

**RETROSPECTIVE ANALYSIS OF INCIDENCE OF PARAMOLARS IN PATIENTS
REPORTING TO A DENTAL INSTITUTE****Study:** Retrospective Research**Type of Running Title:** Retrospective analysis of incidence of paramolars in patients reporting to a dental institute**Vikraman K S**Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Science,
Saveetha University, Chennai - 600077.**Melvin George**Senior lecturer, Department of Oral and maxillofacial surgery, Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai
- 600077.**Corresponding author****Melvin George****ABSTRACT:****Aim:** The aim of the present is to determine incidence of paramolars in patients reporting to a dental institute**INTRODUCTION:** Paramolar is a supernumerary molar usually small and rudimentary, most commonly situated buccally or palatally to one of the maxillary molars. Paramolar is a developmental anomaly and has been argued to arise from a combination of genetic and environmental factors. Reports of this entity are rarely found in the dental literature. The most common dental anomaly in the deciduous and permanent dentition concerns numerical abnormalities. Supernumerary teeth (or hyperdontia) are teeth that exceed the normal number of deciduous or permanent teeth in the oral cavity**MATERIALS AND METHOD:** The retrospective study was conducted in a university hospital setting, the available data with similar ethnicity was collected from the particular geography location. The trends in other locations were not assessed in this study setting. Ethical approval was given by the institutional ethical committee. This Retrospective study was conducted in a university setting. Data was collected from the patients who visited Saveetha Dental College between June 2019 and February 2021.

RESULT: The total sample size of our study was 18 patients out of which 61.11% were male and 38.89% were female. There was a significant prevalence in the upper arch was 67.67% followed by lower arch, 33.33%.

CONCLUSION: A clinician must be aware of the various types of supernumerary teeth and should recognize signs suggestive of their presence. One should perform required investigations when these conditions are suspected and upon diagnosis each case should be managed appropriately in order to minimize complication.

KEYWORDS: Paramolars, supernumerary teeth, upper arch, novel method

INTRODUCTION:

The most common dental anomaly in the deciduous and permanent dentition concerns numerical abnormalities. Supernumerary teeth (or hyperdontia) are teeth that exceed the normal number of deciduous or permanent teeth in the oral cavity (1–4).

Those teeth may be located anywhere in the oral cavity. Although supernumerary teeth may occur bilaterally or even in multiples, they most commonly occur unilaterally.(5) The prevalence of supernumerary teeth in permanent dentition ranges from 0.04% to 2.29%, while in deciduous dentition it ranges from 0.3% to 0.6% (6,7). In permanent dentition, the frequency of supernumerary teeth is twice as common in males as it is in females.(8–11)

Supernumeraries present a striking predilection for maxilla over mandible. The highest percentage (90%) of those is situated in the premaxillary region, especially in the central incisor region and in the midline. The other 10% is located in the mandibular premolar and maxillary canine regions, respectively (12–16). More frequently, supernumerary teeth fail to erupt and remain impacted. Usually, supernumeraries are associated with several congenital genetic disorders or syndromes such as Gardner's syndrome, cleidocranial dysostosis and cleft lip and palate.(17–19) Other less common syndromes associated with supernumeraries are Fabry disease, Ellis–van Creveld syndrome, Nance–Horan syndrome, Rubinstein–Taybi syndrome and tricho-rhino-phalangeal syndrome (20,21).

The crown morphology of supernumerary teeth varies from normal to atypical while their roots may or may not be completely developed (22) . They are classified according to their location, form and shape. According to their location, they are classified into mesiodens, parapremolar, paramolar and distomolar.(23–27) A mesiodens is situated in the midline maxillary area, while a parapremolar is situated between premolars and a paramolar is situated buccally or lingually to the molars or in the interproximal space between the second and third molars (28). A distomolar is located distal to the third molar (29). The forms of morphological variation are: conical—small peg shape (coniform), odontoma—supernumerary teeth with an irregular shape (tumor of odontogenic origin), supplemental—supernumeraries resembling adjacent unaffected teeth, tuberculate—multi-cusped and short barrel shaped teeth with a normal or invaginated crown but a rudimentary root (30–32). According to their shape, they are categorized as supplemental or eumorphic (normal size and shape) and rudimentary or dysmorphic (abnormal shape and smaller size). Conical, tuberculate and molariform types are considered rudimentary supernumerary teeth (33,34). The most common supernumerary teeth

present conical morphology (44.5%), followed by tuberculate (38.7%) and supplementary (16.7%). However, other studies have obtained prevalence data that varies from 31–75% for conical, 12–28% for tuberculate, and 4–33% for supplementary teeth (35,36).

