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**Research Article**

### STUDY TO KNOW THE FREQUENCY OF DENTAL ANOMALIES IN ORTHODONTIC PATIENTS

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**Abstract:**

**Objective:** To investigate the prevalence of dental abnormalities during routine clinical examination and oral diagnosis.  
**Study design:** A Prospective Study.

**Location and Duration:** The study was conducted at the department of orthodontics and it was coordinated with the department of periodontology, prosthodontics and the out-patient dental filter clinic for one year duration from December 2017 to December 2018.

**Method:** A total of 345 patients (male: female: 148: 197) in the orthodontic department were examined regarding the most common dental anomalies related to number (hyperdontic / hypodontic) and height (microdonts) in the orthodontic section orally and radiographically. makrodonts, fusion, jewel). (densevaginatus, dens dente, taurodontism) and enamel structure (amelogenesisimperfecta) and dentin (dentinogenesisimperfecta) form. The age range was 9 to 44 years (mean age 26.4). The selected patients did not show systemic disorders or related syndromes.

**Results:** In general, 18.8% of the patients examined showed dental anomalies. In males (mean total 78.3), 23.7 had more dental anomalies than females. Among the large anomalies found, hypodontics was the cause of the most common dental anomaly (mean value: 57.8), followed by upper teeth (mean value: 12.4) and taurodontism (mean value: 7.2). . Gender distribution for hyperdontia was higher in males with higher affinity than females (mean value 77.4) (mean value 23.7), microdontia, hypodontics and amelogenesisimperfecta. In addition, women had higher affinity with higher-level paramolars (mean value 84.7) than males (mean value 15.3), and mesiodensdens in males (mean value 87.6) were more frequent in males (mean value 87.6). 4.12). Females showed more affinity for lost teeth, especially mandibular premolar (mean value 88.4) and upper lateral incisors (mean value 65.4).

**Conclusion:** A wide range of dental anomalies were found to cause localized malocclusion, loss of space in orthodontics and dental aesthetic problems. These anomalies require teamwork of orthodontics, restorations and periodontics and are used for the functional and aesthetic restoration of dentists. For this reason, appropriate diagnosis and diagnosis of dental anomalies should be done routinely during clinical and radiographic evaluation.

**Key words:** Dental anomalies, Hyperdontia, Hypodontics, Orthodontics.

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## INTRODUCTION:

Dental anomalies are usually found in general dentistry and are associated with defects in the development of teeth caused by inherited, systemic, traumatic or local factors [1]. It makes orthodontic treatment planning, restorative procedures and denture replacement of dental prosthesis difficult. Dental anomalies are left untreated, both aesthetically and functionally, and long-term diagnosis of certain abnormalities is suspicious [2]. In order to restore dental prosthesis and provide reasonable aesthetics, early intervention and treatment is required as soon as it is established. In the past, a large number of authors have conducted large population studies on the prevalence of anomalies by race, gender, and geographical distribution [3]. Common anomalies such as hypodontics, hyperdontics and enamel defects require a multidisciplinary approach consisting of orthodontics, restorative, periodontal and oral treatments [4]. Several Pakistani authors have investigated the frequency of anomalies in the local population.

## MATERIALS AND METHODS:

A total of 345 patients (male: female: 148: 197) were examined by oral and radiographic findings. Radiographic examination revealed an OPG (orthopantogram) for each patient. Peri-apical radiographs were taken to confirm or re-evaluate

specific abnormalities. Intraoral clinical examination tools include a simple tooth buccal mirror and a dental probe.

The age range of the patients was 9 to 44 years (mean age 26.4 years). A variety of anomalies were found divided into the following groups.

- Abnormalities in the number of teeth (hyperdontia) and (hypodontia).

