

# A Supplemental Permanent Unilateral Maxillary Lateral Incisor: A Case Report

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The supplemental tooth is of normal shape and size resembling a particular tooth from the normal dentition. These teeth might cause esthetic and/or functional problems because they are usually located in the maxillary anterior region. This is a case report of a patient who had visual discomfort from the color of his teeth and requested esthetic treatment. On intraoral examination, a supplemental maxillary lateral incisor that was not noticed by the patient was incidentally diagnosed by the clinician. Proper examination and diagnosis, particularly in young children, is important to make a correct and rational treatment plan and avoid invasive and surgical procedures. The treatment of supplemental lateral incisors depends on the type and position of the supernumerary tooth and its effect or potential effects on adjacent teeth.

**Keywords:** Hyperdontia, Lateral incisor, Supernumerary teeth, Supplemental tooth, Unilateral

## INTRODUCTION

Variations in the number of teeth that develop are common, and these can occur in both primary and permanent dentitions. Hyperdontia is the development of one or more supernumerary teeth in the dentition. Supernumerary teeth are defined as teeth in excess of the normal dental formula regardless of their location and morphology. They can be found in almost any region of the dental arch both in the primary and permanent dentition. Supernumerary teeth may be single or multiple, may be unilateral or bilateral, erupted or unerupted and affected one or both jaws. Supernumerary teeth are more frequently observed in permanent dentition than in deciduous dentition with more frequency for the upper arch than the lower arch with a strong predilection for the premaxilla. Supernumerary teeth can be mainly classified according to morphology (form) and location in the dental arches.<sup>1</sup> According to their locations, supernumeraries may be categorized into four types: Mesiodens, paramolar, distomolar, and para premolar and into two types according to their morphology (form) rudimentary and

supplemental. Rudimentary (or dysmorphic) defines teeth of abnormal shape and smaller size; including conical, tuberculate, and molariform types while supplemental teeth (or eumorphic) are of normal shape and size resembling a particular tooth from the normal dentition. Supernumerary teeth may also be classified according to their orientation (vertical or normal, inverted and horizontal) or according to their position (buccal, palatal, and transverse).<sup>2</sup>

In terms of morphology, the vast majority of primary supernumerary teeth are either midline conical (mesiodens) or supplemental lateral incisors.<sup>1</sup> In the permanent dentition, the conical form was reported the most common followed by tuberculate and supplemental forms.<sup>3</sup> Nevertheless, some studies have observed supplemental at more frequencies than tuberculate forms.<sup>4</sup> However, studies report permanent lateral incisors as the most common form of supplemental teeth<sup>1</sup> followed supplemental premolars and molars.<sup>3</sup> Supplemental lateral incisors may be in the permanent or primary dentition,<sup>5,6</sup> bilateral<sup>5,7</sup> or unilateral<sup>6</sup> and either erupted<sup>7</sup> or un-erupted.<sup>5</sup>

Supplemental lateral incisors may have a negative influence toward the esthetics of the anterior region of the dentition and may cause occlusal anomalies such as excessive overjet, crowding or ectopic eruption, midline shift, and low-self-esteem. This case report describes the occurrence of a unilateral supplemental lateral incisor without association to any syndrome.

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## CASE REPORT

A 32-year-old male visited a private dental clinic with the chief complaint of visual discomfort from the presence of white discoloration on the anterior teeth. The familial, medical, and dental histories were examined, and nothing relevant was reported. An extra-oral examination did not reveal any abnormality. The intraoral examination of the permanent dentition in the maxillary and mandibular arches revealed the presence of white discoloration on the labial surface of the anterior teeth. From the appearance of his teeth, a diagnosis of mild fluorosis staining (determined by using dean's fluorosis index) was present on the anterior teeth in the esthetic zone (white mottled enamel hypomineralization) (Figure 1).

Incidentally, a supernumerary incisor was noticed on the left side of the maxillary arch between 10 and 11 having morphology similar to the lateral incisor (Figure 2).

The patient had Class I molar occlusion and had no interference with occlusion in this case. A 5 mm overjet and a slight midline shift (being replaced opposite toward the erupting supernumerary incisor) were recorded (Figure 3).

The patient had no complaint about this situation. Panoramic and an intraoral periapical radiograph examination revealed complete root formation and also confirmed the absence of supernumerary teeth on the right side (Figure 4).

