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Case report

A rare incidental finding of bilateral tonsillolith on routine orthopantomogram

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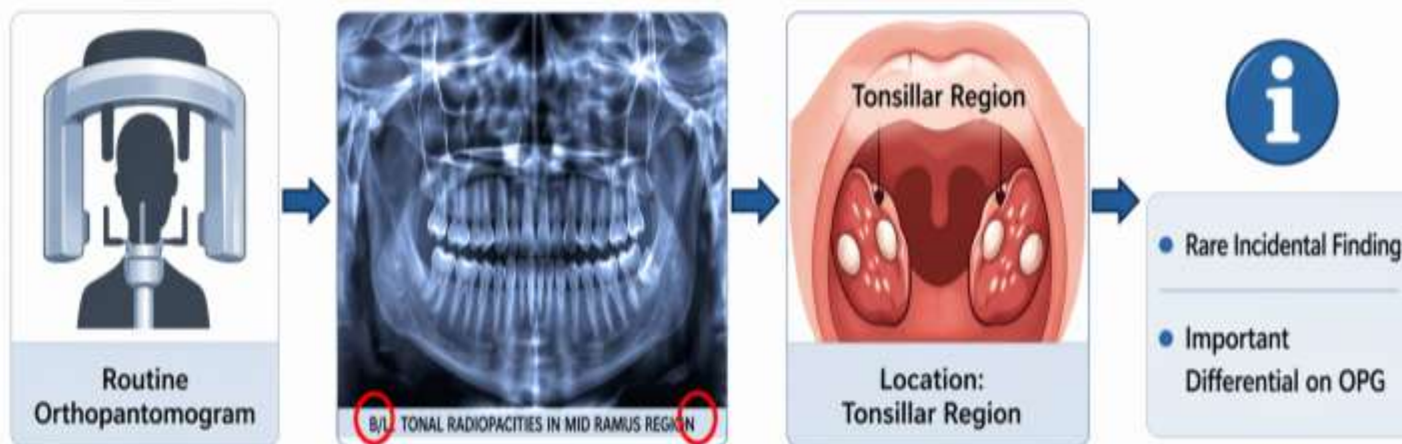
ABSTRACT

Bilateral tonsilloliths are dystrophic calcifications within tonsillar crypts, incidentally detected on panoramic radiographs, emphasising accurate radiographic interpretation and differentiation from other soft-tissue calcifications.



Keywords: Tonsillolith, Panoramic radiograph, Computed tomography, Soft tissue calcification, Radiopaque lesion.

INTRODUCTION

Physiological calcification involves the orderly deposition of calcium salts within the skeletal system. In contrast, the abnormal accumulation of these salts in soft tissues in a disorganised manner is referred to as heterotopic calcification. Based on the underlying mechanism, heterotopic calcification is classified as metastatic, idiopathic, or dystrophic. Metastatic calcification occurs in otherwise normal tissues due to increased serum calcium or phosphate levels. Idiopathic calcification develops in normal tissues despite normal biochemical parameters. Dystrophic calcification, which is pathological in nature, occurs in damaged, degenerated, or necrotic tissues even when serum calcium and phosphate levels are within normal limits. Tonsilloliths are a specific example of dystrophic calcification and consist of calcified deposits formed within the crypts of the palatine tonsils [1]. They are thought to develop because of recurrent or chronic tonsillar inflammation, which leads to deepening and widening of tonsillar crypts. This environment favours the retention of bacterial colonies, desquamated epithelial cells, and inflammatory debris. Calcium and phosphate ions derived from saliva and inflammatory secretions subsequently contribute to the mineralisation of this accumulated material, resulting in the gradual enlargement of the tonsillolith [2]. Although most tonsilloliths, particularly smaller ones, remain clinically silent, larger calcifications may become symptomatic [3,4].

