillae in the premolar and molar region. Mandibular torus is a bony protrusion on the lingual surface of the mandible. It is present in 8% of the population and is of unknown aetiology but some authors report that it is produced by bone reaction in response to the stress of chewing, bruxism or as a hereditary pattern which is more common in females. Torus palatini can appear as an outward growth located in the midline of the palate and can take various forms such as flat, fusiform, nodular or lobular. Its mucosa is intact, although it can sometimes appear pale. If the mucosa is traumatized, it ulcerates easily and takes a long time to heal. The size of the protuberance can vary, ranging from those that can only be detected by palpation to those that occupy the entire palate and interfere with phonation. Their location can vary, although they are frequently observed in the central part of the midline, they can also be confined to the anterior region or the posterior part of the palate and in some cases the entire midline from the anterior palatine fossa to the end of the hard palate can be seen Stafne, 1987. Its growth is slow until the third decade of life and then stabilises.

**Methodology**

Descriptive, cross-sectional study of 81 patients who attended the clinics of the Faculty of Dentistry of the Autonomous University of Campeche, by means of convenience sampling. The research was carried out virtually with an online form which was completed by patients attending the dental clinic of the Autonomous University of Campeche with patients who met the inclusion criteria. Probabilistic, simple random sampling, i.e. each individual in a population has an equal chance of being chosen. Random or simple random sampling is the determination of sample size using a sample size formula for a proportion of a known population. A representative sample was taken of 81 patients over 18 years of age, of both sexes, attending the dental school clinics. Inclusion criteria were used, which included the community in general who attend the dental school as patients, of either sex, regardless of age, patients who gave their authorisation to be part of the study and signed the validly signed letter of consent. Exclusion criteria were patients, students under 20 years of age, patients and students over 50 years of age.

**Results**

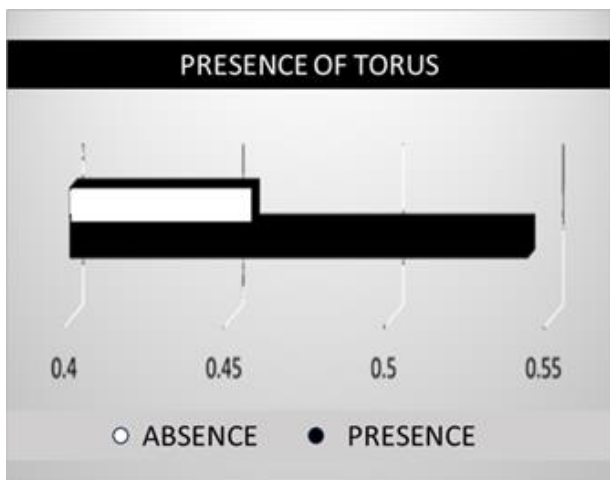
The survey was applied to 81 people, the data, collecting form was applied in "Google forms", where the data were collected and later corrected. After we conducted the surveys we proceeded to pass all the data collection to the SPSS program. It was coded according to the study variables. Of the sample of 81 people, 38.3% were men, and 61.7% were women. Of the sample, 54.3% presented torus, with a higher frequency in the maxillary maxilla with 53.9%. Of those who presented torus, 78.3% were not suggested to undergo excision as part of a rehabilitative treatment, and 35.3% presented pain related to the lesion at some point in its development. Regarding age, 87.7% of patients were between 20 and 50 years old, 7.4% were over 50 years old, and 4.9% were younger than 20 years old. In terms of location, 54.9% are located in the maxilla and 45.1% in the mandible. In terms of quantity 47.1% have one torus lobe, 35.3% have two, and 17.6% have more than three. Time of existence 19.6% from 3 to 6 months, 31.4% from 6 months to 1 year, 37.3% from one year to 3 years, and 11.8% more than three years.

Other variables measured were: grinding, 46.6% do grind, and 53.4% do not; pain during the time of existence of the lesion, 64.7% do not and 35.3% do; use of dental prosthesis, 98.6% do not, while 1.4% do; suggestion of surgery or excision, 68.7% did not receive a suggestion by the doctor, 16.4% did, and the rest was a maybe; and pain on prosthetic use, 87.7% did not, and 12.3% did.

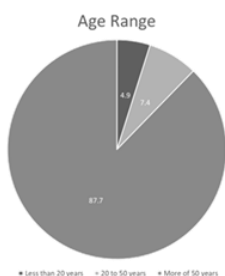
**Conclusion**

There is a high prevalence of 54.3% of oral torus in patients attending the Faculty of Dentistry of the Autonomous University of Campeche, with a ratio of 1:1.6, with a greater predisposition for the female gender. These do not affect the quality of life by themselves, however, when torus interferes with the rehabilitative treatment of the patient, it is important to provide information about the therapeutic options, such as surgical excision, which may be necessary or the use of a total or removable prosthesis..

