

The Contribution of Computed Tomography to the Diagnosis of Torus Palatinus: Two Clinical Cases Observed in Bouaké

Bravo-Tsri Akoli Eklou Baudouin^{1,2*}, Yao Brou Lambert^{1,2}, Soro Malick^{1,2}, Kouassi Kouamé Paul Bonfils^{1,2}, Sanogo Sara Carole^{1,2}, Yao Yah Celine¹, Kouakou Bouassa Davy Melain^{1,2}, Kouadio Allou Florent^{1,2}, Tanoh Kesse Emile^{1,2}, Issa Konaté^{1,2}

¹Radiodiagnostics and Medical Imaging Department, Bouaké University Hospital, Bouake, Ivory Coast

²Faculty of Medical Sciences, Alassane Ouattara University of Bouaké, Bouake, Ivory Coast

Email: *bravotsri2006@gmail.com

How to cite this paper: Baudouin, B.-T.A.E., Lambert, Y.B., Malick, S., Bonfils, K.K.P., Carole, S.S., Celine, Y.Y., Melain, K.B.D., Florent, K.A., Emile, T.K. and Konaté, I. (2026) The Contribution of Computed Tomography to the Diagnosis of Torus Palatinus: Two Clinical Cases Observed in Bouaké. *Open Journal of Radiology*, **16**, 44-48.

<https://doi.org/10.4236/ojrad.2026.161005>

Received: January 19, 2026

Accepted: March 14, 2026

Published: March 17, 2026

Copyright © 2026 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Introduction: Oral exostoses are exophytic bone growths that develop from the jawbones. Four main types are described according to their location: torus palatinus, palatal exostosis, mandibular torus, and vestibular exostosis. These slow-growing, progressive formations are considered benign, non-neoplastic and non-pathological. **Objective:** The aim of this study is to describe the CT scan characteristics of two cases of torus palatinus diagnosed in our practice and to compare these observations with data from the literature. **Patients and Observations:** Two patients, a 55-year-old man and a 49-year-old woman, were referred by the stomatology department of the Bouaké University Hospital to the Medical Imaging Centre for maxillofacial computed tomography as part of an assessment of palatal masses. Clinical examination revealed a median oval, bumpy, painless, firm swelling without ulceration on each side of the intermaxillary suture, limited to the hard palate. No history of oral exostosis was reported in their respective families. Computed tomography scans revealed a spontaneously hyperdense, oblong, bifid formation with corticospungy density, developing at the expense of the bony palate. These findings strongly pointed to a diagnosis of torus palatinus in both cases. **Conclusion:** The palatal torus is a relatively common benign lesion that is still underdiagnosed in some regions. Computed tomography is the gold standard imaging test for its identification, thanks to typical CT scan findings. However, a definitive diagnosis is still made by histopathological examination, especially in cases of doubt.

Keywords

Oral Exostosis, Torus Palatinus, Computed Tomography, Bouaké

1. Introduction

Oral exostoses are exophytic bone growths that develop from the jawbones. Four main types are described based on their anatomical location: palatal torus, palatal exostosis, mandibular torus, and vestibular exostosis [1] [2]. These formations are considered benign, non-neoplastic, and non-pathological. Their growth is slow and gradual. They are often discovered incidentally during a routine clinical examination, or when functional disorders occur, or even during a pre-prosthetic assessment [3]-[5]. The aim of this study is to describe the CT scan characteristics observed in two cases of palatal torus encountered in our practice and to compare them with data from the literature.

2. Patients and Observations

We report two cases of palatal torus observed at the Bouaké Medical Imaging Center. The patients were a 55-year-old male merchant and a 49-year-old female homemaker, both referred by the stomatology and maxillofacial surgery department of the Bouaké University Hospital for maxillofacial computed tomography in the context of progressively developing functional disorders. The female patient presented with chewing difficulties associated with dysphagia, while the male patient reported a speech disorder. Clinical examination revealed that both patients had an oval, median, bumpy, painless, firm, non-ulcerated swelling of the palate, located on either side of the intermaxillary suture and strictly limited to the hard palate. In the male patient, this swelling was accompanied by bilateral paramedian formations with similar characteristics (**Figure 1**).

