

# CASE REPORT OF AN ACCIDENTAL FINDING OF A SUPERNUMERARY PREMOLAR

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DOI 10.69559/issn.2233-1794.2024.13.2.7

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### ABSTRACT

The aim of this paper was to present a case of a supernumerary tooth visible on an orthopantomogram in the premolar region on the left side of the lower jaw. A supernumerary premolar was observed between teeth 34 and 35, resembling to a second premolar in morphology. The patient had complete dental arches in both the upper and lower jaws, with erupted third molars and bilateral rotation of the upper canines.

This paper aims to highlight the importance of early detection of supernumerary teeth, as treatment often requires a multidisciplinary approach. Therapeutic intervention can significantly influence the success of treatment and overall patient satisfaction.

**Keywords:** dental anomalies, hyperdontia, premolars

## Introduction

Hyperdontia is an anomaly characterized by the presence of an excessive number of teeth in either the primary or permanent dentition, resulting from excessive proliferation of dental lamina cells during development or the division of the enamel organ into two or more parts [1]. Hyperdontia is inherited in an autosomal dominant pattern. The etiology is heterogeneous, with hereditary factors being one possible explanation for the occurrence of this abnormality, along with hyperactivity of the dental organ [2]. It commonly occurs as part of a syndrome, such as cleidocranial dysplasia, which results from a mutation in the CBFA1 gene and manifests with short stature, persistently open fontanelles, hypoplastic clavicles, delayed tooth eruption, and an increased number of teeth. Additionally, hyperdontia is more frequently observed in individuals with cleft lip and palate and as part of the oro-facial-digital syndrome [1, 3]. The prevalence of hyperdontia is 1-3%. It is more common in the upper than in the lower jaw, with the most frequently described supernumerary teeth being maxillary lateral incisors and mesiodens [4].

Premolars are teeth of the transcanine sector that appear in two generations, thus classified as diphyodont. The second premolar is a tooth undergoing phylogenetic reduction, similar to upper lateral incisors and third molars in both jaws. Phylogenetic reduction is an evolutionary process marked by a reduction in the number or size of teeth, representing an adaptation of the masticatory apparatus to new functional needs and the dietary habits of modern humans. Given that the second lower premolar is a genetically labile tooth, its occurrence as a supernumerary tooth is not uncommon [1]. A supernumerary tooth is defined as any tooth that appears in excess of the usual configuration of twenty primary and thirty-two permanent teeth. Supernumerary teeth are most commonly found in the anterior region of the upper jaw and the premolar region of the lower jaw (paramolar). It has been established that around 25% of supernumerary teeth in the permanent dentition erupt, while the rest remain impacted within the jaw structures [5]. Hyperdontia affecting premolars can be solitary (when only one

supernumerary tooth is present), multiple (involving several teeth), or associated with syndromes like cleidocranial dysplasia [6].

## Case Report

Due to a desire for orthodontic treatment, the patient B.H. (2005) was recommended by the attending dentist at the Clinic for Dental Pathology and Endodontics, Faculty of Dentistry in Sarajevo, to undergo an orthopantomogram. The scan revealed a supernumerary tooth in the premolar region on the left side of the mandible as an incidental finding.

The patient was informed about the finding and potential therapeutic options, which would be decided upon in a multidisciplinary manner.

The use of the orthopantomogram for this case report was approved by the Ethics Committee of the Faculty of Dentistry with Clinics in Sarajevo on November 15, 2013, under the number: 09-552-9/2013.



**Figure 1.**

Orthopantomogram of patient B.H., 2005.

## Discussion

Supernumerary teeth can be found in any part of the dental arches. They occur in 1.05% of cases and are most common in the upper distomolar region [7]. This case report is in agreement with a study [8] which emphasized that the most frequent location for supernumerary teeth is in the mandibular premolar region. Aguiar and colleagues cited a 2008 study that found supernumerary teeth in the premolar region were most commonly located

lingually, with only four exceptions out of ninety-four supernumerary mandibular premolars. The authors concluded that buccally positioned teeth usually or partially erupt, while lingually positioned teeth predominantly do not erupt. Diagnosing supernumerary premolars would be extremely difficult without radiological diagnostics [9].

The etiology of hyperdontia is multicausal, with several hypotheses explaining its occurrence, such as local and independent hyperactivity of dental lamina or phylogenetic regression towards anthropoids, whose dental formula included more teeth [10]. Additionally, supernumerary teeth are more common in patients with a family history of the condition. If the frequency of an anomaly is higher and it is passed down through generations, as is the case with hyperdontia, genetic investigation is justified [11].

In this case report, one supernumerary lower premolar was diagnosed. After diagnosing a supernumerary tooth, careful treatment planning is essential, often requiring a multidisciplinary approach and collaboration between surgeons and orthodontists. Clinical examination and radiographs play a crucial role, after which treatment may range from simple extractions to more complex procedures, depending on whether the tooth causes problems for the patient. Extraction of supernumerary teeth is indicated when they impede the eruption of permanent teeth or for aesthetic reasons. Supernumerary teeth can obstruct the eruption and positioning of other teeth, complicate oral hygiene maintenance, and cysts can form around unerupted supernumerary teeth [1]. One case report [12] showed that the most common pathological formations associated with supernumerary teeth are cysts in the premolar region (9%), while complications include damage to adjacent teeth (13%).

Since a supernumerary tooth can be an incidental finding, if it does not cause issues for the patient, extraction is avoided to prevent injury to adjacent teeth and surrounding tissues. Regular follow-ups are also recommended. Early diagnosis and appropriate treatment can mitigate potential complications caused by supernumerary teeth. Dentists should be familiar with their clinical signs and treatment options [13].

## Conclusion

A supernumerary tooth can appear in any part of the maxilla or mandible. The etiology is multifactorial, with genetic factors playing an important role. The diagnosis and treatment of a supernumerary tooth require a multidisciplinary approach. Treatment largely depends on the position of the supernumerary tooth and the potential adverse effects its presence may have on adjacent teeth. It is necessary to educate patients diagnosed with a supernumerary tooth about the importance of regular dental check-ups to prevent possible complications and achieve optimal oral health. Early detection of a supernumerary tooth can significantly impact the success of treatment and overall patient satisfaction.

### Declaration of interest

Authors declare NO conflict of interest.

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