

# Bilateral Maxillary Paramolars and Endodontic Therapy: A Rare Case Report

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## Abstract:

Supernumerary paramolars are a rare anomaly of the maxillofacial complex. They are more common in the maxilla than the mandible. This article reports a rare case of bilateral maxillary paramolars, their complications and management.

**Key Words:** Paramolars; Root Canal Therapy; Diagnosis

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## INTRODUCTION

Supernumerary teeth are defined as those in addition to the normal series of deciduous or permanent dentition. They may occur anywhere in the oral cavity. They may appear as a single tooth or multiple teeth, unilaterally or bilaterally, erupted or impacted and in the mandible, maxilla or both jaws. The prevalence of supernumerary teeth varies between 0.1 and 3.8 per cent and is more common in the permanent dentition [1-3]. The incidence is considerably higher in the maxillary incisor region followed by maxillary third molar and mandibular molar, premolar, canine and lateral incisors [4,5]. Though there is no significant sex distribution in primary supernumerary teeth, males are affected approximately twice as much as females in the permanent dentition [6,7]. Supernumerary teeth may be classified according to chronology, location (topography), morphology and orientation. Chronologically, as pre-deciduous, similar to permanent teeth, post permanent or complementary; morphologically, as conical, tuberculate, supplemental (eumorphic) and odontome; topograph-

ically, as mesiodens, paramolar, distomolar and parapremolar; according to orientation, as vertical, inverted and transverse [8]. Paramolars are supernumerary molars, usually rudimentary (dysmorphic), situated buccally or lingually/palatally to the molar row. Mostly, they are situated between the second and third molars, while in very rare cases they can be found in between the first and second molars. Distomolars are situated either directly distal or distolingual to the third molar and are usually rudimentary cone-shaped. The exact etiology of supernumerary teeth has not yet completely been understood. Several theories have been suggested for their occurrence such as the phylogenetic reversion theory (atavism), the dichotomy theory (splitting of the tooth bud into two parts), dental lamina hyperactivity theory and a combination of genetic and environmental factors [9]. Generally, multiple supernumerary teeth are associated with diseases or syndromes [4]. Supernumerary teeth show strong association with developmental disorders such as cleft lip and palate (40%), cleidocranial dysostosis, Gardner's syndrome (auto-



**Fig 1.** Preoperative bilateral paramolars; and carious maxillary right and left second molars.

somal dominant inheritance), and less commonly with Ehlers-Danlos syndrome, Fabry's disease (angiokeratoma corporis diffusum), chondroectodermal dysplasia, incontinentia pigmenti and tricho rhino-phalangeal syndrome [2,9]. Supernumerary teeth may erupt normally, remain impacted, appear inverted or assume an abnormal path of eruption. These supernumerary teeth may lead to delay or failure of eruption of permanent teeth, displacement, crowding, root resorption, dilaceration, loss of vitality of adjacent teeth, subacute pericoronitis, gingival inflammation, periodontal abscesses, dental caries due to plaque retention in inaccessible areas, incomplete space closure during orthodontic treatment and pathological problems such as dentigerous cyst formation, ameloblastomas, odontomas and fistulae.

They may also interfere in alveolar bone grafting and implant placement. Occasionally, supernumerary teeth are asymptomatic and may be detected by chance during radiographic examination. This paper reports a rare case of bilateral maxillary paramolars (situated between the first and second molar) and distomolars without association with any developmental disorder.

## CASE REPORT

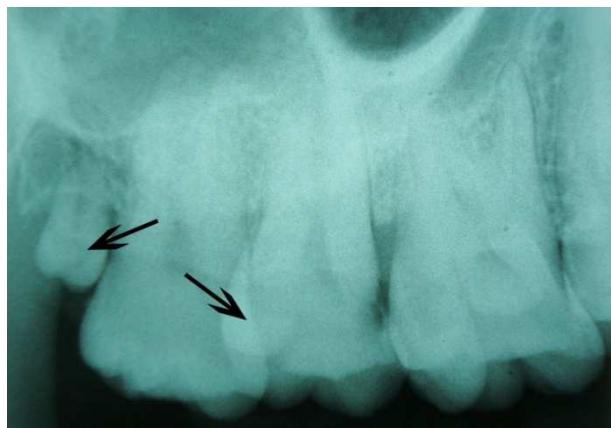
A 27-year-old man reported to the Department of Conservative Dentistry and Endodontics,

Manipal College of Dental Sciences, Mangalore with the chief complaint of decay in the upper back teeth. Medical and family histories were noncontributory. On intra-oral examination, caries were seen in 17 (maxillary right second molar) and 27 (maxillary left second molar) (Fig 1). Bilateral paramolars were also present between the maxillary first and second molars. On the right side, the paramolar was placed palatally, whereas on the left side it was situated buccally (Fig 1).

