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Two case reports of supernumerary mandibular premolars

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Introduction

It is widely recognized and accepted that the human dentition consists of 32 teeth. However, it is common for individuals nowadays to have a variation to this norm. This difference is considered abnormal therefore it is important for dentists to identify and tackle it accordingly. Any individual who has more than 32 teeth is considered to have at least one supernumerary tooth. The prevalence of supernumerary teeth is reported to be between 0.1%–3.8% in the permanent dentition [1]. In some cases, supernumerary teeth are associated with specific syndromes such as Gardner's syndrome, cleidocranial dysostosis or cleft lip and palate [2].

Supernumerary teeth can be an incidental finding during the radiographic exam, having been asymptomatic, whereas in other occasions they may be associated with complications [3,4,5]. Supernumerary teeth have been reported in all areas of the oral cavity and in all shapes and forms [6]. They are categorized according to their location, morphology, orientation, and position [6]. Of particular interest in this case report is supernumerary teeth in the premolar region. Depending on the studied population, the prevalence of supernumerary teeth in this region varies between 0.01% -1%, and they usually occur more frequently in the mandible than in the maxilla [3]. Various case studies and reports discuss such findings and portray the prevalence, etiology, and treatment of supernumerary teeth. The following case report documents two cases of non-syndromic supernumerary premolars in the mandible, found incidentally.

Case 1

A **19-year-old male** patient presented to the EUC dental clinic seeking comprehensive oral treatment and evaluation of the possibility for orthodontic treatment. During his routine examination, a supernumerary premolar was found on his lower left mandible.

Diagnosis: The supernumerary premolar was fully developed and had the normal morphology and size of premolars. It had a vertical orientation and was located lingually, between the two premolars (#34 and #35). Its crown was in contact with the roots of the premolars and its apex was in close proximity with the mental foramen and the incisive nerve. The neighboring premolars seemed normal, with no sign of resorption, yet their roots had moved apart to accommodate the supernumerary tooth.

Proposed management: The suggested management was surgical extraction of the premolar to facilitate the orthodontic treatment.