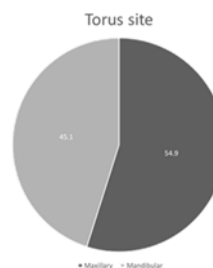
**Annexes**



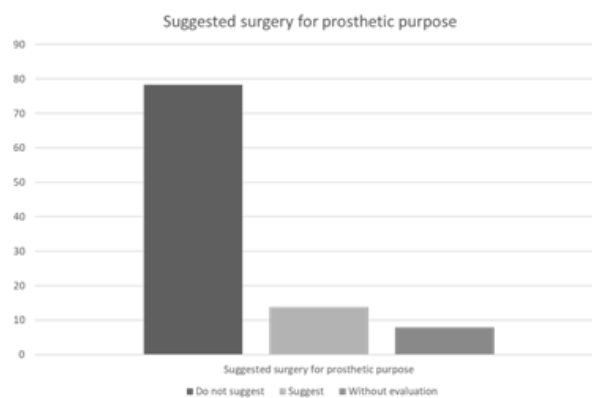
**Figure 1** Presence of torus



**Graphic 1** Age range



**Graphic 2** Location of the torus



**Graphic 3** Suggested surgery for prosthetic reasons

**References**

1. Budtz-Jorgensen, E. Materiales y métodos para limpiar dentaduras. *J ProsthetDent.* 1979; 42: 619-623
2. Atlas de salud bucodental. (2015), El desafío de las enfermedades bucodentales – Una llamada a la acción global (2ª. Ed.). Ginebra: Federación Dental Internacional (FDI).
3. Higashida BY. (2015). Educación para la salud. (3rd. ed.). México: McGraw-Hill.
4. Gutiérrez V; León M, Antonio R. (2015). Edentulismo y necesidad de tratamiento protésico en adultos de ámbito urbano marginal. *Rev. Estomatol. Herediana*, 25 (3) ,179-186.
5. Luengas-Aguirre, María Isabel. (2015). Aspectos sociales y biológicos del edentulismo en México: un problema visible de las inequidades en salud. *Ciencias Clínicas* 16(2).
6. Iturriaga, María. (2017). Necesidad real y sentida de prótesis estomatológica en pacientes mayores de 15 años. *Revista CCM*, 21 (1), 44-5.

7. Bermúdez, S., González, A., Márquez, J., Restuccia, G., Kammann, M., Zambrano, O., Flores-Hidalgo, A., Fariñas, G., Guerra, ME, Osorio, A.Y., Carrasco Colmenares, W. (2014), Necesidades protésicas de la población de río chico edo. Miranda, agosto - noviembre 2010. Acta Odontológica Venezolana,52, 1.
8. Medina, F; Navarro, E; Pacheco N. (2010) Prótesis parcial removible. México: Editorial Trillas Sa De Cv.
9. Rosenstiel S FL. (2009). Prótesis fija contemporánea. (4th ed.) Barcelona: Elsevier.
10. Paz, M; Quenta, E. (2017). Postes Intrarradiculares. Acta clínica médica.
11. Vieira J. (2009). Análisis de las necesidades protésicas de acuerdo a la complejidad del tratamiento de los pacientes que asisten a la Universidad Central de Venezuela en el período 2006 - 2007. Acta Odontológica Venezolana, 47 (2), 2.
12. Shillingburg Herbert T. (2002). Fundamentos de prostodoncia fija.(3rd.) Barcelona: Quintessence S.L;
13. Moreno, D., Rodríguez, A, y Tamayo, L. (2014) Necesidad de prótesis estomatológica. Multimet. 21 (1).
14. Cuadrado, M. (2016) Necesidad de rehabilitación protésica en una población seleccionada de salud. Ciencias médicas. 20 (4).
15. William Arce Ramirez, Damaris Peraza Valverde “Propuesta de un Plan de Mejora de la Salud bucodental en el Hogar del Adulto Mayor Alfredo y Delia González Flores de San Pablo de Heredia” San José, Costa Rica mayo, 2012 Instituto Centroamericano de Administracion pública icap”
16. Limuna T, Arai Y, Abe Y, Takayama M, Fukumoto M, Fuki Y, et al. La dentadura postiza durante el sueño duplica el riesgo de neumonía en los ancianos. J Dent Res. 2015; 94 : 28S – 36S. doi: 10.1177 / 0022034514552493 {Artículo gratuito de PMX} {PubMed} T. AxéllUn estudio de prevalencia de lesiones de la mucosa oral en una población sueca adulta. Tesis, Odontol Revy Suppl , 36 ( 1976 ) , págs. 1 - 103
17. JD Shulman , MM Beach , F. Rivera-HidalgoLa prevalencia de lesiones de la mucosa oral en adultos estadounidenses: datos de la Tercera Encuesta Nacional de Examen de Salud y Nutrición, 1988-1994, J Am Dent Assoc , 135 ( de 2004 ) , pp. 1279 – 1286
18. Al-Mobeeriek , AM AIDosariPrevalencia de lesiones bucales entre (48%) pacientes dentales, Ann Saudi Med , 29 ( 2009 ) , págs. 365 - 368
19. Oral mucosal lesions and developmental anomalies in dental patients of a teaching hospital in Northern Taiwan, Meng-Ling Chiang, Yu-Jia Hsieh, Yu Lun Tsen, Jr-Rung Lin e Chun-Pin Chiang.
20. Cuestionario básico y criterios metodológicos para las Encuestas sobre Condiciones de Trabajo, Empleo y Salud en América Latina y el Caribe, Fernando G. Benavides.
21. Oral bony outgrowths: Prevalence and genetic factor influence. Study of twins, Adomas Auškalnis, Olaf Bernhardt, Eglė Putnienė, Antanas Šidlauskas, Irena Andriuškevičiūtė, Nomeda Basevičienė.