- Abnormalities in the size of the teeth (microdontia) and (macrodontia)

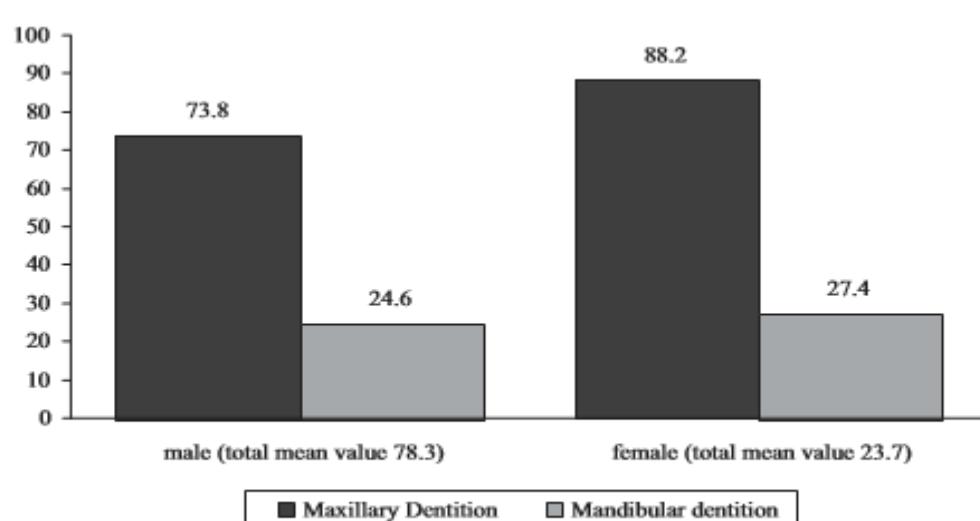
- Dental abnormalities include Dens evaginatus, Dens in Dente and Taurodontism.

- The anomalies in the enamel and dentin structure were amelogenesis imperfecta, environmental hypoplasia and dentinogenesis imperfecta.

SPSS 18.0 (statistical package for social sciences) was used to obtain the mean values.

## RESULTS:

In general, 18.8% of patients examined dental anomalies clinically and radiographically and showed that they affected the number, size, shape and defect of the enamel. As noted, dental anomalies were more common in maxillary teeth compared to mandibular teeth (Figure 1). In the group of dental anomalies, males (total mean value 78.3) showed higher prevalence than female anomalies compared to females (total average value 23.7).



**Fig. 1: Dental Anomalies Distribution in Maxilla & Mandible**

Among the prevalence anomalies found, hypodontics or lost teeth show the most common dental anomaly with an average primary value of 57.8 in our patient sample (Figure 2), mean 12.4 and odontomas (hyperdontic or supernumerary teeth with odontomas (2%) average value 5.1.