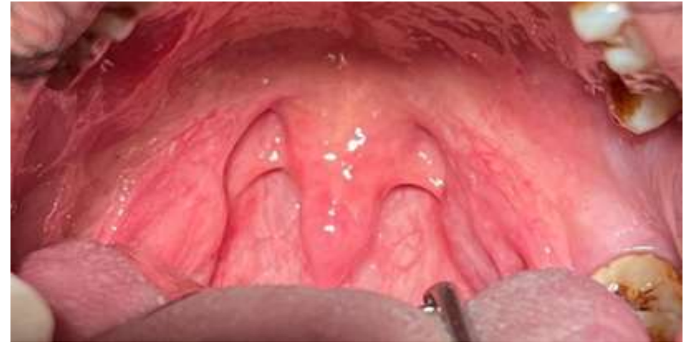
This case report presents an incidentally detected bilateral tonsillolith observed on a routine panoramic radiograph and later confirmed using computed tomography, emphasising the crucial role of dental imaging in the identification of asymptomatic and potentially confusing calcified lesions

Case report

A 54-year-old male patient reported to the Department of Oral Medicine and Radiology, Bapuji Dental College and Hospital, with a chief complaint of pain in the upper left and right posterior tooth region for the past 8 months. The pain was insidious in onset, gradually progressive, intermittent, and mild to moderate in severity. It was aggravated while chewing food and had no specific relieving factors. He also reported difficulty in swallowing and foreign body sensation in the throat region for the past 1 month. The patient had no significant medical or dental history. No significant habit history on general physical examination revealed that the patient was moderately built and nourished, well oriented to time, place, and person, and all vital signs were within normal limits. Extraoral examination showed no abnormalities, and lymph nodes were non-palpable. Intraoral examination revealed erythematous and bilaterally enlarged tonsils (Figure 1). Grade I gingival recession was noted with respect to 16, 17, 26, 27, 31, 32, 41, and 42. Grade II mobility was present in 27, which was also tender on percussion, and Grade I mobility was noted in 26, 31, 32, and 37. Missing teeth at 23, generalised staining, and calculus were observed. The patient exhibited Angle's Class III molar relationship bilaterally with an anterior edge-to-edge bite.

A routine panoramic radiograph, "Figure 2" revealed multiple bilateral radiopaque foci in the mid-ramus region, each measuring approximately 0.5 to 1mm. The radiopacities had ill-defined borders and appeared homogeneously radiopaque. A working diagnosis of soft-tissue calcification was made. Radiographic differential diagnoses included bilateral tonsilloliths, carotid artery calcification, calcified lymph nodes and salivary gland calcifications.

Figure 1: Clinical photograph shows in bilateral enlarged tonsils



The patient was referred to the ENT department for further evaluation, which revealed Grade III bilateral tonsillar hypertrophy and a clinical diagnosis of bilateral chronic tonsillitis.

