

Variations in presentation of supernumerary teeth: a review-based case series.

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Abstract

Background

Supernumerary teeth are developmental anomalies characterized by the presence of teeth in excess of the normal dental formula. They may occur in the maxilla or mandible, in the anterior or posterior regions, and may be erupted, partially erupted or unerupted. Their morphology ranges from conical or rudimentary forms to supplemental teeth closely resembling normal dentition. Although many are asymptomatic, supernumerary teeth can cause delayed eruption, displacement, crowding, malocclusion and aesthetic concerns.

Aim

To describe the varied clinical and radiographic presentations and management of four nonsyndromic patients with supernumerary teeth and to correlate the cases with recent literature

Case Series

Four healthy pediatric patients aged 11–14 years presented with complaints related to supernumerary teeth. Case 1: A 14-year-old male had a mandibular peridens between teeth 32 and 33, discovered incidentally during caries assessment of 36 and extracted under local anesthesia. Case 2: A 12.5-year-old female had a mesiodens between 11 and 21, which was surgically removed. Case 3: A 13-year-old female presented with a forwardly positioned upper anterior tooth; examination revealed a supplemental supernumerary tooth associated with 11, which was extracted. Case 4: An 11-year-old male had a conical mesiodens between 11 and 21, with partially erupted permanent and retained, carious primary teeth. The supernumerary tooth and grossly decayed 54 and 84 were extracted. All patients received oral-hygiene instructions and follow-up care.

Conclusion

The four cases demonstrate considerable variation in the location, morphology and clinical presentation of supernumerary teeth, ranging from a mandibular peridens to maxillary mesiodens and supplemental forms. Careful clinical examination combined with appropriate radiographic evaluation is essential for diagnosis and treatment planning. Early identification and timely removal of problematic supernumerary teeth can minimize disturbances to the developing dentition.

Keywords: supernumerary teeth, hyperdontia, mesiodens, supplemental tooth, peridens, pediatric dentistry, radiographic diagnosis, tooth eruption.

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Introduction

Teeth that grow in addition to the typical complement of primary or permanent dentition are known as

supernumerary teeth, or hyperdontia. They exhibit significant variety in morphology, size, orientation, eruption state, and position, and they can appear anywhere in the dental arches. Rather than being a unique morphological entity, supernumerary teeth are recognised

in current literature as a diverse developmental abnormality. Variability in reported occurrence and clinical descriptions has been attributed to conflicting language and classification, according to a recent graphical review. The maxillary anterior region, especially the space between the permanent central incisors, is where supernumerary teeth are most typically found and are referred to as mesiodens. Paramolars, distomolars, parapremolars, and supplemental teeth are additional anatomical types (1).

They might have conical, tuberculate, supplementary, or rudimentary morphologies. Conical and premaxillary supernumerary teeth continue to be predominant in recent large paediatric investigations. Conical teeth made up 65.8% of premaxillary supernumerary teeth in a study of nonsyndromic Indian children, with tuberculate and supplementary teeth coming in second and third. The precise cause is yet unknown. The dental lamina's hyperactivity, the tooth bud's dichotomy, hereditary variables, and environmental impacts are some of the suggested explanations. Supernumerary teeth can be found alone or as a component of diseases like Gardner syndrome and cleidocranial dysplasia. However, isolated nonsyndromic supernumerary teeth are somewhat common in youngsters who are otherwise healthy. Their position, morphology, orientation, and connection to neighbouring permanent teeth all play a major role in determining their clinical relevance. A supernumerary tooth may erupt into the oral cavity and cause an obvious functional or aesthetic defect, or it may remain asymptomatic and be found by accident on radiography (2).

Permanent tooth eruption that is either delayed or unsuccessful, ectopic eruption, crowding, midline diastema, occlusal disturbances, periodontal problems, and, on occasion, cystic alterations are all possible issues. Supernumerary teeth are linked to neighbouring tooth displacement, according to recent paediatric research, and may necessitate a combination of orthodontic and surgical treatment. Thus, radiographic evaluation is essential. The number, location, and morphology of extra teeth can be determined using periapical, occlusal, and panoramic radiography. When three-dimensional localisation is needed, especially when an impacted tooth is near nearby roots or other anatomical structures, cone-beam computed tomography (CBCT) may be helpful. The diagnostic utility of CBCT and panoramic imaging in evaluating

extra teeth and anticipating impaction was shown in a recent multicenter research. (3).

The patient's age, symptoms, tooth morphology, position, relationship to permanent teeth, and expected consequences all influence how they are managed. While teeth that cause eruption disturbances, displacement, crowding, or aesthetic issues are typically removed, asymptomatic teeth without negative effects may occasionally be examined. According to recent research, when a supernumerary tooth obstructs an impacted maxillary incisor, removal in conjunction with orthodontic traction or space creation may result in better eruption outcomes than removal alone. The current case series emphasises the significance of customised clinical and radiographic evaluation by highlighting four distinct manifestations of supernumerary teeth in otherwise healthy paediatric children (4).

