

# Frequency of Developmental Dental Anomalies in Patients Presented with Dilacerated Teeth

NUSRAT JABEEN<sup>1</sup>, MUSARRAT RAUF<sup>2</sup>, MUSSARAT HUSSAIN<sup>3</sup>, HUMA SARWAR<sup>4</sup>, MESHAL MUHAMMAD NAEEM<sup>5</sup>, MUHAMAMD MANSOOR MAJEED

<sup>1</sup>Associate Professor, Department of Oral Biology Shifa College of Dentistry, Islamabad

<sup>2</sup>Assistant Professor, Community Dentistry, Ayub Medical College Abbottabad

<sup>3</sup>Demonstrator Periodontology (Dentistry) Bacha Khan Dental College, Mardan

<sup>4</sup>Operative Dentistry Lecturer Dept of Operative Dentistry Dr Ishrat-ul-Ebad Khan Institute of Oral Health Sciences Karachi (DIKIOHS-DUHS)

<sup>5</sup>Resident Lecturer Dept of Periodontology Dr Ishrat ul Ebad Khan Institute of Oral Health Sciences Karachi (DIKIOHS-DUHS)

<sup>6</sup>Assistant Professor, Department of Oral Biology, Altamash Institute of Dental Medicine Karachi

Correspondence to: Dr Nusrat Jabeen, Email; aqua\_19feb@hotmail.co.uk. Cell 0332-3062334

## ABSTRACT

**Objective:** To examine the frequency of dental developmental alterations in patients presented with dilacerated teeth.

**Study Design:** Cross-sectional/ Observational study

**Place & Duration of Study:** Watim Dental College Rawalpindi from 1<sup>st</sup> March 2017 to 31<sup>st</sup> March 2019.

**Methods:** Total 27 patients of both gender presented with dilacerated teeth were enrolled. Patient's ages were ranging from 10 to 65 years. Patient's demographical details were recorded after taking informed consent from all the patients and parents/guardians. Panoramic radiographical examination was done to examine the frequency of dental anomalies.

**Results:** 18 (66.67%) were females. Mean age of patients was 32.46±14.85 years. Majority of patients were females. Dental anomalies was found in 16 (59.26%) patients with 26 teeth. Hypodontia was the most common dental developmental alterations found in 6 (37.5%) patients followed by enamel pearls in 4 (25%) patients and taurodontism in 2 (12.5%) patients.

**Conclusion:** Frequency of developmental dental anomalies was high in patients with dilacerated teeth. Hypodontia were the most frequent DAs and majority of teeth were located in maxilla.

**Keywords:** Dilacerated Teeth, Developmental Anomalies, Pattern

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## INTRODUCTION

An abnormality of the dental system is characterised as an abnormality in the shape, function or location of a tooth or tooth deviating from normal. Any alteration in the number, type and size of the tooth may affect the jaw and arch and occlusion, which may complicate care planning.<sup>1</sup> Multiple abnormalities in individuals or teeth may be genetically influenced and correlated with particular syndromes. But most abnormalities occur sporadically, and some of them include shape and scale, which may be influenced by environmental factors during the dental formation process of morphodifferentiation.<sup>2</sup> There are thousands of anomalies, but some of them are more prominent than others.<sup>3</sup>

Hypodontia is a developmental absence of under six teeth, oligodontia is the developmental absence of six or more teeth and anodontia signifies a developmental absence of all teeth.<sup>4</sup> Agenesis or lack of teeth is frequently found and three words used in their classification. In terms of aetiology, genetic and environmental factors are a multifactorial disease. The value of different mutations has been determined in two transcription factors, namely, in recent advances in molecular genetics. Dental development of MSX1 and PAX9.<sup>4</sup> Family tooth agenesis follows a dominant autosomal pattern.<sup>5</sup> The third molars followed by the second mandible premolars and lateral maxillary incisors<sup>6</sup> are the most often absent teeth. The shortage of teeth can be a problem for orthodontics and restaurants alike. Another common dental abnormality is supernumerary teeth. These are the extra teeth that may

occur besides the usual sequence and emerge because of a toothpaste dichotomy; however, localised individual dental lamellar hyperactivity is the most appropriate cause.<sup>7</sup> It can happen in any region with premaxillas and mesiodens in the maxillary middle line being the most common. The form and location of the supernumerary tooth and its effect on the adjoining teeth are all dependent on care.<sup>8</sup>

The apical extension of the pulp chamber below the cement-enamel junction leading to a proportionately shortened root and longer crown and to a more apical root bifurcation<sup>1</sup> is known as taurodontism, also called bull-like teeth. Taurodontism primarily affects molars. Dilaceration is a sharp bending or angulation of the tooth's crown or root portion. Trauma to their first ancestors generally occurs secondary during tooth development, but it may also be idiopathic. Root dilacerations are more common than crown dilacerations. These irregularities can be found in panoramic X-rays, one of the widely requested X-rays.<sup>9,10</sup>

We conducted present study with aimed to examine the frequency of developmental dental anomalies in patients presented with dilacerated teeth.