Neither patient had any history of oral deformity or known familial oral exostosis. This was the first maxillofacial CT scan for both patients. The CT scan revealed a spontaneously hyperdense mass in both patients, with a density comparable to that of cortical bone of approximately 1100 Hounsfield units, roughly oblong in shape, median and bifid, developing in the bony palate, measuring 24 mm in anteroposterior diameter and 13 mm in transverse diameter and 9 mm in craniocaudal diameter; in the female patient, 26 mm in anteroposterior diameter, 16 mm in transverse diameter and 8 mm in craniocaudal diameter. These findings were suggestive of a palatal torus (**Figure 2** and **Figure 3**). In the male patient, bilateral palatal exostosis were also identified, with the same densitometric characteristics measuring, on the right, 20 mm in anteroposterior diameter, 11 mm in transverse diameter and 9 mm in craniocaudal diameter; on the left, 16 mm in anteroposterior diameter, 7 mm in transverse diameter and 10 mm in craniocaudal diameter (**Figure 3**). Surgical management, consisting of the removal of the exostoses, was suggested to the patients. However, both declined this option,

which meant that no pathological analysis could be performed.

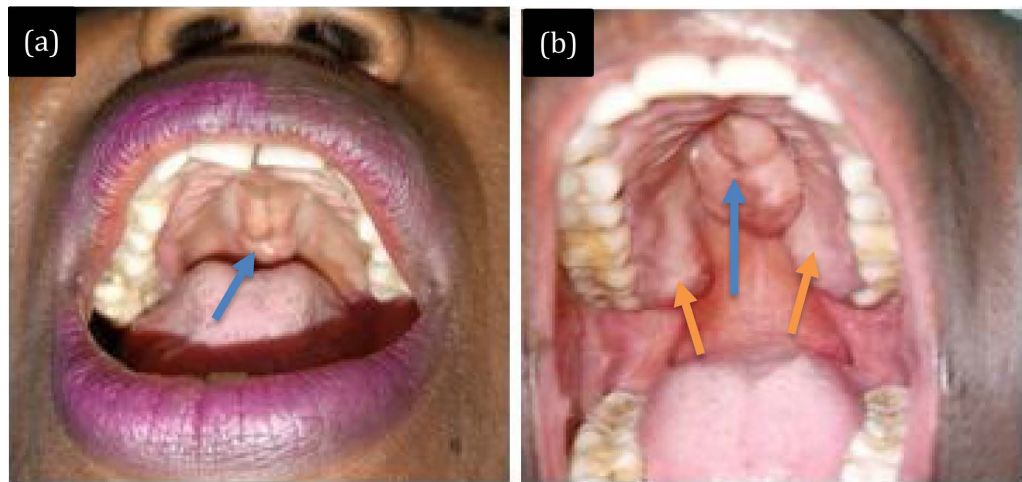


Figure 1. Intraoral clinical examination; (a) palatal torus (blue arrow). (b) palatal torus (blue arrow) and bilateral palatal exostosis (orange arrow).