Figure 2: Orthopantomogram showing bilateral radiopacities in the mid ramus

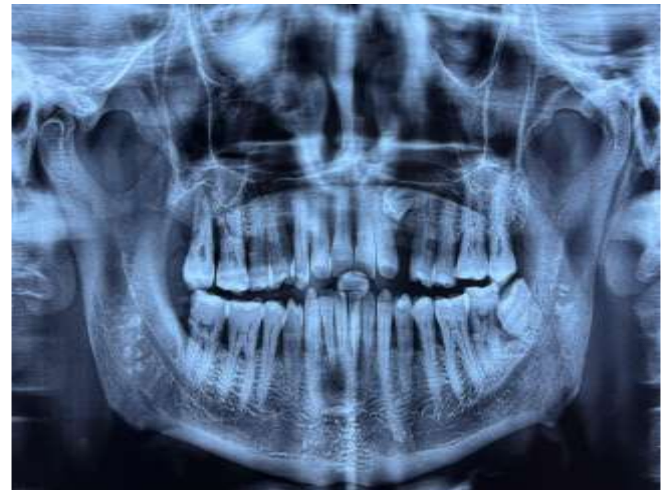


Figure 3: CT sagittal section

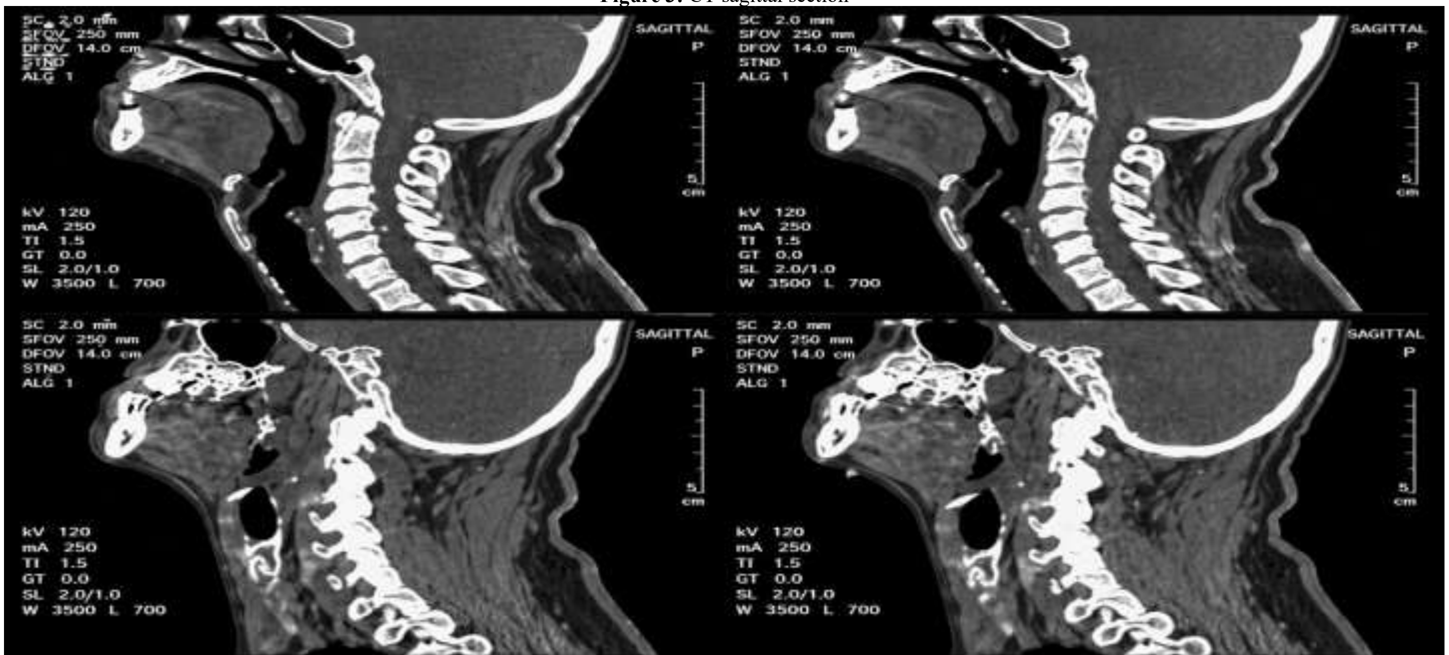


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Figure 4: CT coronal section

