

Unilateral maxillary distomolar: A case report and review of the literature

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Abstract: Supernumerary teeth are defined as those in addition to the normal series of deciduous or permanent dentition. Supernumerary teeth is more prevalent among males and in the permanent dentition. The exact etiology of supernumerary teeth is unknown, they may occur anywhere in the oral cavity. They may appear as a single tooth or multiple teeth, unilaterally or bilaterally, erupted or impacted, maxilla or both jaws, it may be syndrome associated or it may not, The most common supernumerary teeth is mesiodense, Supernumerary teeth may be classified according to chronology, location (topography), morphology and orientation. A 37 year old otherwise healthy woman patient was referred to the department of Oral Medicine of shorish dental teaching hospital, Sulaimani, for routine general dental check up, intraoral examination showed calculus on the lingual surface of the lower anterior teeth, the patient was sent for pantomography, pantomography revealed unilaterally impacted maxillary distomolar by chance, distomolar displayed normal tooth morphology with no any associated pathology. supernumerary impacted fourth molar is a rare phenomenon; the exact etiology is unknown, some of them produce complications, mostly they are chance radiographic finding, the treatment is controversial, and the decision to remove these supernumerary teeth should be based on a risk/benefit analysis similar to that of third molars.

Key words: Supernumerary teeth, distomolar, mesiodense

I. Introduction

Extra teeth in dentition are termed "Supernumerary teeth" and are a very well known dental phenomenon^(1,2). The prevalence of these teeth for permanent and primary dentition in various populations is between 0.5- 5.3% and 0.2-0.8%⁽¹⁾.

Supernumerary teeth are more frequent in males than in females⁽³⁾. The aetiology of supernumerary teeth is not completely understood. Both genetic and environmental factors have been considered, several theories have been suggested to explain their occurrence, Atavism, Dichotomy theory, Dental lamina hyperactivity theory and Genetic factors⁽⁴⁾. Supernumerary teeth can occur as singles, multiples, unilaterally or bilaterally and in the maxilla, the mandible or both⁽²⁾. A supernumerary may be discovered by chance as a radiographic finding with no associated complications. However, if complications arise, they may cause prevention or delay of eruption of associated permanent teeth; Displacement or rotation of permanent teeth; Crowding; Incomplete space closure during orthodontic treatment; Dilaceration, delayed or abnormal root development of associated permanent teeth; Root resorption of adjacent teeth; Complications with the supernumerary itself; Late-forming supernumerary teeth.⁽⁴⁾ This article reports a case of unilateral impacted maxillary fourth molars on panoramic radiography.

II. Case report

A 37 year old female patient reported to the department of Oral Medicine of shorish dental teaching hospital, Sulaimani, for routine general dental check up, This research was approved by the Committee of Ethics in Research of the University of Sulaimani and shorish health center. According to Declaration of Helsinki, signed consent form was obtained from the patient before conducting the study⁽⁵⁾. Intraoral examination showed calculus on the lingual surface of the lower anterior teeth, the patient was sent for pantomography for checking the status of periodontal condition and evaluation of bone loss, pantomography revealed unilaterally impacted maxillary distomolar accidentally and it demonstrated position of distomolar separate from those of third molar, distomolar displayed normal tooth morphology with regard to crowns and roots but it was angularly impacted

and relatively smaller than the third molar, pantomography revealed no any associated pathology (Fig.1), the patient had no any syndrome.

**Fig.1: Distomolar is found behind the third molar on the left side of maxilla On pantomograph.
Distomolar is angularly impacted**



III. Discussion

Supernumerary teeth can be defined as any teeth or tooth substance in excess of the usual configuration of the normal number of deciduous or permanent teeth ⁽⁶⁾.

Current data in the literature show that supernumerary teeth are observed in 0.1% to 3.8% of the general population but this prevalence can be as high as 28% in patients with cleft and lip palate ⁽¹⁾. Incidence is higher in males ⁽³⁾

The etiology of supernumerary teeth is still uncertain. The atavism or phylogenetic theory suggested that the occurrence of supernumerary teeth is a regression to the extinct ancestral tissues or anthropoids. This theory is based on the phenomena that ancestor mammals have more teeth with three incisors, one canine, four premolars, and three molars in each quadrant of the jaw ⁽⁷⁾. The teeth of common modern mammals belong to these four tooth families. It is generally thought that during evolution, the total number of teeth per dentition decreased (from polyodonty to oligodonty) and the generations of teeth were also reduced (from polyphyodonty to diphyodonty or monophyodonty); whereas the morphology of teeth became more complex (from homodonty to heterodonty). Over the course of evolution, the teeth in placental mammals tend to disappear in an order that is opposite to the order of their eruption ⁽⁸⁾.