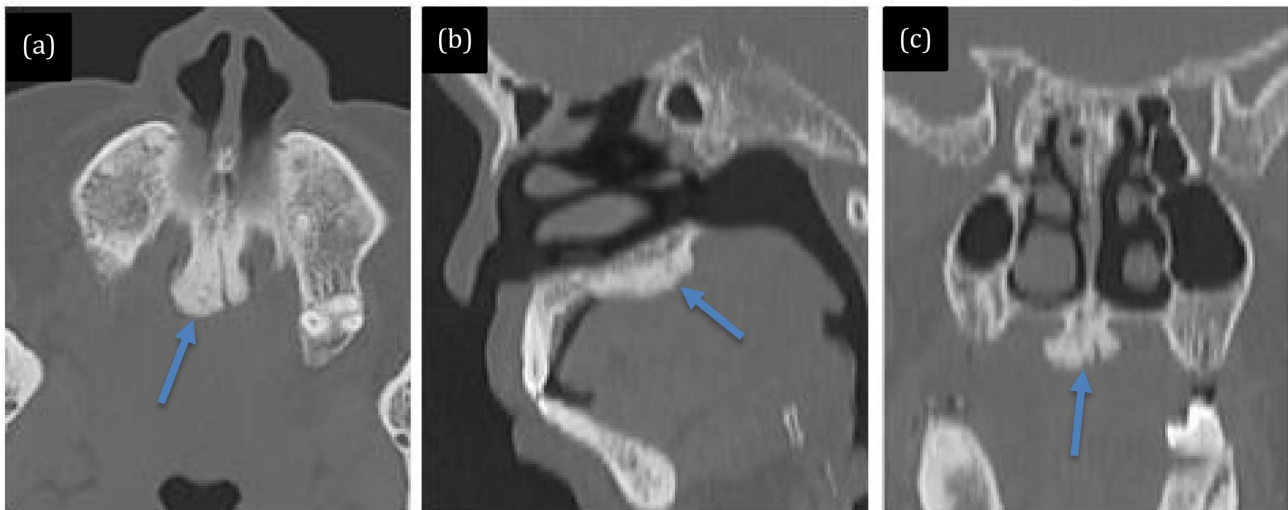


Figure 2. Computed tomography scan of an isolated palatal torus. (a) axial section, (b) sagittal reconstruction, (c) coronal reconstruction. Palatal torus (blue arrow).

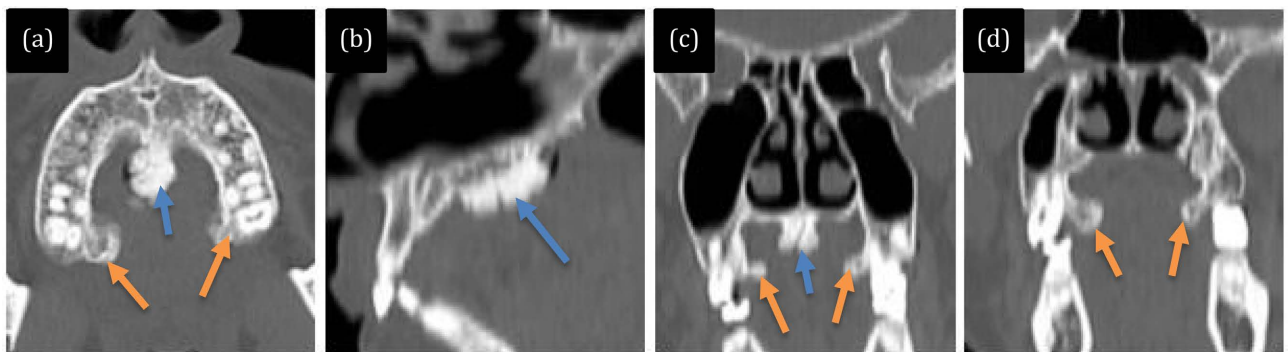


Figure 3. Computed tomography scan of a palatal torus associated with bilateral palatal exostosis. (a) axial section. (b) sagittal reconstruction. (c) and (d) coronal reconstructions. Palatal torus (blue arrow); bilateral palatal exostosis (orange arrow).

3. Discussion

The prevalence of palatal torus is estimated at around 10% in the general population, with variations according to age, gender, and ethnicity [1] [2]. The age group most frequently affected is between 39 and 59 years old [2]. The etiology of palatal torus remains unclear, although several hypotheses involve both genetic and environmental factors [1] [3] [6]. Some authors suggest autosomal dominant inheritance [3] [6]. Palatal torus may be associated with palatal exostoses and multiple nodular bone formations, although these are less common. They account for between 8.1% and 56% of oral exostosis, depending on the series [4]. Clinically, palatal torus manifests as a hard bony swelling covered with a thin, pinkish mucosa. In most cases, these formations are asymptomatic and discovered incidentally [2]. However, when they are large or poorly positioned, they can cause functional disorders such as dysphagia, dysphonia, or discomfort when chewing [5] [6]. Their relief can also promote food retention, complicating oral hygiene and leading to halitosis [5] [6]. Due to the thinness and poor vascularization of the overlying mucosa, abrasions or ulcerations may occur, increasing the risk of complications, particularly in patients treated with head and neck radiation therapy or bisphosphonates [5] [6]. The symptoms presented by our two patients—dysphagia, chewing and phonation disorders—are consistent with the clinical pictures described in the literature. Computed tomography is the examination of choice for the diagnosis of a palatal torus. It allows visualization of spontaneously hyperdense, median, oblong, sometimes bifid masses with a density comparable to that of compact bone [6] [7]. Large forms may have a spongy core. The examinations performed in our series showed typical characteristics, with no osteolysis or flame-like appearance. Biopsy is rarely used and is limited to cases of diagnostic uncertainty [1].

