

Prevalence of Dental Anomalies among Iraqi Dental Students

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ABSTRACT

Background: Dental anomalies are abnormal tooth condition occurs due to certain genes or environmental factor disturb tooth development during morphodifferentiation stages, affecting group of teeth or entire dentition. The aim of the study is to evaluate the frequency of occurrence of dental anomalies among dental student.

Materials and Methods: Three hundred dental students with age ranged (18-23 years) were examined clinically and radiographically searching for dental anomalies in shape, number and position.

Results: Only 25 students (8.3 %) from the total sample (300) had dental anomalies, female form the higher percentage of anomalies (about 68%) compared to male (32%). The age group (22 years) which was the larger group had a higher percentage of dental anomalies (about 40%). Regarding the type of anomalies found, disturbance in number of teeth represent the higher percentage (48%); but impacted third molar represent the most common subtype of positional anomalies found in the study (20%).

Conclusion: Higher percentage of dental anomalies detected in female and larger age group, study of dental anomalies was of great importance especially prior to orthodontic and surgical intervention.

Key words: Dental anomalies, types, prevalence, radiography. (J Bagh Coll Dentistry 2016; 28(4):72-76)

INTRODUCTION

Dental anomalies are wide range of abnormalities or changes in tooth structure, size, shape, number and eruption pattern in the jaws ⁽¹⁾, they affect both deciduous and permanent dentition ⁽²⁾. Genetic and environmental factors happened during different gestational stages were responsible for many types of abnormalities in craniofacial and dentofacial structures ⁽³⁾, so dental anomalies can be classified according to its causative factor into; congenital, developmental and acquired ⁽⁴⁾, sometimes can be occur in association with systemic disorders or syndrome such as cleft lip and palate or down's syndrome ⁽⁵⁾. Dental anomalies classified into four types by Shokri et al. shape, number, position and structure. Shape anomalies such as taurodontism (developmental anomaly in which tooth trunk is long and large while the root is short and apically located bifurcation area, occur most frequently in molars) ⁽⁶⁾, dens invaginatus (anomaly resulting from invagination in the tooth surface appear as a reverse tear in the crown and sometimes in the root, lined by enamel and dentin) ⁽¹⁾, dens evaginatus (outward projection of focal area of crown as horn-like protuberance misdiagnosed as

extra cusp) ⁽⁷⁾, fusion and germination (fused tooth appear as large clinical crown with one or two pulp chamber and two root canals; while the geminated tooth appear as large clinical crown with two pulp chambers and only one pulp canal, both of them occur most frequently in anterior teeth) ⁽⁸⁾.

The second type of dental anomalies was anomalies in number represented by either increase in number of teeth (supernumerary), decrease in number (hypodontia when one to five teeth were missed, and oligodontia when six teeth or more were missed) or complete absence of teeth (anodontia) ⁽⁹⁾. Supernumerary teeth have different types, the most common type was conical tooth or mesiodens which appear as small peg shaped tooth between permanent incisors ⁽¹⁰⁾. Other types was tuberculate supernumerary which appear as barrel-shape with more than one cusp or tubercle located palatal to central incisors, and its responsible for their delayed eruption ⁽¹¹⁾.

Positional anomalies included impaction, ectopic eruption and tooth transposition. Impaction is the most common one and it's responsible for the most of malocclusion cases and orthodontic patients ⁽¹²⁾. The most frequently impacted teeth are third molars and maxillary canine (tooth considered to be impacted when it's not erupted within a specific period of time and prevented by adjacent teeth, bone, soft tissue and other conditions) ⁽¹³⁾.

Structural anomalies such as dentinogenesis imperfecta (autosomal dominant inherited localized mesodermal dysplasia affect both dentitions, clinically the tooth color various from

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brown to blue and radiographically the tooth had bulbous crown with short root resembling shell teeth⁽¹⁴⁾. Other type of structural anomalies was amelogenesis imperfecta (genetically heterogeneous condition that affect both quality and quantity of enamel structure)⁽¹⁵⁾.

The aim of this study was to evaluate the frequency of occurrence of dental anomalies among dental student.

SUBJECTS AND METHODS

The sample of this study was dental students in College of Dentistry/ Baghdad University. Three hundred students with age ranged from 18-23 years were examined clinically and radiographically from November 2014 to March 2015 searching for certain types of dental anomalies.

After obtaining informed consent for their agreement to participate in the study, periapical, occlusal or panoramic radiograph had been taken according to the case examined. The data were collected and statistically analyzed.

RESULTS

In this study 300 dental students were examined, 25 students had dental anomalies, 17 of them were females (68 %) and 8 were males (32%) with age ranged between 18-23 years and the dental anomalies were widely distributed in students with age 22 year (40 %), then (20%) in 18 year, (16%) was found in 21 and 20 years old, and (12%) in 19 years old as shown in table 1.

Table 1: Distribution of study sample according to age

Age group (Years)	No.	Percentage
22	10	40
21	4	16
20	4	16
19	3	12
18	5	20
Total	25	100

The study groups were divided into three groups according to type of dental anomalies found, number anomalies 48% (found in 12 students of 25), shape anomalies 28% (found in 7

students of 25) and positional anomalies 24% (found in 6 students of 25) as shown in figure (1). The prevalence of various dental anomalies observed with their percentage in relation to gender was recorded in table 2, and demonstrating that the percentage was higher in females.