The tooth germ dichotomy theory proposed that during early tooth development, the dental lamina was divided into two parts of equal or different size, thus giving rise to two teeth with similar size, or one normal tooth and one dysmorphic tooth ⁽⁹⁾.

Hyperactivity of the dental lamina is another widely accepted theory ^(1,2). Primary dental lamina (odontogenic band) is the thickening of oral ectoderm forming during the initiation stage of deciduous teeth and it gives rise to the deciduous dentition. During the cap or bell stage of deciduous tooth development, successional dental lamina forms from the lingual or posterior aspect of deciduous tooth enamel organ. It later elongates under the oral epithelium and buds into the jaw mesenchyme forming the successional (permanent) tooth or the posterior molar teeth ⁽¹⁰⁾. Once the crown of the permanent tooth has formed, the dental lamina undergoes programmed cell death and degenerates. Residues of un-degenerated dental lamina epithelial cells may cause eruption cysts ⁽¹¹⁾, while over-proliferation or prolonged survival of dental lamina epithelial cells may cause supernumerary tooth formation ^(1,10,11).

Heredity is also believed to be an important factor. Supernumerary teeth occur more commonly in the relatives of affected patients than in the general population ⁽⁷⁾.

Although there are some reports of multiple supernumerary teeth without any systemic conditions or associated syndromes ⁽¹⁾, in most cases, multiple supernumerary teeth are associated with other conditions or defects such as cleft palate and cleft lip, or with variable syndromes. Supernumerary teeth in cleft plate and cleft lip may be caused by the splitting of tooth germs in the cleft regions.

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; topographically as mesiodens, paramolar, distomolar and parapremolar; according to orientation, as vertical, inverted and transverse ⁽⁴⁾.

Typically, a mesiodens is a conical supernumerary tooth located between the maxillary central incisors.⁽²⁾ These supernumerary teeth are usually located palatal to the permanent incisors, with only a few lying in the line of the arch or labially. The mesiodens is usually small and short, with a triangular or conical crown.⁽¹²⁾ A paramolar is a supernumerary molar, usually rudimentary, situated buccally or lingually/palatally to one of the molars or in the interproximal space buccal to the second and third molar. A distomolar is a supernumerary tooth located distal to a third molar and is usually rudimentary. It rarely delays the eruption of associated teeth. Parapremolar is a supernumerary tooth that forms in the premolar region and resembles a premolar⁽⁴⁾.

The most common supernumerary teeth are small conical peg-shaped with root development at the similar stage or ahead of that of adjacent teeth. They usually develop in the anterior maxilla as mesiodens. Tuberculate supernumerary teeth are large barrel-shaped with multiple cusps or tubercles. Their root development is delayed compared to that of adjacent teeth. They are mostly found unerupted in the palatal aspect of the maxillary central incisors, and this can cause the impaction of permanent maxillary incisors⁽²⁾.

Supplemental teeth are duplications of teeth in the normal dentition with essentially normal size and shape, and they are usually found at the end of a tooth series. The most common supplemental tooth is the permanent maxillary lateral incisor, but supplemental premolars and molars were also reported. The majority of supernumerary teeth found in the primary dentition are of the supplemental type. They usually erupt with normal morphology and alignment, and often appear as a supplemental lateral upper incisor⁽⁹⁾. Odontoma was listed as the fourth category of supernumerary teeth⁽⁹⁾. Odontoma contains a mass of dental tissues (enamel, dentin, cementum, pulp tissue), and is usually considered to be a hamartomatous (benign and local with disorganized mass) malformation rather than a neoplasm. There is no gender predilection in the occurrence of odontomas. On the basis of their gross and radiographic features, odontomas are further sub-classified into compound and complex types⁽²⁾. Compound odontomas contain some rudimentary tooth-like structures and are commonly found in the anterior maxilla, whereas complex odontomas contain totally disorganized mass of dental tissues and are often found in the premolar and molar regions⁽⁹⁾.

The most common supernumerary teeth, listed in order of frequency, are the maxillary midline supernumeraries (mesiodens), maxillary fourth molars, maxillary paramolars, mandibular premolars, maxillary lateral incisors, mandibular fourth molars, and maxillary premolars⁽¹³⁾.

The most frequent location is in the maxilla, the anterior medial region (mesiodens), where 80% of all supernumerary teeth are found. More rarely, they can be located in the superior distomolar zone, inferior premolar, superior premolar, inferior distomolar, superior canine zone, and inferior incisor⁽³⁾.

The clinical complications of supernumerary teeth include root anomaly, malocclusion, root resorption, displacement or rotation, failure of eruption or delayed eruption of adjacent tooth, cyst formation, and pulp necrosis with loss of vitality and esthetic disturbances⁽¹⁴⁾.

Definitive management of patients with supernumerary teeth remains controversial in terms of whether to remove such teeth or to monitor them. 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⁽⁹⁾;

- 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.

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⁽¹⁵⁾.

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