Case Series

Case 1 – Mandibular Peridens in the Canine Region

A 14-year-old male patient presented with a complaint of pain associated with a decayed tooth in the left mandibular posterior region for approximately 2 months. The patient was medically healthy and had no previous dental history.

Extraoral examination showed facial symmetry, normal temporomandibular joint function and no clinically significant lymphadenopathy. Intraoral examination demonstrated permanent dentition. The dental examination revealed an additional tooth in the mandibular anterior region, designated **P33**, located between teeth 32 and 33. An orthopantomogram demonstrated radiolucency involving enamel, dentin and pulp in relation to 36, along with a radiopaque structure between 32 and 33. Based on its location and radiographic appearance, the additional tooth was diagnosed as a **peridens/supernumerary tooth in the mandibular canine region**.

Because of its abnormal position and potential interference with the adjacent dentition, extraction of P33 under local anesthesia was planned. Oral prophylaxis was advised before the corrective phase, followed by extraction. Oral-hygiene instructions and six-monthly follow-up were recommended.



Orthopantomogram Radiograph



Intraoral Examination



Post-operative picture

Clinical significance

This case demonstrates an unusual **mandibular anterior/canine-region presentation**, contrasting with the more frequently encountered maxillary anterior mesiodens. The mandibular premolar region is recognized as another important site of supernumerary teeth, although these teeth are considerably less common than premaxillary supernumeraries. Recent systematic review data indicate that mandibular premolar supernumerary teeth are uncommon but generally amenable to surgical treatment when appropriately planned.

Case 2 – Erupted Maxillary Mesiodens

A 12.5-year-old female presented with the chief complaint of an **extra tooth in the upper anterior region**, which had been noticed for approximately 2

years. She was medically healthy and was attending a dentist for the first time.

Extraoral examination showed normal facial symmetry and normal temporomandibular joint findings. Intraoral examination demonstrated permanent dentition with an additional tooth in the maxillary anterior region. The surrounding oral soft tissues were normal. An intraoral periapical radiograph demonstrated an additional tooth positioned **between the maxillary central incisors (11 and 21)**. The tooth was diagnosed as a **mesiodens**.

The classic premaxillary position was consistent with the most common anatomical presentation of supernumerary teeth. Because the supernumerary tooth was clinically apparent and represented an additional tooth in the anterior aesthetic zone, extraction was selected. Oral prophylaxis was planned, followed by extraction of P11 under local anesthesia. Oral-hygiene instructions and six-monthly follow-up were advised.



IntraOral Periapical Radiograph



Post-operative picture



Intraoral Examination

Clinical significance

Mesiodens is the most clinically relevant form of anterior supernumerary tooth because of its potential influence on eruption and alignment of the permanent incisors. Current literature confirms that mesiodens may present as an erupted or impacted tooth and may contribute to crowding, displacement, delayed eruption and aesthetic problems.

Case 3 – Supplemental Supernumerary Tooth Mimicking a Normal Incisor

A 13-year-old female presented with a complaint of a **forwardly positioned tooth in the upper anterior region**, which had been noticed for approximately 3 years. She was medically healthy and had no previous dental history.

Extraoral examination revealed normal facial symmetry and normal temporomandibular joint findings. Intraoral examination revealed permanent dentition with an additional tooth associated with the maxillary anterior region. A lingually erupted tooth was also noted in relation to the mandibular anterior region. Pit caries were present in several posterior teeth. A maxillary occlusal radiograph revealed an additional tooth between 11 and 21. Unlike the conical morphology characteristic of many mesiodens, this tooth was described as **supplemental**, meaning that it closely resembled a normal tooth in morphology.

The final diagnosis was therefore a **supplemental supernumerary tooth associated with 11 (P11)**. Extraction of the supplemental tooth under local anesthesia was planned. Preventive dental care, restoration of carious teeth and oral-hygiene instructions were included in the treatment plan. Six-monthly follow-up was advised.



Maxillary Occlusal Radiograph



Intraoral Examination



Post-operative picture

Clinical significance

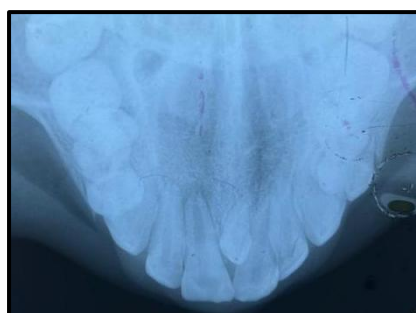
This case is important because supplemental supernumerary teeth may be difficult to recognize clinically when their morphology closely resembles a normal tooth. The diagnosis requires accurate tooth enumeration and correlation with the normal dental formula. Recent literature emphasizes the importance of describing supernumerary teeth according to morphology, location, orientation and eruption status rather than relying exclusively on traditional terminology.

