

Supplemental mandibular incisors: a Recherche

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Introduction:

Supernumerary teeth are a developmental disturbance encountered in the dental arches. These teeth are in excess of the normal series.¹ Supernumeraries can appear in both deciduous and permanent dentitions, but they are usually seen in the permanent dentition.² Prevalence of supernumerary teeth ranges from 0.15 to 3.8% in different populations with a higher frequency among Asians.²

The most common supernumerary tooth is mesiodens, which is usually small and conical, and located between maxillary incisors.³ This is generally followed by maxillary lateral incisor, maxillary fourth molar, and mandibular third premolar supernumeraries. Maxillary premolar, canine and mandibular fourth molar are the least

A B S T R A C T

Supernumerary teeth are quite a common occurrence, and are mostly treated by extraction. On the contrary, the incidence of supernumerary teeth in the mandibular incisor region is a rarity. Due to its unique position and the problems associated with it, it is prudent to diagnose and explore the various treatment options. This review on supplemental mandibular incisor and case report, attempts to give an insight in to the management of such clinical situation.

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common ones. The incidence in the mandibular anterior tooth area is about 0.01% to 2%.⁴ Usually the supernumerary teeth in the mandibular anterior region are supplemental in nature. A Swiss survey on orthopantomographs clearly demonstrates the low incidence of mandibular supplemental incisors.^{5,6} [Image I] This paper describes a rare case of a supernumerary tooth in the anterior area of the mandible.



Image I. Distribution of the 44 supernumeraries superimposed on an orthopantomogram

Case report:

A 8 year old girl, reported to the department of Pedodontics and Preventive Dentistry, Bapuji Dental College and Hospital, Davangere, with chief complaint of teeth not aligned. On history taking and examination it was found that she had tongue thrusting habit, which had resulted in an open bite of 5mm [Image II] The lower anterior region revealed crowding with rotation, due to the presence of an extra mandibular incisor. All the incisors were morphologically alike, making it difficult to diagnose the supplemental tooth.

After careful analysis the tooth mesial to 73 was planned for extraction, to allow for normal alignment and proper eruption of the permanent canines. Unfortunately the patient did not report back after the start of the habit breaking treatment.



Image II Supplemental mandibular incisor mesial to left canine

Discussion:

Although this problem seems to be caused by genetic or environmental factors, the etiology is unknown. They may be found nearly anywhere in the dental arches or jaws. They may be single, double or multiple, unilateral or bilateral, and in one jaw or both jaws at the same time. Supernumerary teeth might resemble normal teeth or be amorphous.²

Theories for occurrence of supernumerary teeth: Several theories have been proposed as regards the causes of occurrence of supernumerary teeth, including atavism theory¹, mechanical tooth germ separation theory, tissue induction theory, and dental laminal morphological disturbance theory.⁴⁻⁶ However, none of these theories alone

offers a sufficient explanation for this phenomenon.

Few studies have reported cases of supernumerary teeth in lower incisor region. Cho reported the case of a girl with bilateral supernumerary permanent lower incisors and

demonstrated that if not removed promptly these supernumerary teeth will lead to crowding and malocclusion.⁷Tanaka et al. described a rare case of bilateral completely erupted supernumerary teeth found in the incisor region of the mandible of a 19-year-old Japanese female.⁸

Listed below are the few reports available on supernumerary teeth in anterior mandible.

SL	AUTHOR	JOURNAL	CASE	TREATMENT DONE
1.	Taishi yakose ⁴	Bull Tokyo dent coll 2006, 14(1):19-23.	1. Supernumerary tooth in the right mandibular lateral incisor. 2. Left & right mandibular supernumerary tooth.	Extraction of the tooth with larger mesio distal width (left mandibular tooth followed by orthodontic treatment. Extraction of the two teeth that were most misaligned done followed by orthodontic treatment.
2.		KCC Hospital, Khetri Nagar, India	Of the 181 supernumerary teeth 5 were seen in the mandibular incisor region.	Retrospective study for 26 years no treatment done
3.	Ana Cláudia Rossi ¹⁰	International Journal of anatomic variations 2010;(3) 152-4	Lower left lateral incisor supernumerary teeth seen in a dry mandible	Not applicable.
4.	Cho.S.Y ⁷	Gen dent 2008: 54; 428-30	Two bilateral supplemental mandibular permanent incisors	No treatment done
5.	Tanaka ⁸	British dental journal 1998;185:386-88	Left side mandibular supplemental permanent tooth with skeletal class III malocclusion	Extraction of the supplemental tooth followed by orthodontic treatment
6.	Arathi. R ⁹	JISPPD2003;23:2:103-5	Non syndromic patient with 12 supernumerary teeth. Including two supplemental mandibular incisors.	Extraction of all supernumerary teeth.