The treatment option for this particular case was the extraction of the supplemental permanent maxillary left lateral incisor and the alignment of upper midline and teeth by fixed orthodontics. The patient was made aware of the case and the treatment plan but chose to keep the supplemental tooth. Therefore, the supplemental tooth was not extracted and the treatment was only aimed at addressing the patient's need for improved esthetics.

## DISCUSSION

This is a case report of a supplemental permanent maxillary lateral incisor that went unnoticed by the patient because of its resemblance to the adjacent normal tooth and because it caused no obvious complications for him. Unilateral cases of supplemental lateral incisor teeth are more common when compared to bilateral cases.

The etiology of supernumerary teeth is not clearly understood. A number of theories have been formulated to describe the etiology of supernumerary teeth; these include the atavism theory, dichotomy theory, and dental lamina hyperactivity theory. The atavism theory suggests that the development of supernumerary teeth is a result of



Figure 1: A facial view of the dentition



Figure 2: Lateral view of the dentition showing the supplemental tooth between tooth 10 and 11



Figure 3: (a and b) A study model showing the occlusal relationship between the maxillary and mandibular arches



Figure 4: A panoramic X-ray showing no evidence of a supplemental lateral incisor on the right side of maxilla

phylogenetic reversion to extinct primates with three pairs of incisors. The dichotomy theory suggests that they are a result of a dichotomy of the tooth bud, resulting into two

equal or different-sized parts, resulting in the formation of two teeth of equal size, or one normal and one dysmorphic tooth, respectively. However, the most accepted theory is the dental lamina hyperactivity theory which suggests that they are formed as a result of local, independent, conditioned hyperactivity of the dental lamina. However, the role of complex interactions among a variety of environmental and genetic factors has been postulated.

This case demonstrated a supernumerary tooth with no association to any syndrome. Supernumerary teeth may occur in the form of a single isolated anomaly or in a multiple form. Cases of multiple (five or more) supernumerary teeth not associated with other systemic diseases or syndromes are rare and when present, the most common site affected is the mandibular premolar region.<sup>8</sup> Most cases of multiple supernumerary teeth are reported to be associated with syndromes such as cleft lip and palate, cleidocranial dysplasia, Gardner's syndrome and to a lesser extent with chondroectodermal dysplasia, Fabry Anderson's syndrome, Ehlers-Danlos syndrome, incontinentia pigmenti and the tricho rhino-phalangeal syndrome.<sup>3</sup>

Supernumerary lateral incisors disturb the dental arch harmony due to their variable size, shapes and the effects they impose on the arch. Early diagnosis can help to avoid complications, plan for treatment at the appropriate time and in certain instances allow more conservative intervention.<sup>5,6</sup> Radiographs are recommended where anomalies in the primary dentition are noted to determine the condition and number of the succedaneous teeth. An anterior occlusal or periapical radiograph using paralleling technique and panoramic view are the most useful radiographs to investigate supernumerary teeth.<sup>9</sup> An association between anomalies of the permanent dentition and the presence of dental anomalies in primary teeth has been proposed;<sup>10</sup> supplemental lateral incisors in the primary dentition followed by coming out similar anomalies in the permanent dentition has been reported.<sup>6</sup>

In this case, the supplemental lateral incisor between 10 and 11 did not pose any problem to the patient, so the treatment did not include its extraction. Treatment of supernumerary teeth depends on the respective case and their management should be part of a comprehensive treatment plan and should not be considered in isolation. In general, their treatment is dependent on their status of being unerupted or erupted. In cases of fully erupted supplemental lateral incisors extraction is recommended if the tooth is associated with any pathologic, esthetic, or occlusal problems. However, extraction is not the treatment of choice in cases of normal eruption where the tooth causes no esthetic or occlusal disturbance in the

arch. It is sometimes better to leave the supplemental tooth in place but to be kept under observation. If unerupted, these teeth can be investigated for being associated with complications or not. If not associated with complications it is sometimes best to leave them in place but kept under observation.<sup>9</sup> However, if the unerupted supernumerary tooth is associated with any complication, then it should be surgically removed. The optimal time for surgical intervention, however, remains contentious.<sup>2,3</sup>

## CONCLUSION

A supplemental tooth is a supernumerary tooth that may resemble any tooth in the arch. Careful clinical and radiographic examination is essential to make a correct and rational diagnosis for any patient. Correct examination and diagnosis may reveal rare entities and help us to detect other un-noticed dental anomalies or associated syndromes that should be appropriately treated. Follow-ups with regular radiographs are recommended in cases where the supernumerary teeth has occurred with no associated pathology and not causing any functional and esthetic interference.

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