Unerrupted and impacted supernumerary teeth are commonly revealed incidentally via a routine radiographic examination. The proper imaging technique is absolutely essential for a reliable evaluation of the prognosis and the appropriate therapeutic approach that must be separately adopted for each case (37–40).

The aim of the present is to determine incidence of paramolars in patients reporting to a dental institute

Our team has extensive knowledge and research experience that has translate into high quality publications(41),(42),(43),(44),(9–16,23,24) (25),(26,45,46).(18,19)

MATERIALS AND METHOD:

The retrospective study was conducted in a university hospital setting, the available data with similar ethnicity was collected from the particular geography location. The trends in other locations were not assessed in this study setting. Ethical approval was given by the institutional ethical committee. This Retrospective study was conducted in a university setting. Data was collected from the patients who visited Saveetha Dental College between June 2019 and February 2021. All samples who were diagnosed with paramolar at that particular time were considered as internal validity and a prescriptive pattern was followed to analyse the external validity. Case sheets were reviewed and cross verification was done by another examiner to avoid errors. This data was entered in the Excel sheet for tabulation and SPSS importing was done, Chi - Square association test was performed. Frequency of paramolars was the dependent variable and age, gender and teeth quadrant were independent variables.

RESULT AND DISCUSSION:

A total of 18 patients had paramolars out of which 61.11% were male and 38.89% were female. There was a significant prevalence in the upper arch was 67.67% and followed by lower arch, 33.33%. Figure 4 shows that both male and female had an equal incidence of paramolars in the upper arch (33.33%) and in lower arch; males showed a higher number of paramolars (27.78%) followed by females (5.56%). The patients in the age group of 22-32 showed a higher incidence of paramolars in both upper (33.33%) and lower arch (27.78%).