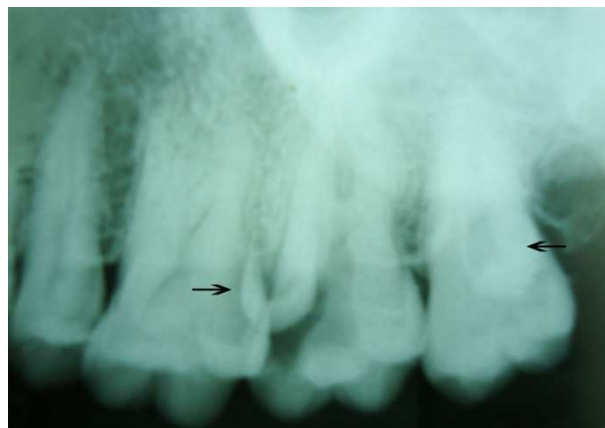
These paramolars were conical in shape and vertically oriented. On soft tissue examination, there was inflammation in the interdental papilla between the first and second molars. The pulp status of maxillary second molars (right and left) was evaluated using heat test, cold test and electric pulp tester (Parkell Electronics Division, Farmingdale, NY).

The right maxillary second molar (17) showed negative response and was tender on percussion, while the left second molar (27) showed normal response and was not tender on percussion. Intra-oral periapical radiograph (IOPA) was advised for both sides. Right side IOPA radiograph revealed the presence of coronal radiolucency involving the pulp chamber suggesting caries perforating the pulp tissue in maxillary right second molar (17) (Fig 2), while the left side showed presence of coronal radiolucency which did not involve the pulp chamber in the maxillary left second molar (27) (Fig 3).

As a coincidental finding on IOPA, impacted distomolars were seen bilaterally in the maxilla (Figs 2 and 3). These distomolars were vertically oriented and dysmorphic. The patient was then advised for an OPG to check the presence of multiple supernumerary teeth. The OPG revealed only maxillary bilateral paramolars and distomolars (Fig 4). The treatment plan was then formulated. The maxillary right second molar (17) was advised for root canal therapy and the maxillary left second molar (27) was advised for restoration followed by



**Fig 2.** Pre-operative right side intra oral peri-apical radiograph showing carious maxillary right second molar (17), paramolar and distomolar.



**Fig 3.** Pre-operative left side intra oral peri-apical radiograph showing carious maxillary left second molar (27), paramolar and distomolar.

the extraction of both paramolars as those areas were inaccessible to maintain oral hygiene. This inaccessibility could have led to the recurrence of dental caries and compromised periodontal health. No treatment was advocated for any of the distomolars as they were not associated with any complication.

Local anesthesia was administered and the access cavity was prepared in the maxillary right second molar (17) under rubber-dam isolation. Working lengths were determined by using the technique of Ingle and Bakland [10]. Shaping and cleaning of the root canals were performed using Protaper files (Dentsply Maillefer, Ballaigues, Switzerland). The canals were irrigated with 2.5% sodium hypochlorite, 17% aqueous solution of EDTA, 0.2%w/v chlorhexidine gluconate (Vishal Dentocare PVT, LTD India) and saline as a final irrigant using 26 gauge needles. The canals were dried using sterile paper points (Dentsply Maillefer, Ballaigues, Switzerland) and obturated with gutta percha cones and AH Plus sealer (Dentsply Maillefer, Ballaigues, Switzerland) with lateral compaction followed by the vertical compaction technique.

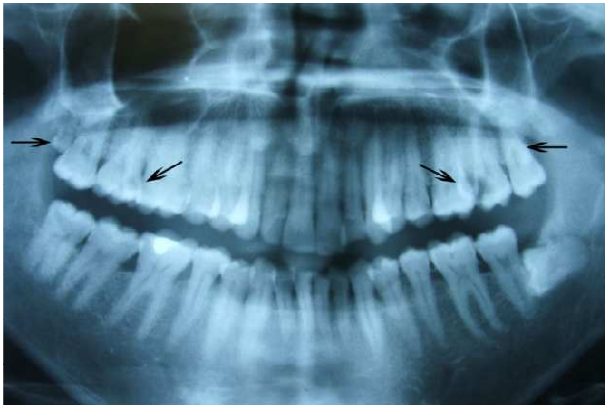
The access cavity was cleaned with dampened cotton then restored with composite resin (3M ESPE, St. Paul, USA) (Fig 5). In the maxillary left second molar, the carious tissue was exca-

vated and restored with amalgam. After completion of restorative treatment, both right and left quadrant paramolars were extracted (Fig 6). This was carried out to facilitate good oral hygiene maintenance so that the recurrence of caries and gingival inflammation could be prevented.