The main differential diagnoses are osteoid osteoma, which appears on CT scans as a focal hypodense nidus with peripheral sclerosis, and ossifying fibroma, which appears on CT scans as a lesion associated with the roots of the teeth [8].

Treatment is conservative; however, in cases of significant functional discomfort or in a prosthetic setting, surgical excision may be considered with the aim of restoring the physiology of orofacial functions and/or allowing prosthetic rehabilitation without any associated adverse effects [6] [8] [9].

4. Conclusion

The palatal torus is one of the most common benign exostoses of the oral cavity. Although it is present in our regions, it often remains underdiagnosed due to its asymptomatic nature and lack of awareness. Computed tomography is the gold standard imaging test for its identification, thanks to typical CT scan findings. However, a definitive diagnosis is based on pathological examination, especially in cases of doubt. Although benign, this lesion deserves to be recognised by radiologists in order to avoid unnecessary invasive tests and to better guide management.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Jainkittivong, A. and Langlais, R.P. (2000) Buccal and Palatal Exostoses: Prevalence and Concurrence with Tori. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, **90**, 48-53. <https://doi.org/10.1067/moe.2000.105905>
- [2] Sisman, Y., Ertas, E.T., Gokce, C. and Akgunlu, F. (2008) Prevalence of Torus Palatinus in Cappadocia Region Population of Turkey. *European Journal of Dentistry*, **2**, 269-275. <https://doi.org/10.1055/s-0039-1697391>
- [3] Disha, V., Zaimi, B. and Petrela, E. (2024) Oral Tori Findings in an Adult Albanian Population: A Single-Center Pilot Study. *Dentistry Journal*, **12**, Article No. 242. <https://doi.org/10.3390/dj12080242>
- [4] Hascoet, E., Vaillant, P.Y., Tempescul, A., Darbin, C., Lansonneur, C. and Boisramé, S. (2015) Tori et exostoses multiples: Présentation d'un cas et revue de la littérature. *Médecine Buccale Chirurgie Buccale*, **21**, 19-24. <https://doi.org/10.1051/mbcb/2015003>
- [5] Morrison, M.D. and Tamimi, F. (2013) Oral Tori Are Associated with Local Mechanical and Systemic Factors: A Case-Control Study. *Journal of Oral and Maxillofacial Surgery*, **71**, 14-22. <https://doi.org/10.1016/j.joms.2012.08.005>
- [6] Bouchet, J., Hervé, G., Lescaille, G., Descroix, V. and Guyon, A. (2019) Palatal Torus: Etiology, Clinical Aspect, and Therapeutic Strategy. *Journal of Oral Medicine and Oral Surgery*, **25**, Article No. 18. <https://doi.org/10.1051/mbcb/2018040>
- [7] El Achkar, V.N., Lopes, S.L., Pinto, A.S., do Prado, R.F. and Kaminagakura, E. (2016) Imaging Aspects of Palatal Torus in Cone Beam Computed Tomography and Magnetic Resonance: Case Report. *Acta Stomatologica Croatica*, **50**, 359-364. <https://doi.org/10.15644/asc50/4/10>
- [8] Tamba, B., Dia Tine, S., Barry, B.C.G., Kounta, A., Niang, P.D., Ba, A., *et al.* (2012) Exostoses buccales: Revue de la littérature. *Médecine Buccale Chirurgie Buccale*, **18**, 129-141. <https://doi.org/10.1051/mbcb/2012013>
- [9] Nogueira, A.S., Gonçalves, E.S., Santos, P.S.d.S., Damante, J.H., Alencar, P.N.B., Sampaio, F.A., *et al.* (2013) Clinical, Tomographic Aspects and Relevance of Torus Palatinus: Case Report of Two Sisters. *Surgical and Radiologic Anatomy*, **35**, 867-871. <https://doi.org/10.1007/s00276-013-1114-4>