Figure 1: Panoramic Radiograph of the patient

Case 1

Figure 2: CBCT image-3D reconstruction, axial view

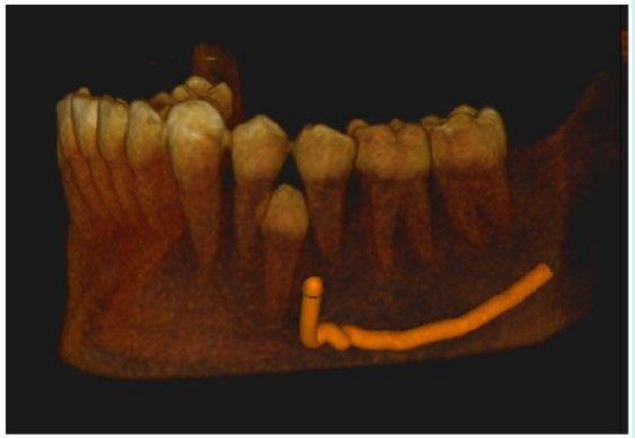

Figure 3: CBCT image-3D reconstruction, buccal view

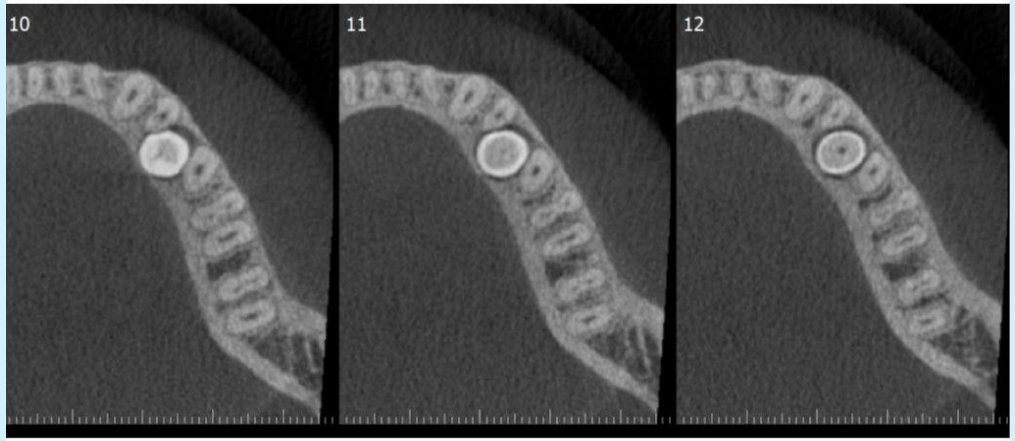

Figure 4: CBCT image, axial slices

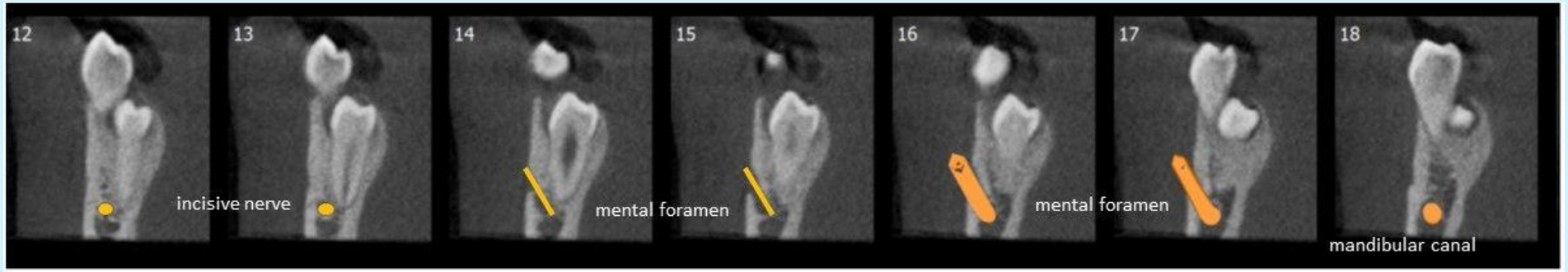

Figure 5: CBCT image-cross sections

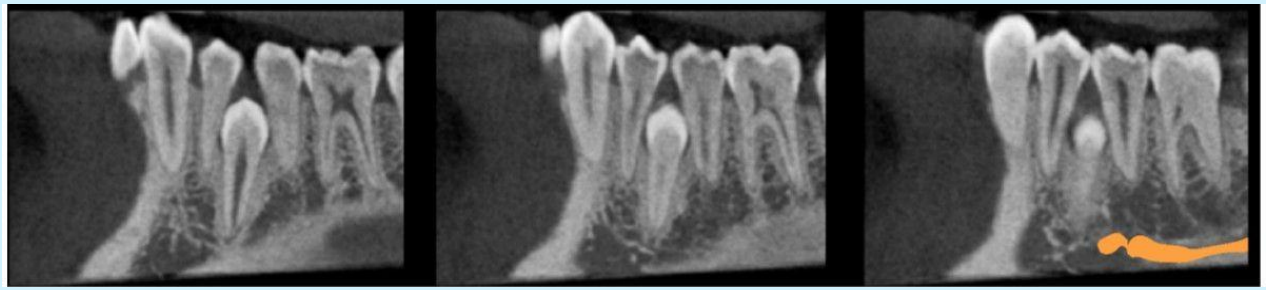

Figure 6: CBCT image, oblique sagittal slices

Case 2

A **30–year-old male** patient presented to the EUC dental clinic seeking comprehensive oral evaluation. During the examination of his oral cavity, a supernumerary premolar was found incidentally on his lower right mandible.

Diagnosis: The supernumerary premolar was located at the lingual surface of the mandible, in the region of #43, #44 and #45. Its crown was tilted mesially, towards the midline.

Proposed management: Depending on the treatment plan, there are several options to be considered:

1. Orthodontic reposition of the supernumerary tooth, between #44 and #45 is an option (in case it is not ankylosed), in order to reduce the edentulous span, improve functionality and assist in a prosthetic restoration.
2. Extraction of the supernumerary premolar can also be considered, followed by a fixed or removable prosthetic restoration or implant placement.
3. The third treatment option is to leave the supernumerary premolar in situ, as it is asymptomatic and monitor it at regular time intervals.

Figure 7: Panoramic Radiograph of the patient

Discussion

The **etiology of supernumerary premolars** is relatively unknown. Several theories have emerged to interpret their etiology including both environmental and genetic factors [4]. One theory proposes that such teeth develop from extensions of the dental lamina after the complete development of the normal premolars [4]. This theory is supported by the observation that most supernumerary premolars are detected after the completion of the dentition [4].

The association of supernumerary teeth with **complications** is reported in the literature and this does not exclude premolars. Such complications include pathological changes such as cysts or root resorptions of neighboring teeth [3,4]. However, these observations are only reported in case studies and are rare [4]. The most common implication of supernumerary premolars is their potential to interfere with orthodontic mechanics and treatment or interfere with normal occlusal development [3,4]. Some examples include crowding, impaction or delayed eruption of permanent teeth, malocclusion, rotations, abnormal eruption sequence, or compromised space closure [4].

As for the **management of supernumerary premolars**, it revolves around either to extract or to monitor the tooth [3,4,5]. Both options have their respective advantages and disadvantages. In general, if the tooth is causing pathological or occlusal problems it should be extracted [3,4,5]. Such extractions could be challenging, particularly when the supernumerary premolar is in contact or in close proximity to the roots of neighboring teeth or any important anatomical structure such as the mental foramen or the mandibular canal [3,5]. If it is decided that the tooth will be kept in situ, follow-ups including radiographic examination should be conducted [3]. Every case is unique, and all the information should be weighed by the clinician to justify the proper treatment.

Conclusion

We presented 2 cases of accidentally discovered supernumerary mandibular premolars. The identification of such teeth is important, as they may interfere with the patient's treatment plan or cause various complications to neighboring teeth, anatomical features, or the general oral health. The management of supernumerary teeth is decided on an individual basis depending on each patient's oral health status and treatment demands.

References

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