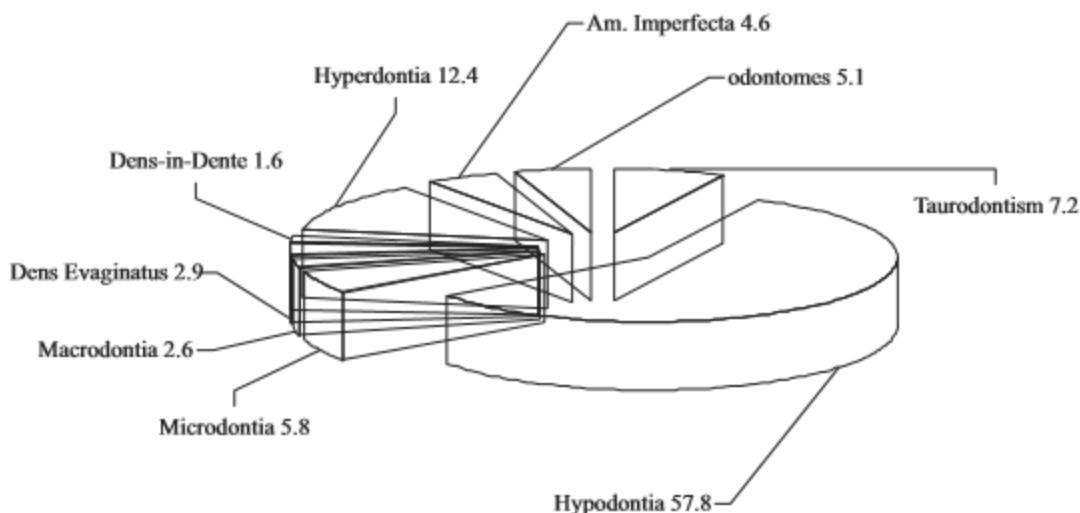


Fig. 2: Mean Distribution Values of Dental Anomalies

The mean value obtained from Maxilla 74.33 showed a higher upper level tendency than mandibular dentistry (mean value 25.71). According to the distribution by sex (Figure 3), males showed greater affinity for the mesiodens/dens (mean value 87.6) and subsequent distortions (mean value 68.4), whereas females showed a greater prevalence of

paramolars (mean value). 84.7 and odontomas (mean value 67.4). Females showed a higher tendency to tooth loss with second mandibular premolar (mean value 77.21) followed by second maxillary premolar (mean value 76.5) with lateral maxillary incisor (65.4) and mandibular incisor teeth (Figure 5) mean value 12.4).

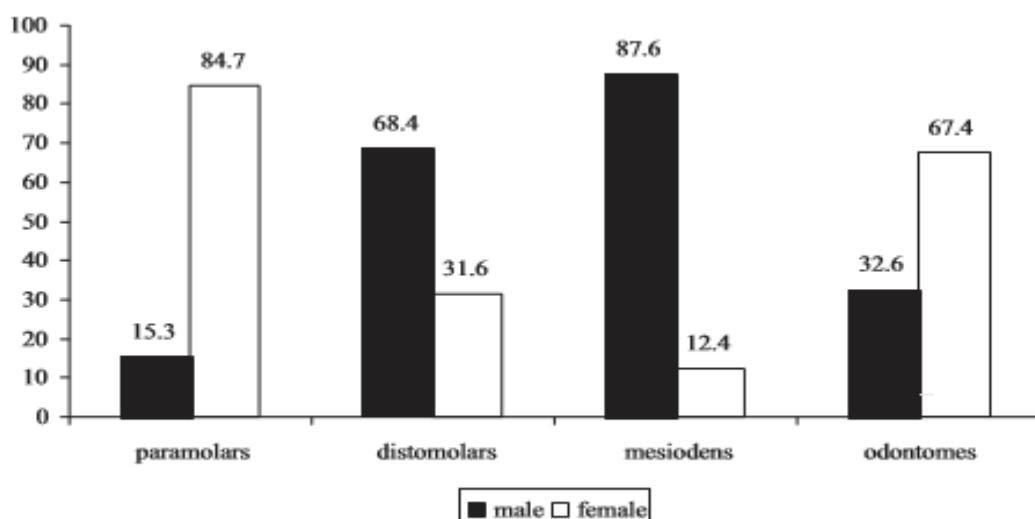


Fig. 3: Mean Prevalence Values of Supernumerary Teeth in Males/Females

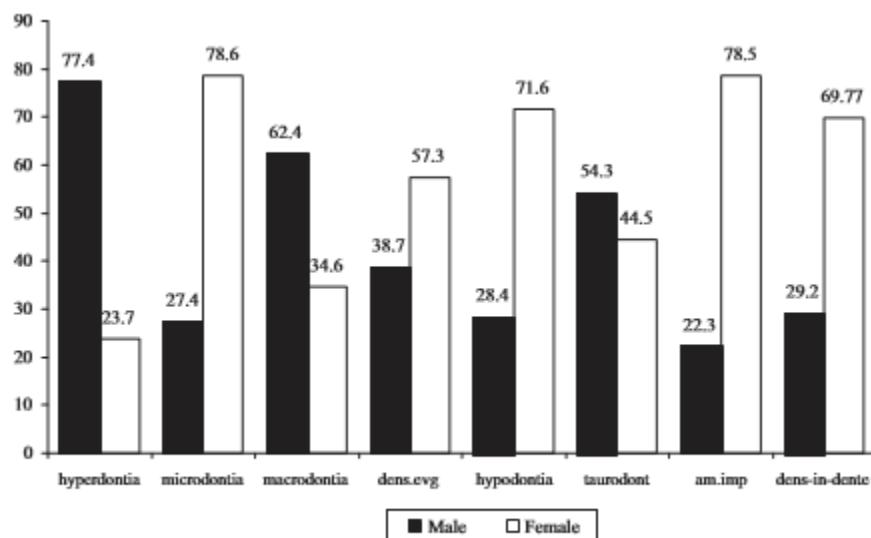
Among the observed dental anomalies, permanent upper lateral incisor teeth (mean value 75.83) and mandibular second premolar (mean value 13.64) and microdontia in 3 cases (total average 5.83) were observed in our patient samples (Figure 2). The upper molar teeth (mean value 10.32) was frequently