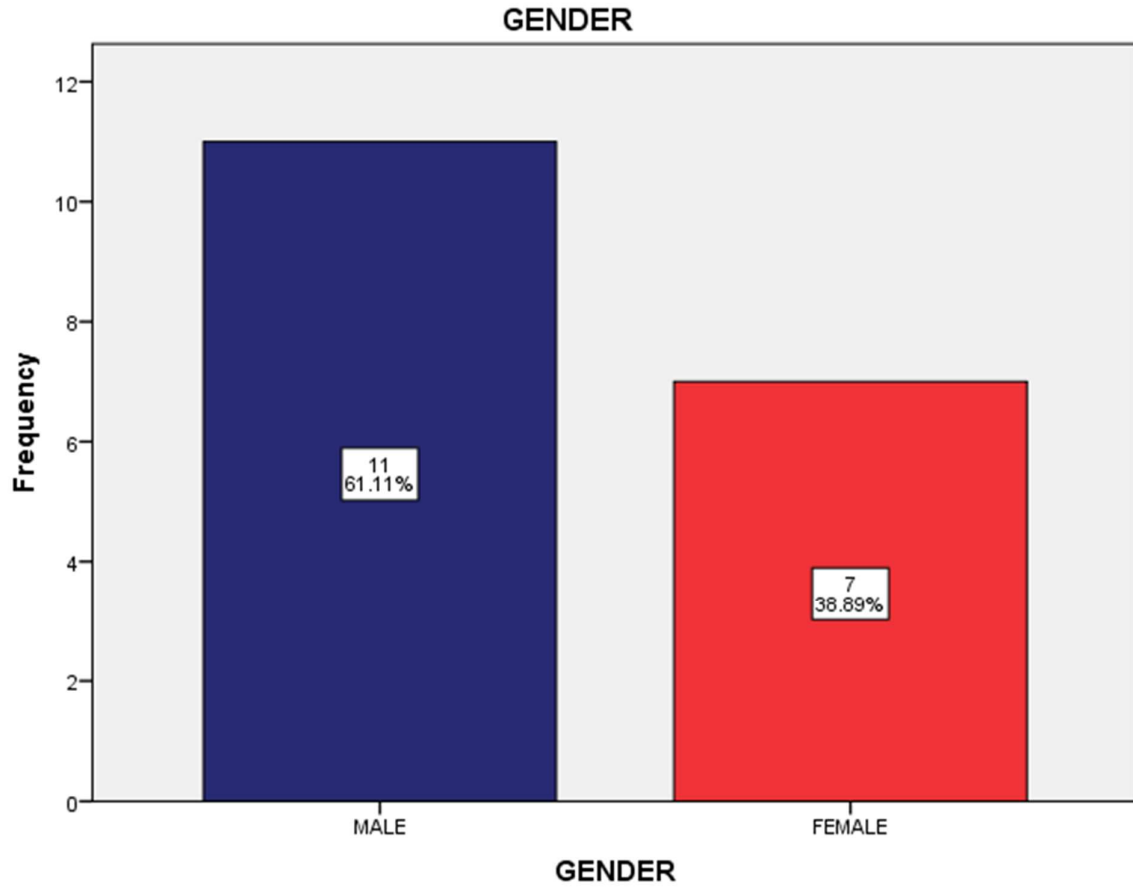


Figure 1: Bar chart depicts the frequency distribution of gender. X axis represents the number of patients with paramolars and Y axis represents the gender of the patients. This graph shows males (61.11%) were males with paramolars and females (38.89%).

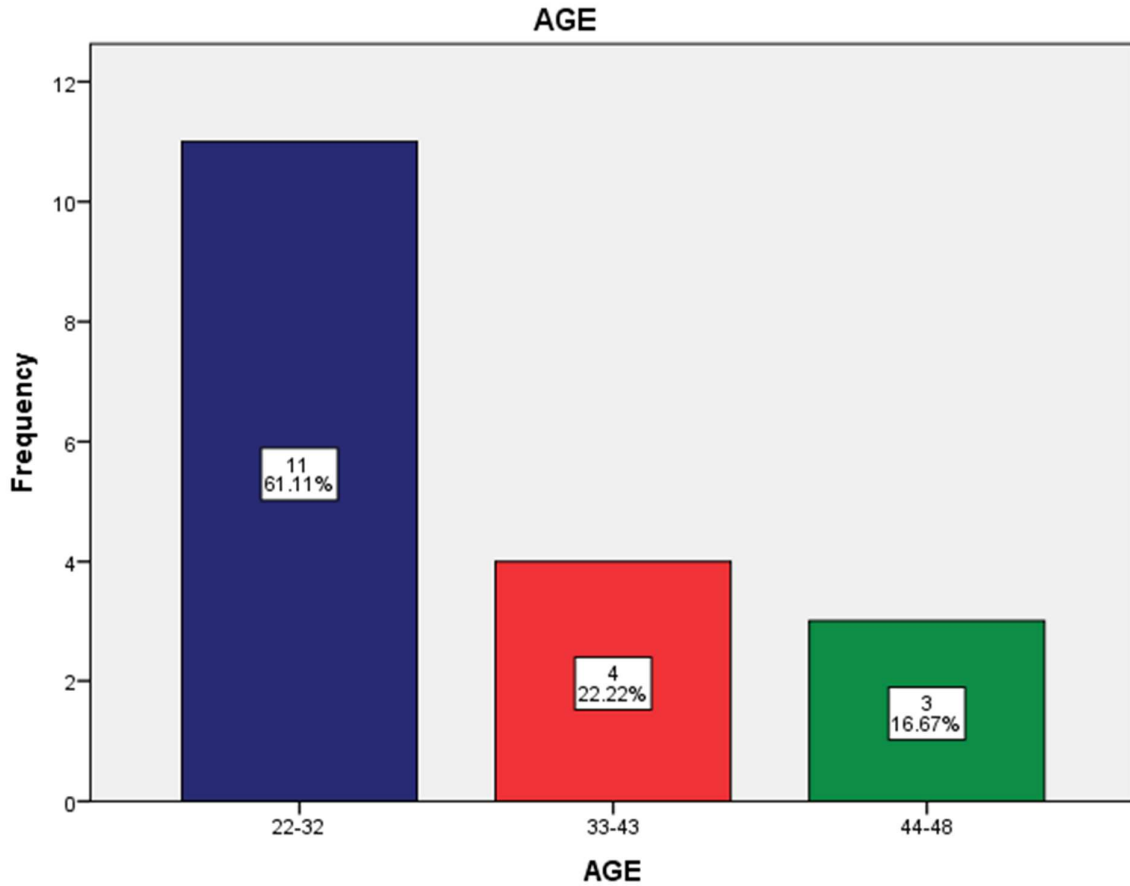


Figure 2: Bar chart depicts the frequency distribution of age. X axis represents the number of patients with paramolars and Y axis represents the age of the patients. This graph shows patients in the age group of 22-32 were higher with paramolars (61.11%) followed by 33-42 yrs were (22.22%) and 43- 48yrs were (16.67%).

