

CASE REPORT



Multiple supernumerary teeth with maxillary expansion and unilateral asymmetry: A case report

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ABSTRACT

Multiple supernumerary teeth are rare, particularly in non-syndromic patients, and may present significant diagnostic and therapeutic challenges when associated with facial asymmetry. We report the case of a 21-year-old female presenting with unilateral maxillary expansion caused by multiple impacted supernumerary teeth. Cone-Beam Computed Tomography (CBCT) demonstrated dentoalveolar enlargement and cortical remodeling without evidence of a true pathological lesion. Histopathological examination confirmed mature lamellar bone with chronic inflammatory changes. A staged surgical extraction approach was performed, resulting in improvement of facial symmetry and occlusal stability. This report highlights the importance of advanced imaging modalities in differentiating adaptive bone remodeling from pathological maxillofacial lesions and emphasizes the role of careful multidisciplinary treatment planning.

KEY WORDS

Supernumerary teeth;
Maxillary expansion;
Facial asymmetry; Cone-
beam computed
tomography

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Introduction

Supernumerary teeth are developmental anomalies arising from disturbances in odontogenesis and may occur either as isolated findings or in association with syndromic conditions [1]. Although single supernumerary teeth are relatively common in the anterior maxilla, the presence of multiple supernumerary teeth in non-syndromic patients is considered rare and clinically significant [2].

Beyond delayed eruption and dental crowding, supernumerary teeth may exert chronic pressure on adjacent structures, potentially leading to progressive alveolar bone remodeling, maxillary expansion, and facial asymmetry. Such changes may clinically and radiographically mimic pathological conditions, including fibro-osseous lesions, making accurate diagnosis challenging [3].

CBCT has become an indispensable imaging modality in the assessment of complex dentoalveolar anomalies. CBCT allows three-dimensional evaluation of tooth position, cortical bone integrity, and osseous remodeling, thereby facilitating differentiation between adaptive bone changes and true pathological lesions [4].

The present case report describes a rare presentation of multiple non-syndromic supernumerary teeth associated with unilateral maxillary expansion and facial asymmetry in a young adult female patient. The diagnostic approach, radiographic findings, histopathological evaluation, and staged surgical management are discussed to highlight the importance of careful differential diagnosis and appropriate treatment planning [5,6].

Patient Information

Age: 21 years

Sex: Female

Chief complaint: Slow progressive swelling on the right side of the midface

Duration: Approximately 2 years

Associated symptoms: Facial asymmetry, difficulty in occlusion, reverse crossbite

Medical history: No systemic disease

Family history: No known craniofacial or genetic disorders

History of trauma: Negative

Clinical Findings

Extraoral examination revealed noticeable right-sided midfacial fullness, mandibular deviation toward the affected side, and asymmetric facial contours. Intraoral examination demonstrated firm bony expansion along the right maxillary alveolar ridge, unilateral reverse crossbite, and mild crowding of the maxillary arch. No signs of infection, fistula, or mucosal alterations were observed.

Diagnostic Assessment

Orthopantomogram (OPG) showed a view of multiple supernumerary teeth with asymmetry in her mandible (Figure 1). CBCT examination revealed multiple impacted supernumerary teeth within the right maxilla associated with significant buccal and palatal expansion. Cortical bone remained intact without evidence of perforation. No radiolucent or mixed-density lesions suggestive of fibro-osseous pathology were identified, and normal trabecular architecture was preserved (Figure 2 and Figure 3).



Figure 1. OPG view.

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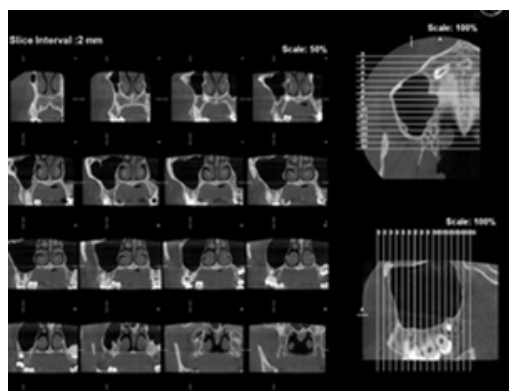


Figure 2. Coronal view of maxillary expansion.

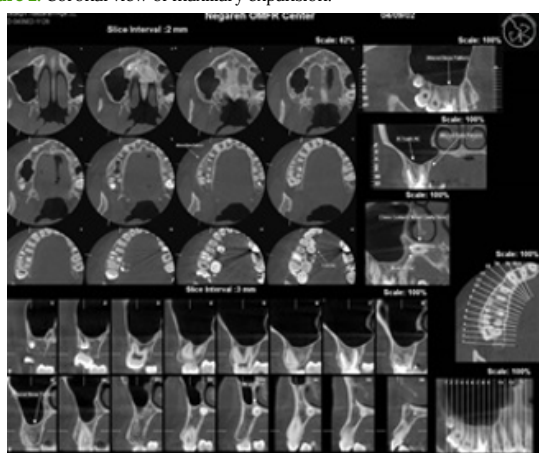


Figure 3. Axial view of multiple teeth.