affected. A higher affinity (mean value of 62.11) was found in males than females (mean 37.34) and maxillary dentists were more affected than mandibular dentists (mean 18.20) (mean 81.67). Macrodont teeth were found to be between fused teeth and dental anomalies (total average value 2.6)

(Figure 2). The upper permanent lateral incisors showed the highest prevalence (mean 63.22 value), followed by low permanent lateral incisors (mean value 20.45) and second mandibular premolar (mean value 16.44). In addition, male subjects showed a larger mean macrodontic value of 62.45 compared to female subjects (mean value 34.62).

According to the anomalies of the form (Figure 2), the total average value of taurodontism was 7.24,

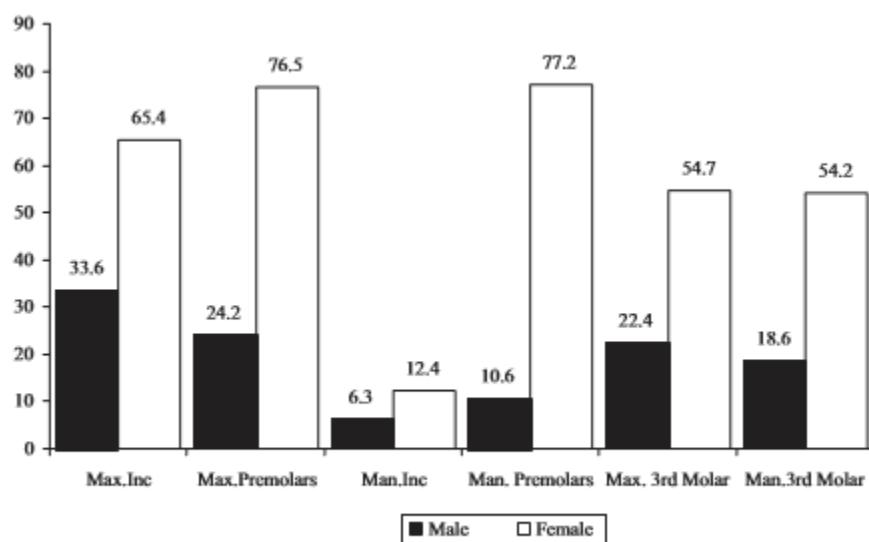
followed by the highest prevalence of dens evaginatus (total mean value 2.90) and dens-in-dente. (total average value 1.61). In males, while greater affinity for taurodontism (mean value 54.3) was observed (Figure 4), women showed a greater prevalence of dens evaginatus (mean value 57.3) and dens-indente (mean value 69.77) than subjects.



**Fig. 4: Mean Prevalence Values of Dental Anomalies in Males/Females**

In addition, anomalies affect the taurodontism (mean value 88.65), which affects the most frequent first and second persistent molars (mean value 88.65), compared to mandibular dentists (mean value 8.3.),

Compared to mandibular dentistry (mean value 8.31), the most common upper permanent incisors and premolar (average value 98.4).