Case 4 – Conical Mesiodens with Delayed/Partial Eruption and Retained Primary Teeth

An 11-year-old male presented with an **extra tooth in the upper anterior region**, which had been noticed for approximately 2 years. The patient was medically healthy and had no previous dental history.

Extraoral examination revealed normal facial symmetry and normal temporomandibular joint findings. Intraoral examination showed a mixed dentition pattern. The additional tooth was recorded as P11. Several permanent teeth, including 13, 14, 23, 34 and 37, were partially erupted. Grossly decayed primary teeth 54 and 84 were also present. A maxillary occlusal radiograph demonstrated an additional tooth between 11 and 21. The tooth was characterized as a **conical mesiodens**. The radiographic findings established its location in the premaxillary region and supported the diagnosis.

The treatment plan included oral prophylaxis followed by extraction of P11 along with the grossly decayed 54 and 84 under local anesthesia. Preventive oral-hygiene instructions and six-monthly follow-up were advised.



Maxillary Occlusal Radiograph



Intraoral Examination



Post-operative picture

Clinical significance

This case demonstrates the importance of evaluating supernumerary teeth in the context of the entire developing dentition. The presence of a mesiodens in a

child with partially erupted permanent teeth requires assessment for possible eruption disturbance and adequate follow-up. Recent evidence suggests that the morphology, orientation and position of a supernumerary tooth can influence eruption and the need for subsequent orthodontic intervention.

Table 1. Summary of the Four Cases

Parameter	Case 1	Case 2	Case 3	Case 4
Age	14 years	12.5 years	13 years	11 years
Sex	Male	Female	Female	Male
Main complaint	Pain/decayed posterior tooth	Extra anterior tooth	Forwardly positioned anterior tooth	Extra anterior tooth
Site	Mandibular anterior/canine region	Maxillary anterior	Maxillary anterior	Maxillary anterior
Tooth designation	P33	P11	P11	P11
Type	Peridens	Mesiodens	Supplemental	Conical mesiodens
Imaging	OPG	IOPA	Maxillary occlusal radiograph	Maxillary occlusal radiograph
Key finding	Radiopaque tooth between 32 and 33	Extra tooth between 11 and 21	Supplemental tooth between 11 and 21	Conical tooth between 11 and 21

Associated findings	Caries involving 36	None significant	Multiple pit caries	Partially erupted teeth; grossly decayed 54 and 84
Treatment	Extraction of P33	Extraction of P11	Extraction of P11	Extraction of P11, 54 and 84
Follow-up	6-monthly	6-monthly	6-monthly	6-monthly

Discussion

The clinical relevance of supernumerary teeth goes beyond the mere existence of an extra tooth, making them a significant developmental aberration in paediatric dentistry. Age, sex, anatomical position, morphology, eruption status, clinical complaint, and related dental anomalies vary among the four examples shown here. Because the extra tooth was located in the mandibular canine region, the first example is especially peculiar. Although mandibular premolar supernumeraries are well known, the majority of paediatric supernumerary teeth are found in the maxillary anterior area. Regarding location, 92.6% of supernumerary teeth are found in the maxillary arch. According to recent research, mandibular premolar supernumeraries have a unique clinical character and may need surgical treatment based on how they relate to the inferior alveolar canal and nearby roots. When proper surgical planning was done, postoperative problems were rare, according to a 2024 comprehensive study encompassing 90 patients. The maxillary anterior area was engaged in the final three cases. This is in line with the fact that supernumerary teeth are known to favour the premaxilla (5).

The majority of patients had a single supernumerary tooth, according to a large 2026 study that included over 2,000 nonsyndromic youngsters and revealed 2,864 premaxillary supernumerary teeth. The most common morphologies were conical, tuberculate, and supplementary. Mesiodens was the diagnosis made for the second and fourth cases. Because of their close anatomical proximity to the permanent central incisors, mesiodens are very significant. They could cause a midline diastema, cause displacement or rotation, obstruct eruption, or exacerbate crowding. When the tooth erupts, like in Case 2, the clinical presentation might be clear, but in Case 4, radiographic evaluation might be necessary. The additional supernumerary tooth is another clinically significant subgroup that is demonstrated in Case 3. A supplemental tooth resembles the normal dentition, in contrast to a rudimentary or conical supernumerary. Clinical recognition may be challenging as a result, especially if the tooth is closely aligned with the dental arch. Because supplementary teeth may exhibit different

eruption behaviour and clinical outcomes than conical supernumeraries, current research has highlighted the continued significance of morphological classification (6).