The differential diagnosis included fibrous dysplasia, ossifying fibroma, odontogenic tumors such as odontoma, developmental eruption disturbances, and non-syndromic variants of cleidocranial dysplasia [7-9].

Histopathological evaluation demonstrated mature lamellar bone with focal chronic inflammatory infiltrates and no evidence of dysplastic or neoplastic tissue [10-12]. These findings supported a developmental etiology rather than a true maxillofacial pathological lesion.

Therapeutic Intervention

Due to the number and anatomical position of the supernumerary teeth, a staged surgical approach was selected. Under local anaesthesia with sedation, a full-thickness mucoperiosteal flap was elevated followed by conservative osteotomy to expose the impacted crowns. Four supernumerary teeth were extracted during the first-stage surgery. Copious irrigation and primary closure with interrupted sutures were performed.

Future Management Plan

Additional staged extractions will be planned according to healing and orthodontic requirements [12]. SPECT imaging demonstrated symmetrical tracer uptake in both condyles with no evidence of active condylar hyperplasia (Figure 4-6). Comprehensive orthodontic treatment followed by bimaxillary orthognathic surgery is planned to correct skeletal asymmetry and occlusal discrepancies [13,14].

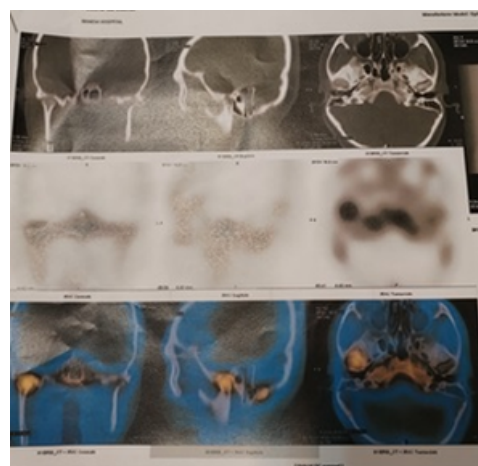


Figure 4. SPECT view of condylar activity.

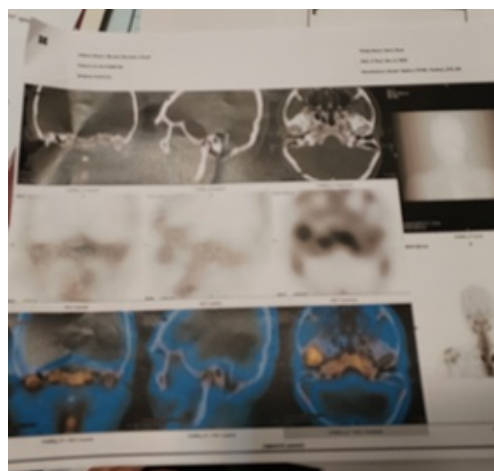


Figure 5. SPECT view of condylar activity.



Figure 6. Multiple supernumerary teeth.

Follow-Up and Outcomes

The immediate postoperative period was uneventful except for mild swelling. At the two-week follow-up visit, satisfactory healing and reduction of maxillary fullness were observed. One month postoperatively, improvement in buccal contour and partial correction of the occlusal cant were noted. The patient remains under active follow-up pending orthodontic preparation and future orthognathic correction [15].

Discussion

Multiple supernumerary teeth occurring in non-syndromic individuals are rare, and their association with unilateral maxillary expansion has been infrequently reported. In the present case, localized accumulation of impacted supernumerary teeth appeared to induce chronic mechanical stimulation and adaptive cortical remodeling rather than aggressive pathological bone destruction [16].

The initial differential diagnosis included fibro-osseous lesions such as fibrous dysplasia because of the presence of facial asymmetry and maxillary enlargement. However, CBCT findings demonstrated preserved cortical boundaries without a characteristic ground-glass appearance, while histopathological examination revealed mature lamellar bone without dysplastic changes, effectively excluding fibro-osseous pathology.

CBCT played a crucial role in diagnosis and treatment planning. Compared with conventional panoramic radiography, CBCT enabled accurate assessment of bone expansion, cortical integrity, and spatial relationships between the impacted teeth and adjacent anatomical structures. This reduced the risk of misdiagnosis and unnecessary aggressive surgical intervention [10,12].

A staged surgical approach was selected to minimize operative morbidity and permit gradual adaptation of the surrounding bone. Although long-term follow-up is still required, the initial postoperative outcome demonstrated improved facial symmetry and occlusal stability.

Developmental dentoalveolar anomalies should be considered in the differential diagnosis of facial asymmetry, particularly in young patients without syndromic manifestations. Early diagnosis and appropriate imaging evaluation can prevent overtreatment and improve multidisciplinary treatment planning.

Conclusion

Multiple unilateral supernumerary teeth may result in significant dentoalveolar and skeletal alterations capable of mimicking pathological maxillary lesions. Accurate diagnosis requires integration of CBCT imaging findings with histopathological evaluation. Staged surgical extraction followed by orthodontic and orthognathic management may provide optimal functional and esthetic outcomes.

Disclosure Statement

No potential conflict of interest was reported by the author.

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