Reason for lower occurrence of supernumerary in the anterior mandibular region:

According to Schmuckli.R⁵, hyperplasia of tooth germs may occur in areas with wide intervals between tooth primordia at the end of dental lamina; therefore, it does not easily occur in the mandibular anterior tooth area, with high inter-tooth primordium density and the occurrence of mandibular supernumerary incisor tooth reported in this study is considered rare. Moreover, usually, this supernumerary tooth is extracted, becoming its permanence a rare case. A large number of anterior supernumerary teeth remain unerupted (approximately 75%), while 25% are partially or fully erupted.

Problems associated with supernumerary teeth in the anterior mandibular region:

The occurrence of supplemental mandibular incisor tooth increases the chances of crowding, interfere with eruption of normal teeth and also can cause an esthetic problem.

The treatment options are:

Conservative approach:

No tooth extraction, only review the eruption of other teeth. This option is the most conservative, but chances of severe to moderate crowding is

high and also the eruption of adjacent canine is retarded or displaced.¹⁰

Extraction approach:

The main problem that arises with this approach is that of diagnosis and decision making on which tooth to be extracted.¹⁰

Diagnosis:

It may be difficult to distinguish the supplemental tooth from its normal counterpart. A supplemental tooth may have a deep palatal pit with coronal invagination. If both the teeth are similar and they cannot be distinguished then the most displaced tooth is extracted.¹⁰

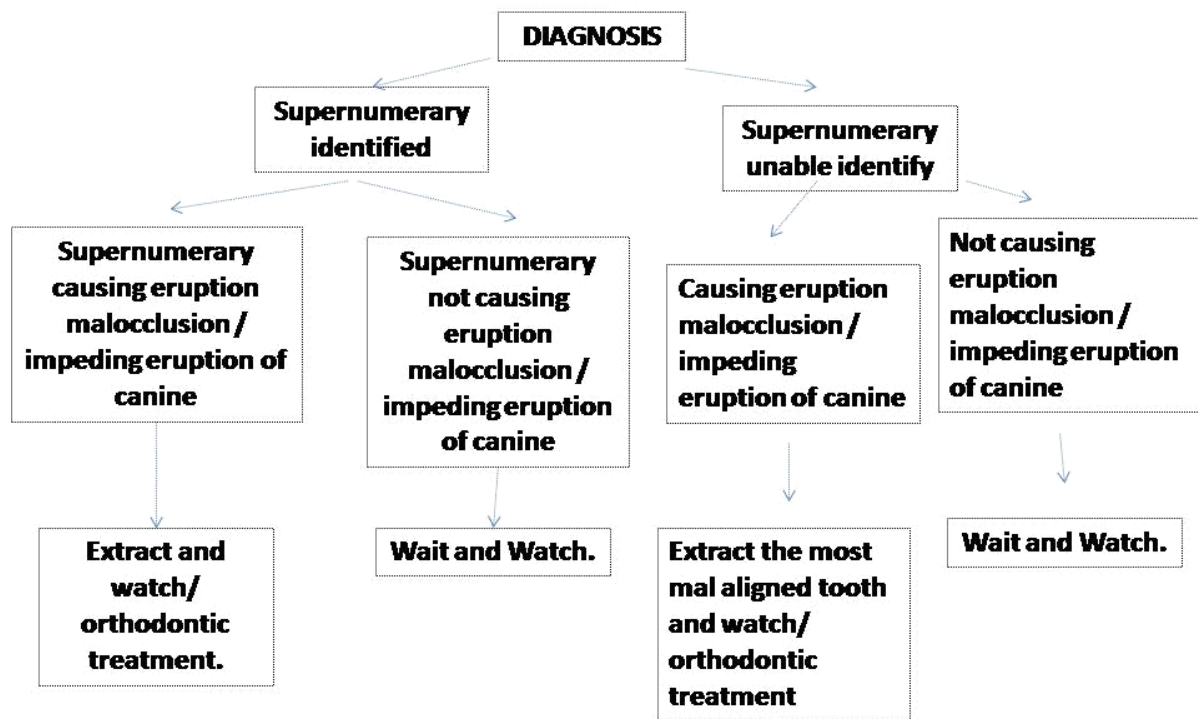
Option 1:

Extract the supplemental incisor and monitor the occlusal development. This option maintains the symmetry of mandibular arch, but orthodontic alignment may be needed if space closure is incomplete.¹⁰

Option 2:

Keep the supplemental incisor and extract the adjacent mandibular lateral incisor. This option provides the room for the adjacent canine to erupt, does not carry the risk of incomplete space closure following extraction, but the remaining incisor will show left-right asymmetry in size and shape.¹⁰

Decision making tree for supplemental mandibular incisors.



Conclusion:

Supernumerary teeth in permanent mandibular region are rare and uncommon in children. Supplemental teeth in the mandibular incisor region are often missed during routine dental examination. Hence dentists who treat children must be aware of this condition as this causes crowding of incisors and displacement of permanent canines. Knowledge of the occurrence and management of this rare supernumerary will help in early intervention and prevention of extensive treatment later.

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