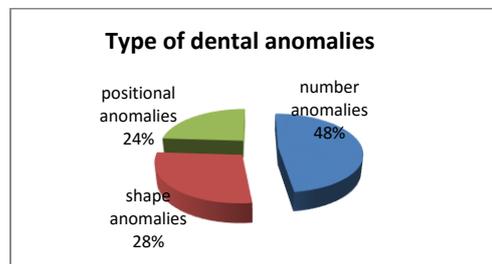


Fig. 1: Type of dental anomalies found.

Table 2: Frequency of occurrence of dental anomalies in relation to gender

Types	Male		Female		Total		P-value
	N	%	N	%	N	%	
Number anomalies	3	12	9	36	12	48	P<0.05
Shape anomalies	2	8	5	20	7	28	
Positional anomalies	3	12	3	12	6	24	
Total	8	32	17	68	25	100	

Regarding positional anomalies, impacted third molar represent the most frequently observed cases (5 of total 6), while impacted canine found only in one student (as shown in table 3, fig. 2 and 3).

Regarding number of teeth anomalies, the most frequent cases were congenitally missing lower second premolar (4 cases of total 12 case of number anomalies), followed by supernumerary and mesiodens (3 cases), and congenitally missing lateral incisors (2 cases for upper and 2 cases for lower). The least one was congenitally missing upper second premolar (1 case only) as shown in fig. 4, 5 and 6.

Regarding shape anomalies, the most frequent cases observed were peg shape lateral incisors (4 cases of total 7) as shown in fig 7, followed by dens evaginatus (2 cases) and finally one case of taurodontism.

Table 3: Frequency of occurrence of various dental anomalies

Type of dental anomalies		N	%	P-value
Number anomalies	Congenital missing lower second premolar	4	16	P> 0.05
	Congenital missing upper second premolar	1	4	
	Congenital missing lower lateral incisor	2	8	
	Congenital missing upper lateral incisor	2	8	
	Mesiodens and supernumerary tooth	3	12	
Total		12	48	
Shape anomalies	Peg shape lateral incisor	4	16	P> 0.05
	Dens evaginatus	2	8	
	taurodontism	1	4	
	Total	7	28	
Positional anomalies	Impacted third molar	5	20	P> 0.05
	Impacted canine	1	4	
	Total	6	24	

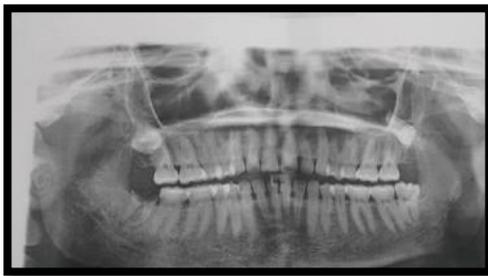


Figure 2: Impacted upper third molar in panoramic radiograph



Figure 3: Impacted upper canine in panoramic radiograph



Figure 4: Congenital missing lower second premolar in panoramic radiograph



Figure 5: Congenital missing lower lateral incisor.



Figure 6: Supernumerary tooth in lower anterior region.



Figure 7: Peg shaped lateral incisor.

DISCUSSION

The present study was conducted on 300 dental students searching for dental anomalies. The results shows that 25 student had dental anomalies of different types. The results of this study showed that female had higher percentage (68%) of dental anomalies compared to male (32%), this is agreed with Guttal et al. (2), Afify and Zawawi (12), and Nemati et al. (16) and disagreed with Sener et al. (17) and Atoche et al. (18), who showed no relation between dental anomalies and gender, also Vani et al. (19), who found equal distribution of dental anomalies among gender.

In the current study, number anomalies represent the highest percentage of dental anomalies (48%), while Garrib et al. (20) found that structural anomalies represent the highest percent among other dental anomalies, and Gupta et al. (21) reported that rotation was the most common dental anomalies followed by ectopic eruption, and the least one was number anomalies, this differences may be due to not including of structural anomalies, rotation and ectopic eruption in the current study in addition to different racial groups.

The most common dental anomalies found in this study was number anomalies (48%), followed by shape anomalies (28%), while Shetty et al. (22) found that shape anomalies was most prevalent than other anomalies followed by number anomalies. This difference may be due to different sample size and types of anomalies found.

Regarding positional anomalies, the current study showed that most prevalent positional anomalies was impaction, 20% for impacted third molar followed by impaction of canine 4%, this result agreed with Ackam et al. (3) who reported a percentage of 3% for impacted canine, also the results confirmed by Afify and Zawawi (12) who reported a percentage of 21.1 % for impaction, also the results agreed with Kathariya et al. (23) and Haugland et al. (24)

The results of this study were agreed with Shokri et al. (6) reported that positional and number dental anomalies were the most prevalent, impaction and hypodontia were the most common subtypes of dental anomalies, in this study number anomalies was the most prevalent with most common subtypes of congenital missing lower second premolar, followed by positional anomalies with high percentage of impacted third molar (20%).

Regarding shape anomalies, the results showed a high percentage of peg shaped lateral incisors about 16%, followed by dens evaginatus 8%, and 4% taurodontism. This was confirmed by the

results of Shetty et al. (22) who reported that anterior area of maxilla especially lateral incisors had a high incidence of dental anomalies. On other hand, the results were not in conformity with those reported by Darwazeh et al. (5) and Ackam et al. (3). The differences may be due to difference sample type (cleft patients), sample size and races.

In conclusions;

1. Female had higher percentage of dental anomalies compared to male.
2. Dental anomalies become more recognizable with increased age.
3. Number anomalies represent the highest percentage compared to positional and shape anomalies.

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