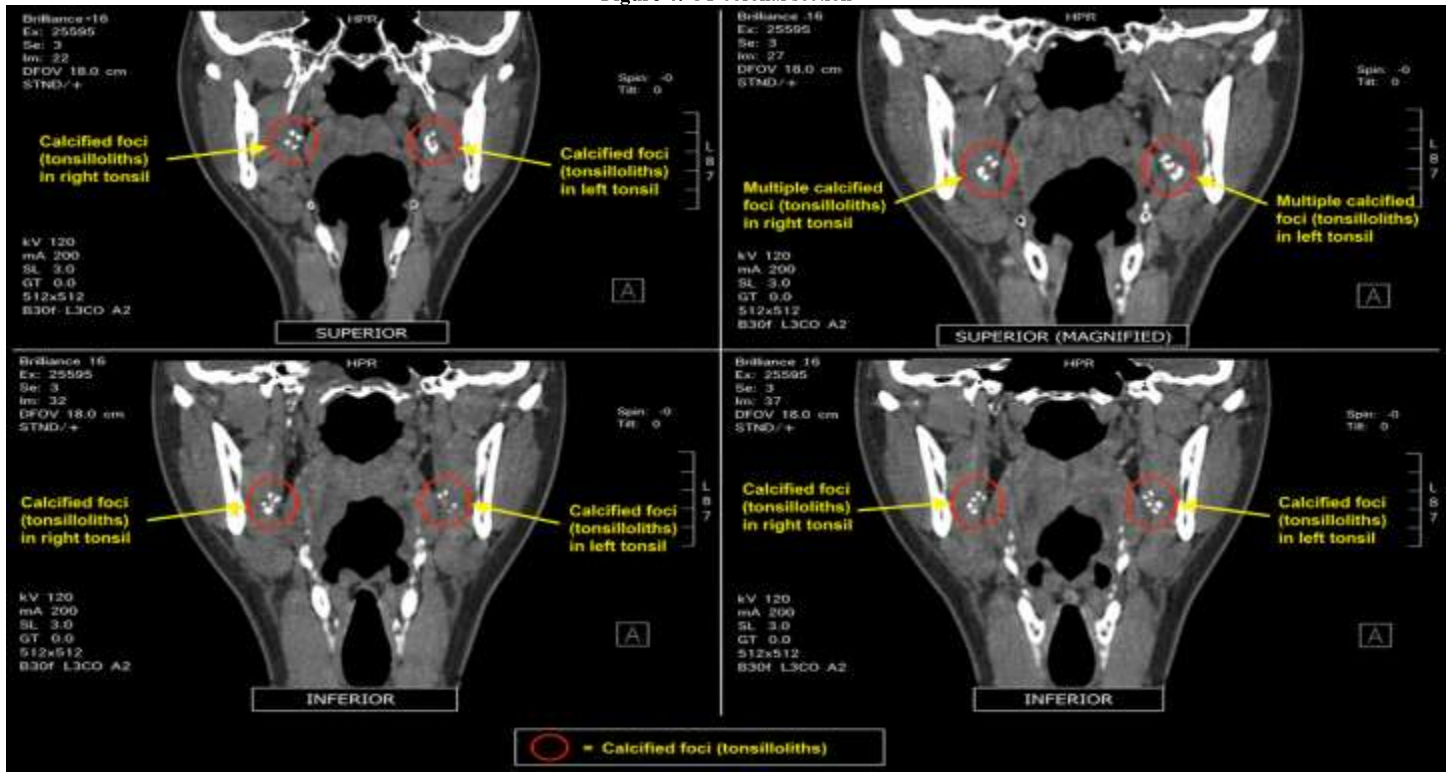
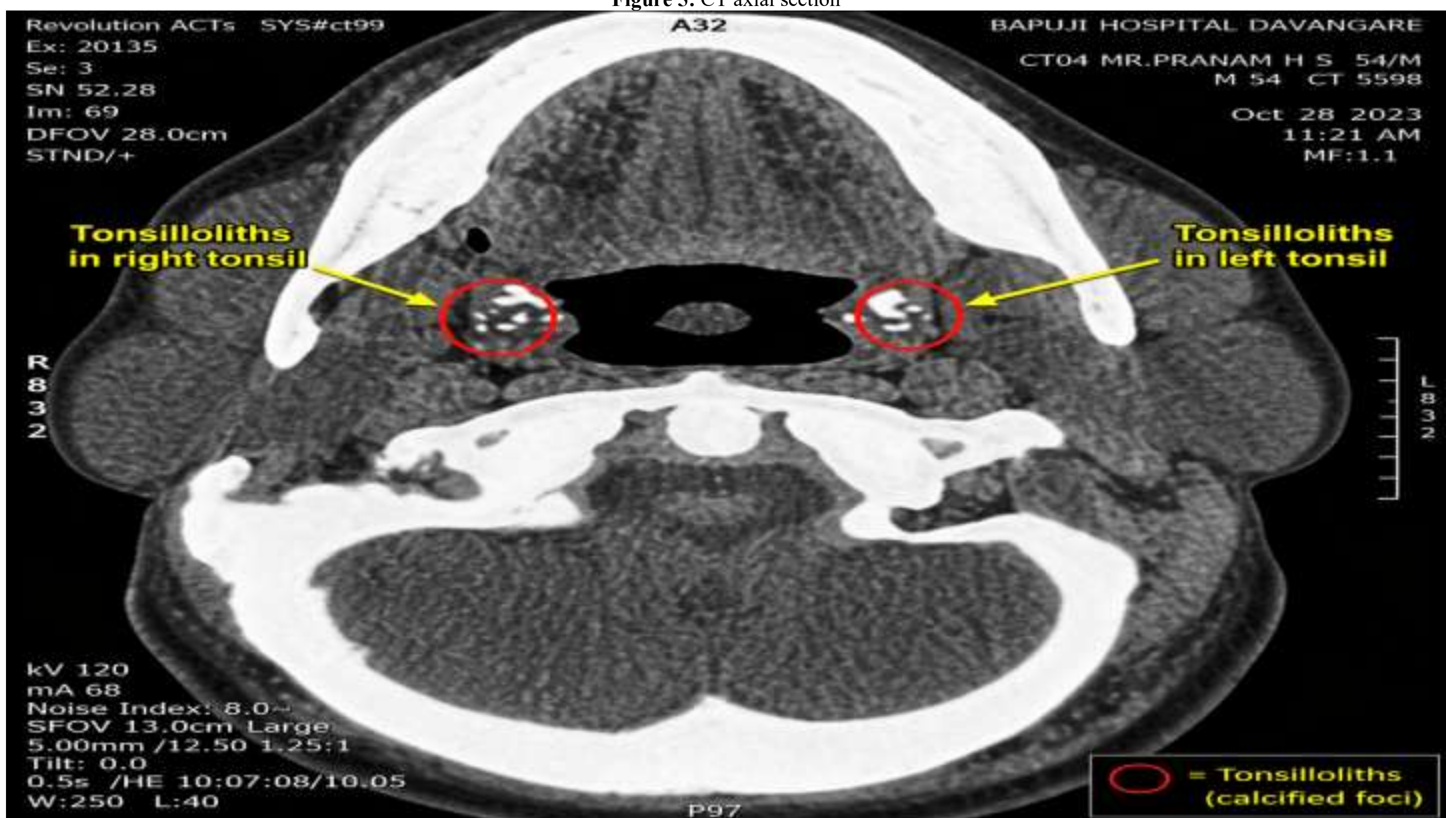