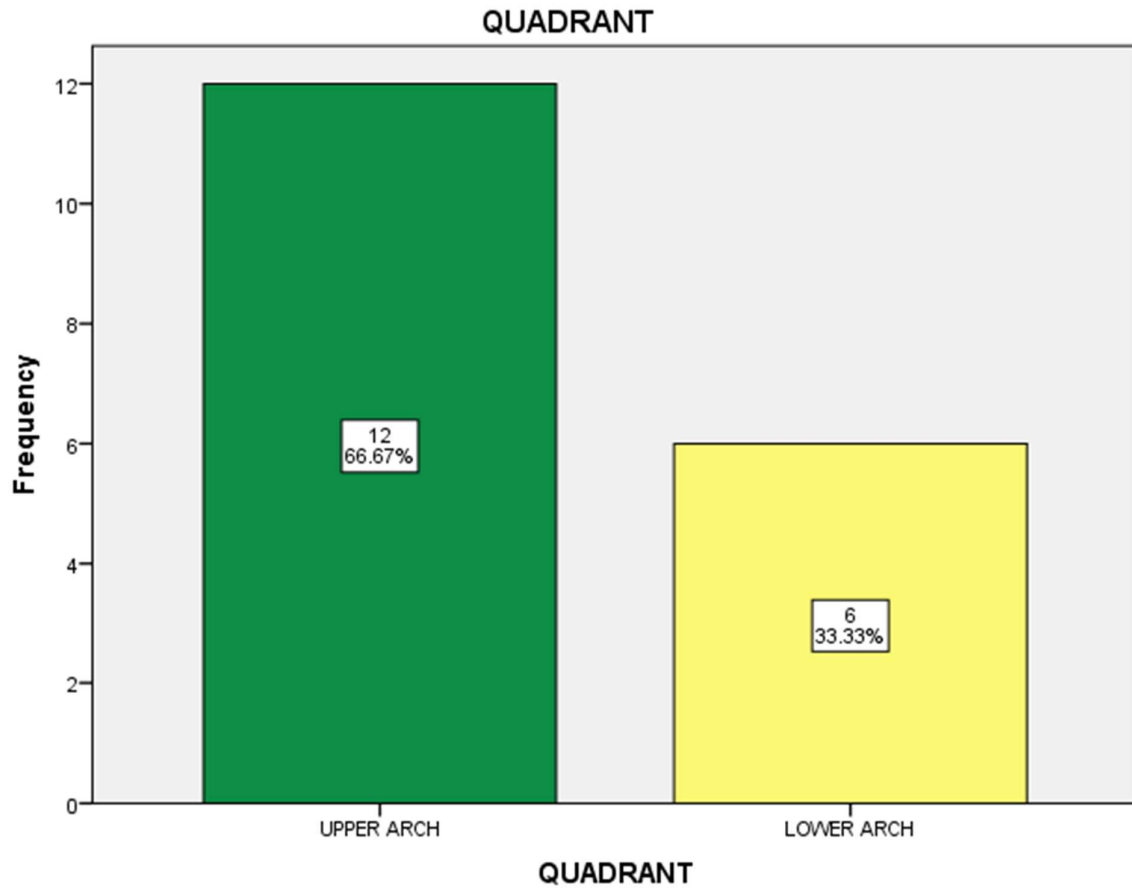


Figure 3: Bar chart depicts the frequency distribution of paramolars in the upper and lower arch . X axis represents the number of patients with paramolars and Y axis represents the upper and lower arch. This graph shows the upper arch was 67.67% and followed by lower arch were 33.33%.