## MATERIALS AND METHODS

This cross-sectional study was conducted at Watim Dental College Rawalpindi from March 2017 to March 2019. In this study total 27 patients of both gender presented with dilacerated teeth were enrolled. Patient's ages were ranging from 10 to 65 years. Patient's demographical

details and complete radiographical examination was done after taking informed consent from all the patient. Patients with oral cancer, patients with third molar DA and those who were not interested to participate were excluded from this study. Panoramic radiographical examination was done to examine the frequency of dental anomalies. After complete screening, location of teeth, involve teeth and associated dental anomalies were analyzed. All the data was analyzed by SPSS 24.

**RESULTS**

Among 27 patients majority 18 (66.67%) were females. Mean age of patients was 32.46±14.85 years. Majority of patients were females (Table 1). From 27 dilacerated teeth patients 16 (59.26%) patients had dental developmental alterations (Fig. 1). From these patients we found 26 teeth involvement with DDAs. Hypodontia were the most frequent DDA found in 6 (37.5%) patients with 10 involved teeth, enamel pearl were found in 4 (25%) patients with 5 teeth, taurodontism found in 2 (12.5%) patients with 4 teeth involvement, microdontia found in 2 (12.5%) patients with 4 teeth, supernumeraries found in 1 (6.25%) patient with 1 tooth, short root found in 1 (6.25%) patient with 2 teeth involvement (Table 2). According to the location of DDAs 19 (70.37%) teeth were maxilla and 8 (29.63%) were mandible (Table 3)

Table 1: Baseline characteristics of Dilacerated teeth patients

Characteristics	No.	%
Gender		
Male	9	33.33
Female	18	66.67
Age (years)	32.46±14.85	

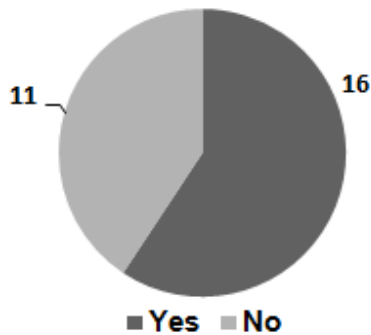


Fig. 1: Frequency of DA among dilacerated teeth

Table 2: Pattern of dental anomalies

Variable	Patients (n=16)	Teeth involve (n=26)
Hypodontia	6	10
Enamel Pearl	4	5
Taurodontism	2	4
Microdontia	2	4
Supernumeraries	1	1
Short root	1	2

Table 4: Location of DA among dilacerated teeth (n=27)

Location	No.	%
Maxilla	19	70.37
Mandible	8	29.63

**DISCUSSION**

Present study was conducted to analyze the frequency and pattern of dental developmental alterations in patients with tooth dilacerations. In this analysis we reviewed 800 data of patients who were visited at our institution for the stomatological treatment were analyzed. We found 27 (3.38%) patients with 38 dilacerated teeth. Out of 27 patients 18 (66.67%) were females while 9 (33.33%) patients were males with. These results were comparable to some previous studies in which females were high in number with dilacerated teeth and accounted above 60% and majority of patients were ages above 25 years.<sup>11,12</sup>

In present study after complete screening we found 16 (59.26%) patients had dental developmental alterations. A study conducted by Zakaria et al<sup>13</sup> regarding prevalence of dental anomalies in patients visited dental hospital, in their study they reported that DDAs was found in 14.7% patients out of 400 patients. Another study by Goncalves. Filho et al<sup>14</sup> reported that dental anomalies was present in 56.9% patients.

In this study, Hypodontia was the most common dental developmental alterations found in 6 (37.5%) patients followed by enamel pearls in 4 (25%) patients, taurodontism in 2 (12.5%) patients, taurodontism found in 2 (12.5%) patients, microdontia found in 2 (12.5%) patients, supernumeraries found in 1 (6.25%) patient and short root found in 1 (6.25%) patient respectively. Goncalves. Filho et al<sup>14</sup> reported that the most prevalent DA was taurodontism, which was present in 27.19% of cases. Root dilaceration was the second most prevalent DA in adults, whereas hypodontia was the second most prevalent DA in children. Constantino Ledesma-Montes et al<sup>15</sup> reported similarity to our findings in which hypodontia was the most common DDAs followed by enamel pearl and taurodontism.

According to the location of DDAs 19 (70.37%) teeth were maxilla and 8 (29.63%) were mandible. Studies demonstrated that majority of teeth with DDAs were located in maxilla.<sup>16,17</sup>

**CONCLUSION**

The frequency of developmental dental anomalies was high in patients with dilacerated teeth. Hypodontia were the most frequent DAs and majority of teeth were located in maxilla.

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