Figure 5: CT axial section



DISCUSSION

Tonsilloliths are calcified deposits that develop within tonsillar crypts, most commonly involving the palatine tonsils. They arise due to dystrophic calcification associated with chronic tonsillar inflammation. These concretions consist of bacteria, desquamated epithelial cells, and organic debris entrapped within enlarged or fibrotic crypts that subsequently undergo mineralization [1]. While most tonsilloliths are small, microscopic, and clinically asymptomatic, larger lesions may mimic abscesses or neoplastic processes, creating diagnostic challenges during routine dental radiographic evaluation.[5]. Therefore, radiopaque findings in the head and neck region, particularly on panoramic radiographs, must be

interpreted cautiously to differentiate tonsilloliths from other clinically significant soft-tissue calcifications [1].

Epidemiology

The prevalence of tonsilloliths on panoramic radiographs varies widely, with reported rates ranging from 0.74% to 13.4%. Advanced imaging modalities such as computed tomography significantly improve detection, with prevalence increasing to between 16% and 46.1%.[6]. Tonsilloliths have been reported across a broad age range, most commonly between 22 and 77 years, and are considered relatively uncommon findings.[4]. Although no definitive gender predilection has been identified, palatine tonsilloliths are more frequently observed in individuals over 40 years of age, likely due to prolonged exposure to chronic tonsillar inflammation and contributing factors such as smoking and poor oral hygiene.[6].

Etiopathogenesis

Tonsillolith formation is primarily attributed to dystrophic calcification occurring in chronically inflamed tonsillar tissue despite normal serum calcium and phosphate levels. Recurrent tonsillitis leads to crypt dilation, fibrosis, and scarring, facilitating retention of epithelial debris, inflammatory exudate, and food particles, thereby promoting microbial colonisation [7]. Mineral ions, including calcium, magnesium, and phosphate derived from saliva and inflammatory secretions, initiate calcification, with progressive deposition resulting in gradual enlargement of the lesion [5].

Although chronic tonsillitis is a major etiological factor, tonsilloliths are polymicrobial in nature. Actinomyces species may serve as an initial nidus; however, these lesions typically harbour a complex microbial biofilm comprising Streptococcus, Lactobacillus, Eubacterium, Fusobacterium, Megasphaera, Porphyromonas, Prevotella, Selenomonas, and Tannerella species [3]. Chemically, tonsilloliths are composed predominantly of calcium carbonate, along with magnesium, sodium, potassium, chloride, and sulfate ions. Aerobic bacteria are usually present on the surface, whereas deeper regions predominantly contain anaerobic gram-negative bacilli, consistent with the hypoxic internal environment [8].

Clinical features

Most tonsilloliths are asymptomatic and detected incidentally during radiographic examinations [2]. Symptomatic cases may present with sore throat, halitosis, dysphagia, odynophagia, referred otalgia, tonsillar enlargement, or a foreign-body sensation. Larger lesions may be painful and resemble peritonsillar abscesses clinically [5]. A strong association exists between tonsilloliths and halitosis, with studies demonstrating up to a tenfold increased risk due to volatile sulphur compound–producing bacteria within the biofilm [3]. Rarely, large tonsilloliths may erode the tonsillar capsule, leading to peritonsillar abscess formation or aspiration, particularly in elderly individuals [4].

Radiographic features

On panoramic radiographs, tonsilloliths appear as solitary or multiple ill-defined radiopacities projected over the mid-ramus region, often overlapping palatoglossal or glossopharyngeal air spaces. Computed tomography, especially axial sections, provides superior localisation and diagnostic accuracy [2].