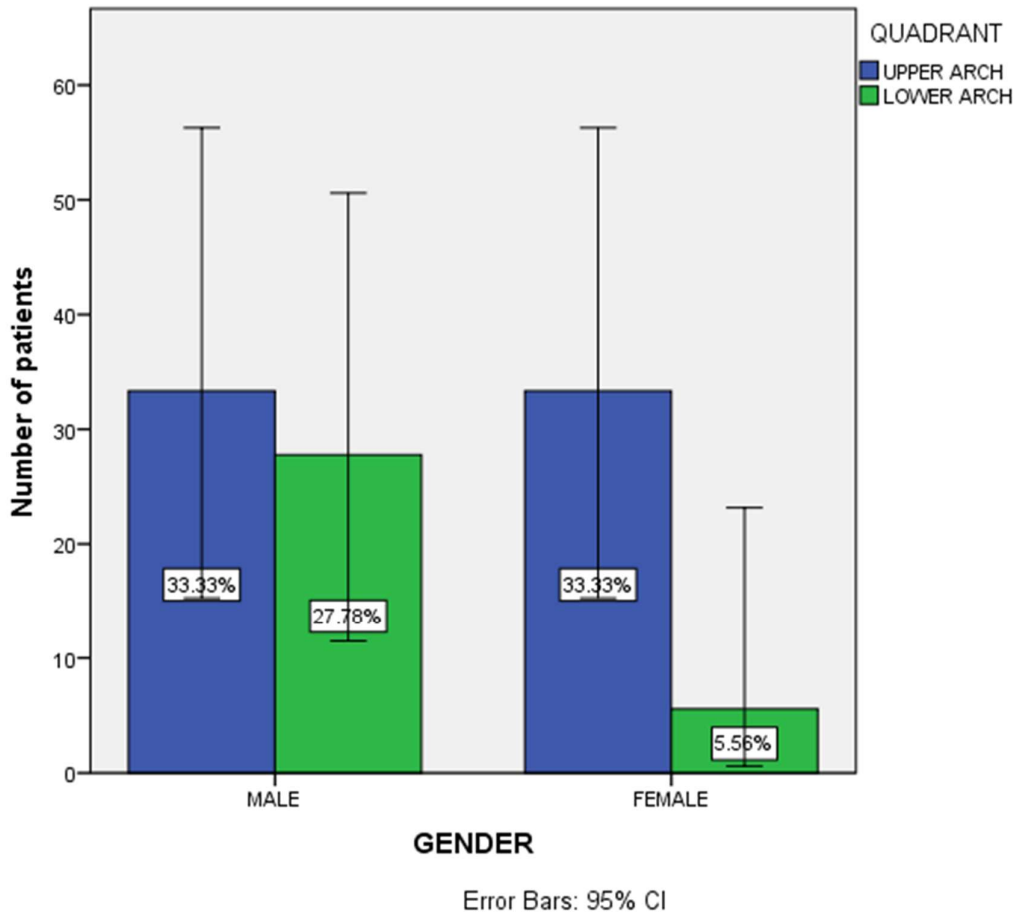


Figure 4: Bar chart depicting the association between gender and arch. The X axis represents the gender and the Y axis represents the number of patients with paramolars. Both male and female had an equal incidence of paramolars in the upper arch (33.33%) and in lower arch males showed a higher number of paramolars (27.78%) followed by females (5.56%). However, this is not statistically significant (Chi-square test: Pearson's Chi-square value - 1.870; p value - 0.171 (>0.05))