**Fig. 5: Mean Prevalence Values of Hypodontia in Males/Females**

The teeth most affected by *dens evaginatus* were permanent upper lateral incisor teeth and upper 2nd premolar (mean value 92.78). Abnormalities in the enamel and dentin structure include the presence of *amelogenesis imperfecta* in our patient sample (Figure 2) regarding the defective enamel (total value of 4.66). According to the distribution by sex (Figure 4), a higher incidence of defective enamel in females than in male subjects (mean value 78.54) (mean value 22.3). In our patient group, no sex abnormalities were observed.

### DISCUSSION:

Previous studies investigating dental anomalies found a prevalence of 15-20% among patient samples. In our study, 22.8% of the patients examined clinically and radiographically showed dental anomalies affecting the number, size, shape and defect of the enamel [5]. In addition, Thongudomporn and Freer observed major anomalies in maxillary teeth compared to mandibular teeth. Our patient sample showed more anomalies in maxillary teeth than mandibular teeth (Figure 1).

The gender distribution of our patient sample was higher than that of males according to dental anomalies (total average value 78.3), compared to females (total average value 23.7).

In this study, we classified the upper cavity according to the regional distribution in the oral cavity. Mesiodens, paramolar, distomolar and odontomas<sup>6</sup>. The mean value obtained from Maxilla 74.33 showed a greater higher level of tendency compared to mandibular teeth (mean value 25.71). According to the distribution by sex (Figure 3), males showed greater affinity for the mesiodens (mean value 87.6) and subsequent distortions (mean value 68.4), while females showed a greater prevalence of paramoles (mean value 84.7). andodontomas (mean value 67.4). Tyrologou et al conducted more extreme abnormalities in female subjects compared to male subjects [7-9]. Our study was consistent with recent studies by Goursand et al., And found that 80% of dental anomalies were concentrated in the anterior segment. Primosch found a supernumerary prevalence of 90-98% in maxilla, affecting men twice compared to women. As mentioned before, our patients there is no systemic disorder and syndrome. However, many researchers associate hyperdroid with the cleft lip and palate and with syndromes such as cleft dysplasia, Gardner syndrome, and digital orofacial syndrome.

In this study, hypodontics or lost teeth represented the most common dental anomaly with an average prevalence of 57.8 in our patient sample (Figure 2). Maklin and others previously reported a frequency of up to 10%, with the exception of the third few [10].

According to Grahanen and Granath, there is a 30% relationship between the primary absence of teeth and the absence of continuous tooth [11]. Our findings also coincided with the latest evidence of Worsaae N and colleagues and Albasireh, who reported that hypodontics were the most common anomaly [12]. A previous study by Keeler and Wright JT et al. Correlated Taurodontism with Klinefelter's syndrome and tricot-dento-osseous syndromes. In addition, a number of studies have been conducted in recent years about the presence of taurodont teeth in the posterior mandibular segment and the presence of intrauterine densus affecting maximum tooth [13]. However, in our study, the teeth most affected by *dens evaginatus* were upper permanent lateral incisors and upper 2nd premolar (mean value 92.78). Our findings were consistent with Sobhi and Rana, who reported *dens evaginatus* in 2.4% of the permanent anterior maxillary teeth, especially in the lateral and central incisors. This anomaly was less common in the jaw [14]. Ponnambalam et al. Recently reported that the frequency of *dens evaginatus* is higher in males than females [15]. This out-of-school anomaly caused by elevation of the inner enamel epithelial cells influences the flange of the central sulcus or the posterior teeth and the cingulum area of the anterior incisor teeth. Exposure to dough can be caused by radical equilibrium, so extreme crumbs should be ground.

### CONCLUSION:

Hypodontia and hyperdontia were common in our patients. These anomalies require a detailed understanding and treatment planning. A multidisciplinary approach consisting of orthodontics, restorative dentistry, periodontology and oral surgery is needed to restore the aesthetics and function of dentistry. Our study mainly focused on the number, size and shape of dental anomalies. However, further studies on dentine, cementum and tooth color anomalies in large sample size should be performed in future studies.

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