Differential diagnosis

Accurate differentiation of tonsilloliths from other radiopaque entities is essential due to overlapping radiographic appearances and anatomical locations.

Carotid artery calcifications are typically located inferior to the mandibular angle, between the hyoid bone and the cervical vertebrae, aiding in distinguishing them from tonsilloliths.

Calcified lymph nodes appear as irregular, lobulated, or laminated radiopacities with a characteristic cauliflower-like pattern and may demonstrate positional variation on different projections, unlike tonsilloliths, which remain localised to the tonsillar region.

Sialoliths, particularly of the submandibular gland, may mimic lymph node calcifications but are often symptomatic and may require sialography for confirmation. Approximately 83–94% of sialoliths occur in the submandibular gland and are typically positioned below the inferior border of the mandible in relation to the mylohyoid muscle.

Phleboliths demonstrate a characteristic "bull's-eye" appearance with concentric radiolucent and radiopaque rings [5].

Treatment

Asymptomatic tonsilloliths require no treatment, whereas symptomatic or recurrent lesions may be managed conservatively or surgically, including tonsillectomy. Preventive measures such as optimal oral hygiene and crypt irrigation may reduce recurrence [9,10]. Preventive measures, including maintenance of optimal oral hygiene, periodic irrigation of tonsillar crypts, and control of periodontal bacterial reservoirs, may help reduce recurrence by disrupting biofilm formation [10].

CONCLUSION

Tonsilloliths are uncommon calcifications often detected incidentally on routine panoramic radiographs. Their appearance may resemble other soft-tissue calcifications, making careful radiographic interpretation essential. This case emphasises the diagnostic value of dental imaging in identifying hidden tonsillar pathology. CT imaging provides definitive localisation and confirmation. Good oral hygiene and inflammation control may reduce recurrence. Symptomatic cases require ENT evaluation and possible tonsillectomy.

REFERENCES

1. White SC, Pharoah MJ, 2009. Soft tissue calcifications. In: Oral Radiology. Principles and Interpretation. 6th ed., Pages 526–540.

2. Gurbuz E, Gungor M, Hatipoglu H, 2022. Radiographic detection of the relationship between tonsilloliths and dental plaque-related pathologies in a series of digital panoramic radiographs. Medical Principles and Practice. 31(2), Pages 149–155. Doi: 10.1159/000521687.

3. Srivastava PR, Mahadeorao A, Phulambrikar T, et al, 2016. Panoramic radiographic appearance of giant bilateral tonsilloliths. Journal of Clinical and Diagnostic Research. 10(7), Pages ZJ10–ZJ11. Doi: 10.7860/JCDR/2016/18290.8211.

4. Shubha C, Ashok L, Sujatha G, 2010. Bilateral tonsillolith: A case report. Indian Journal of Public Health Research and Development. 1(2).

5. Cheng FC, Meng CE, Yu-Fong Chang J, et al, 2024. Palatine tonsilloliths incidentally found on the panoramic radiograph. Journal of Dental Sciences.19(4), Pages 2411–2413. Doi: 10.1016/j.jds.2024.07.040.

6. Balaji Babu B, Avinash Tejasvi MLCK, Anulekha Avinash, et al, 2013. Tonsillolith: A panoramic radiograph presentation. Journal of Clinical and Diagnostic Research. 7(10), Pages 2378–2379. Doi: 10.7860/JCDR/2013/5613.3530.

7. MacDonald D, Yu W, 2020. Incidental findings in a consecutive series of digital panoramic radiographs. Imaging Science and Dentistry. 50, Pages 53–64. Doi: 10.5624/isd.2020.50.1.53.

8. Goaz PW, White SC, 1994. Soft tissue calcifications. In: Oral Medicine and Radiology: Principles and Interpretation. 2nd ed, Pages 706–718.

9. Vengalath J, Homberhalli Puttabuddi J, Rajkumar B, et al, 2014. Prevalence of soft tissue calcifications on digital panoramic radiographs: A retrospective study. Journal of Indian Academy of Oral Medicine and Radiology. 26(4). Doi: 10.4103/0972-1363.155676.

10. Yellamma Bai K, Vinod Kumar B, 2015. Tonsillolith: A polymicrobial biofilm. Medical Journal of Armed Forces India. 71, Pages S95–S98. Doi: 10.1016/j.mjafi.2011.12.009.