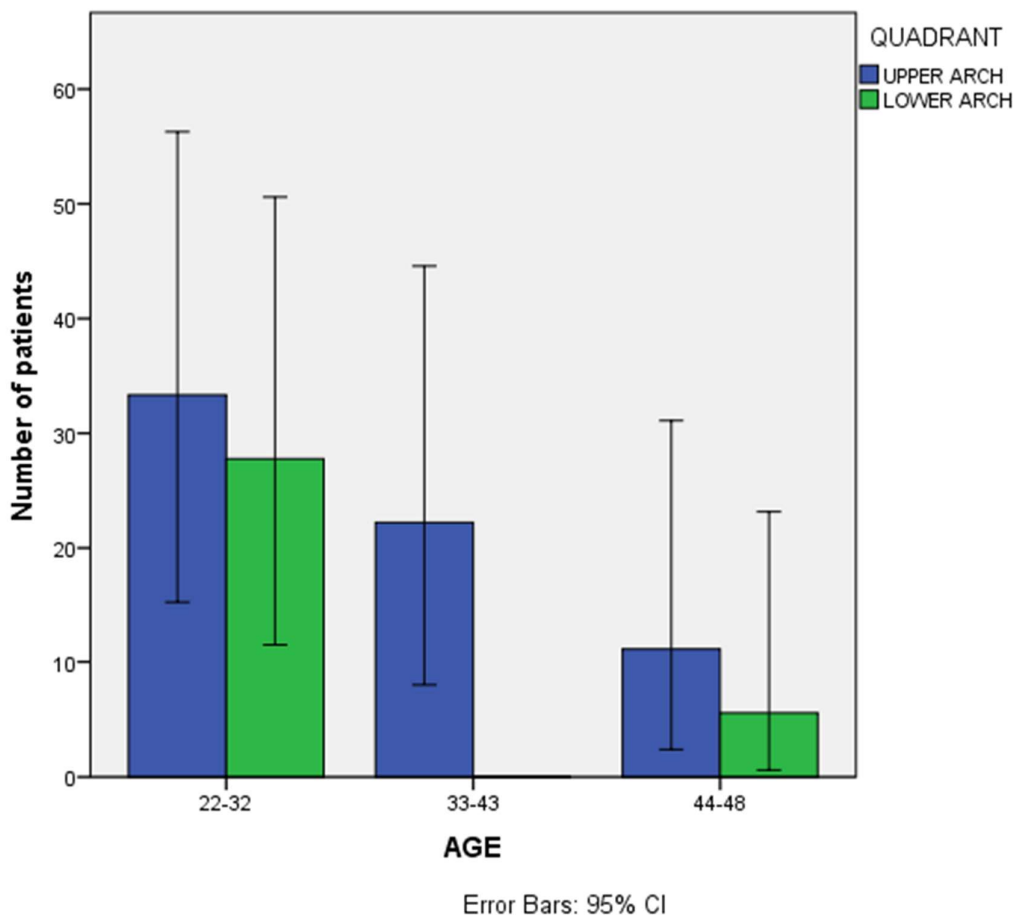


Figure 5: Bar chart depicting the association between age and arch. The X axis represents the age and the Y axis represents the number of patients with paramolars. The patients in the age group of 22-32 showed a higher incidence of paramolars in both upper (33.33%) and lower arch (27.78%). However, this is not statistically significant (Chi-square test: Pearson's Chi-square value - 2.727; p value - 0.256 (>0.05)).

The presence of supernumerary teeth is a common dental anomaly, but the occurrence of paramolars and parapremolars is relatively uncommon. A number of theories have been formulated to describe the etiology of supernumerary teeth; however, the etiology of this anomaly has not yet been clarified. The most commonly reported theories are the phylogenetic, the tooth germ dichotomy, the hyperactive dental lamina and the combination of genetic and environmental factors unified etiologic explanation (47).

As a result of phylogenetic evolution, the dimensions of the dental arches have been gradually redacted, followed by a decrease in tooth number and size. Thus, hyperdontia is related to a reversional phenomenon or atavism. Atavism is the tendency to return to primitive forms of features—in other words, the reappearance of features that had disappeared generations ago. Phylogenetic theory is not very strongly supported as it could only explain

single anomalies of supernumerary teeth (48). According to tooth germ dichotomy theory, the division of the tooth germ into two parts may occur as a result of an imbalance between molecules.

These parts of equal or different size may form two teeth of the same size or one normal and one dysmorphic tooth, respectively (49). According to the hyperactive dental lamina theory, the epithelial cells responsible for the formation of supernumerary teeth may persist for long periods (50). Based on this theory the formation of supernumeraries is a consequence of localized, independent, conditioned hyperactivity of the dental lamina (51). The hyperactive dental lamina theory is widely accepted; however, the most accredited theory is a combination of genetic and environmental factors with a unified etiologic explanation (52). The aforementioned theory may be strengthened by the presence of supernumerary teeth in relatives of subjects with this dental anomaly. Other studies that suggest genetic predisposition, as an etiological factor, are based on a dominant autosomal gene disorder. However, the hereditary trait is not proved by a simple Mendelian pattern. A potential explanation may be low penetrance of dominant autosomal transmission.

The clinical management of patients with paramolar usually depends upon the position of the paramolar and on its effect or potential effect on adjacent teeth and important anatomical structures.(53) Treatment options for paramolar as like any other supernumerary teeth may include observation or extraction. Observation involves no treatment other than monitoring the patient clinically and radiographically. This is true if the paramolar is asymptomatic and is not causing any problem. If any of the aforementioned complications are evident, it is advisable to extract the paramolar.(54)

CONCLUSION:

A clinician must be aware of the various types of supernumerary teeth and should recognize signs suggestive of their presence. One should perform required investigations when these conditions are suspected and upon diagnosis each case should be managed appropriately in order to minimize complication.

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