## DISCUSSION

Detailed history, clinical examination, thorough investigation, early diagnosis and appropriate treatment of supernumerary teeth are mandatory. An un-erupted supernumerary may be found by chance during radiographic examination. Sometimes clinicians may suspect the presence of supernumerary teeth if there is failure of eruption or ectopic eruption of permanent tooth, persistence of deciduous tooth, wide diastema and obvious presence of additional teeth [11]. An anterior occlusal or periapical radiograph using paralleling technique and OPG are the most useful radiographic investigations to visualize supernumerary teeth. Recently, computed tomography has also been used to detect the presence of supernumerary teeth [12,13].

A complete radiographic survey of the entire oral cavity is essential to identify the presence of all impacted supernumerary teeth, because the ratio of impacted to erupted supernumerary



**Fig 4.** Preoperative OPG showing maxillary bilateral paramolars and distomolars.



**Fig 5.** Post operative intra oral peri-apical radiograph showing completion of endodontic therapy in maxillary right second molar (17).

teeth ranges from 3 to 1. However, radiographs alone are not adequate for the definitive diagnosis.

Their interpretation should always be conducted in conjunction with clinical findings. Treatment depends on the type and location of the supernumerary teeth and on its potential effect on adjacent hard and soft tissue structures. Supernumerary teeth can be managed either by removal or by maintaining them in the arch and frequent observation.

Removal of the supernumerary teeth is recommended where [7];

- there is associated pathology
- permanent tooth eruption has been delayed due to the presence of a supernumerary tooth
- increase risk of caries due to the presence of supernumerary teeth which makes area inaccessible to maintain oral hygiene
- altered eruption or displacement of adjacent tooth is evident
- severely rotated teeth leading to further complication
- orthodontic treatment needs to be carried out to align the teeth
- its presence compromises alveolar bone grafting and implant placement
- there is compromised esthetic and functional status

These teeth may be kept under observation

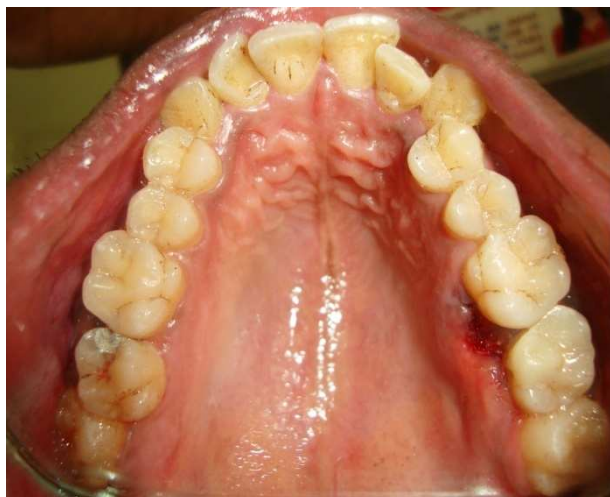
without extraction when satisfactory eruption of the related teeth has occurred with no associated pathology and no functional and esthetic interference. In the present case, paramolars on both sides were extracted because they were associated with complications, such as deep carious lesions in the adjacent teeth and gingival inflammation in the surrounding areas. Whereas, distomolars were kept under observation as they were not associated with any complications.

Extraction should be performed carefully to prevent damage (ankylosis and maleruption) to the adjacent permanent teeth. The clinician should be careful to avoid complications, such as damaging nerve and blood vessels during manipulation of the tooth, perforation of the maxillary sinus, pterygomaxillary space, orbit and fracture of the maxillary tuberosity. Clinicians must also be alert, as sometimes supernumerary teeth are fused with the adjacent tooth structure at the crown, or the root level which may make extraction difficult [14-16].

## CONCLUSION

Supernumerary teeth can present in any region of the oral cavity. They may erupt or remain impacted and may lead to various complications. Clinicians should be aware of the various types of supernumerary teeth and formu-





**Fig 6.** Post operative picture after extraction of paramolars.

late a sound treatment plan after thorough clinical and radiographic investigations to meet the challenges.

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