The current cases' age range of 11 to 14 years is clinically significant. During this time, anomalies of eruption or alignment become more noticeable and permanent anterior teeth are typically developed. Because supernumerary teeth may exist before clinical issues become apparent, recent research highlights the significance of early detection. According to the 2026 premaxillary study, morphology and orientation have an impact on eruption features; inverted, horizontal, and sagittal orientations are less conducive to eruption. In each of the four cases, radiography was crucial. The mandibular supernumerary tooth in Case 1 was located between 32 and 33 on the orthopantomogram. An intraoral periapical radiograph in Case 2 made the mesiodens between 11 and 21 quite evident. Maxillary occlusal radiography determined the placement and morphology of the extra teeth in Cases 3 and 4. These findings highlight how crucial it is to combine adequate radiographic assessment with clinical tooth counting. Localisation has been further enhanced by modern imaging. Three-dimensional information about tooth alignment, root shape, and proximity to nearby structures is provided by CBCT (7).

According to a recent multicenter research of 153 individuals, mesiodens were the most common place for supernumerary teeth, which were often conical. About 40% of patients experienced difficulties. Additionally, the study explicitly assessed CBCT's diagnostic efficacy in comparison to panoramic radiography. Individual treatment choices should be made. All four extra teeth were extracted in the current situations. Because every tooth was clinically identifiable and signified either an aberrant location or a potential source of disturbance, this method made sense. But not all supernumerary teeth need to be extracted right away. When a tooth is asymptomatic, does not obstruct eruption or alignment, and can be safely monitored, observation may be taken into consideration. Treatment may involve more than just extraction when supernumerary teeth prevent permanent incisors from erupting. Pooled effective eruption rates were 57.6% after

the supernumerary was removed alone, compared to 82.4% when space was created and 96.9% when orthodontic traction was paired with removal, according to a 2023 comprehensive review and meta-analysis encompassing 1,058 participants (8).

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This highlights how crucial it is to evaluate the permanent tooth's position, developmental stage, and available arch space before choosing a course of treatment. Preventive dentistry was also part of the care given in these cases. Supernumerary teeth can coexist with traditional dental illness, as seen by Cases 3 and 4, when carious teeth required extra care. Therefore, complete preventive treatment and regular evaluation of the growing dentition are still crucial; extraction alone should not be considered the final goal. It's interesting to note that the four cases show various clinical diagnosis routes. While Cases 2 and 4 were discovered because the patients or parents recognised an extra anterior tooth, Case 1 was discovered by accident while evaluating a painful carious mandibular molar. Aesthetic and positional concerns led to the presentation of Case 3 (9).

This variety demonstrates why typical paediatric dental appointments require a thorough assessment of the entire dentition. The significance of keeping a low threshold for suspecting extra teeth during orthodontic follow-up was also emphasised in a recent case series on late-forming supernumerary teeth, which suggested routine clinical and radiographic assessment. Therefore, when the developing dentition is still at risk, ongoing monitoring may be necessary even after a diagnosed supernumerary tooth has been removed (10).

Conclusion

The significant clinical variety of supernumerary teeth is illustrated by this four-patient case series. A mandibular peridens, a maxillary mesiodens, an additional maxillary supernumerary tooth, and a conical mesiodens were among the cases. Presentations included carious primary teeth, partially erupted permanent teeth, and evident anterior cosmetic issues and anomalies, as well as an accidental radiographic discovery.

The diagnostic and anatomical correlations of supernumerary teeth may not be sufficiently established by clinical examination alone. While CBCT can be saved for complicated cases needing three-dimensional localisation, periapical, occlusal, and panoramic radiographs offer useful diagnostic information. When a supernumerary tooth interferes with eruption, alignment, aesthetics, or oral function, surgical extraction is

recommended. Treatment should be customised. The cases emphasize that early recognition, accurate radiographic diagnosis, appropriate surgical management and long-term follow-up are central to minimizing complications associated with supernumerary teeth.

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Conflict of Interest

The authors declare that they have no conflict of interest related to this study.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions

Dr. Debadyuti Ghosh: Conceptualization, case documentation, data collection, manuscript preparation, and review of the final manuscript.

Dr. Chitrita Gupta Mukherjee: Supervision, clinical guidance, critical review, and final approval of the manuscript.

Dr. Richa Singh: Case documentation, data collection, literature review, and manuscript preparation.

Dr. Nehal Dipti: Case documentation, data collection, literature review, and manuscript review.

Dr. Shweta Shubham: Case documentation, data collection, literature review, and manuscript review.

Dr. Shaswat Shrey: Case documentation, data collection, literature review, and manuscript review.

Dr. Shreeja Mrinal: Case documentation, data collection, literature review, and manuscript review.

All authors read and approved the final manuscript.

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