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Role Of Life Events And Personality In Alcohol Dependent Individuals – A Study

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Abstract:

Introduction: *Over 2 billion people worldwide, and 14.6% of India's population consumes alcohol, 18.5% of whom are dependent. 95% of alcohol users are males, with 74% falling in the age bracket of 18-49 years. Stressful life events and personality may act as important determinants in persistence of alcohol use, hence influencing long term treatment of alcohol dependent individuals. This study focuses on these aspects to fill in the dearth of research on this concept over the past decade.*

Methodology: *A case control study was done at a tertiary care hospital with 80 literate male participants; 40 cases meeting the criteria for alcohol dependence as per ICD 10, and 40 age matched controls with no history of alcohol consumption. Participants were screened with General Health Questionnaire-12 to exclude other illnesses. All participants were administered sociodemographic proformas, Presumptive Stressful Life Events Scale, Eysenck Personality Questionnaire - Revised.*

Results: *Sociodemographic profiles of cases and controls were similar. Mean number of life events and undesirable life events were higher among cases, and mean number of desirable life events were higher among controls. Cases displayed higher scores in the domains of psychoticism, neuroticism and extraversion.*

Conclusion: *Alcohol dependent individuals differ significantly from life time abstinent individuals on personality variables and had experienced more subjective distress. A holistic approach addressing coping strategies, personality development, and education about substance use among adolescents would aid in individual and social well being.*

Key words: *Alcohol Dependence, Life events, Personality.*

1. Introduction

Drinking alcohol is an acceptable social norm utilised by over 2 billion people world-wide. 5.3% of all deaths in a year result from harmful use of alcohol, and 13.5% in the age group 20-39 years are attributable to alcohol. [1] Nationally, about 14.6% of the population consumes alcohol and 18.5% of current users consume alcohol in a dependent pattern. An overwhelming majority of alcohol users are males and fall in the age bracket of 18-49 years.[2]

The aetiology of alcohol use disorders is multifactorial, involving interactions between genetic, environmental, interpersonal and individual factors. Among them, stressful life events is a major factor enabling the persistence of alcohol use and interfering with long term treatment of alcohol dependent individuals.[3] One specific aspect of responsiveness to treatment that requires emphasis is an individual's sense of self esteem and self efficacy – the recognition that, to an important extent, one is in control of one's destiny and can deal with the life changes encountered.[4] This leads to the need to study personality along with life events for better understanding of aetiology, onset, course and treatment outcome.

"Personality" can be defined as a dynamic and organised set of characteristics possessed by a person that uniquely influences their cognitions, motivations and behaviour in various situations.[5] It has been noted from a clinical perspective that alcohol dependent individuals seem to carry a reliable constellation of personality traits. [6, 7] It appeared that those who abused alcohol along with

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other drugs were younger, more impulsive, disinhibited and extroverted which had implications in treatment.[8] In this dynamic era, with increased substance use, there is hardly any research on the effect of personality and life stressors in recent decades.

Much research has emerged, especially in recent years, on the effect of life events on personality. Few studies show correlation between neuroticism with negative life events whereas others showed neuroticism to be linked to particular life events only [9, 10] Observations from a review article have shown changes in personality with a change in social role demand, but these findings were not consistent. [11]

This study is expected to give an overview about the role of life events and personality in alcohol dependent individuals. This can be helpful to mental health professionals and organisations in designing a treatment procedure – pharmacological and behavioural – for alcohol dependent individuals.

Aims and Objectives: The aim of the current study was to obtain the impact of life events on patterns of alcoholism, determine personality traits among alcohol dependent individuals, and compare these to life time abstinent controls.

Materials and Methods: A case control study was done at Prathima Institute of Medical Sciences from January 2013 to May 2014. The research had ethical clearance reference number of IEC/PIMS/2012/07. 40 participants in each group were recruited from the outpatient Department of Psychiatry. Every 5th male patient, aged 20-60 years, diagnosed as alcohol dependent as per ICD 10, was recruited as case. Individuals with history of other psychiatric disorders, chronic physical and systemic illnesses, and history of abuse of other substances except nicotine were excluded from the study. Age matched controls with no history of alcohol consumption were selected by purposive sampling over a period of one year from caregivers of patients availing services from the psychiatric OPD. Individuals with chronic physical illnesses, and primary mental illnesses (as screened by General Health Questionnaire) were excluded from the study. Written consent was obtained from all participants.

2. Methodolgy

All participants were administered

1) Semi structured proformas: These included age, education, income, marital status, and type of family. Details regarding duration and frequency of alcohol consumption, place of drinking, whether alcohol was consumed in solitude or in company.
2) Presumptive Stressful Life Events Scale (PSLES): The PSLES is a modified Indian version of Holmes and Rahe's Social Readjustment Rating Schedule, and includes 51 items. The scale standardises the life events for two time spaces: last one year and lifetime, and is further divided into desirable and undesirable categories. Total number of life events experienced as well as the presumptive stress score for each event is calculated, hundred being the highest score, and zero the lowest. The reliability of this scale is 0.87.[12]
3) Eysenck Personality Questionnaire - Revised (EPQ-R): The EPQ-R is a 90 item questionnaire designed by H.J Eysenck to measure personality traits into 4 scales, P – Psychoticism or Tough-Mindedness, E – Extraversion, N – Neuroticism or Emotionality, and L – Lie. Those scoring high on the N scale are characterised by instability, nervousness and general anxiety; those scoring high on the E scale by extraversion, good mixer, sociability, impulsiveness, a tendency to become aggressive; P scale is generally considered a measurement of hostility; L scale is constructed from items listing issues and behaviours which are either socially desirable but infrequently practised, or frequently practised but socially undesirable. Reliability ranges are 0.83 to 0.90; validity of the test is satisfactory.[13]
4) General Health Questionnaire-12(GHQ-12) is a self administered screening questionnaire by Goldberg and Hillier, 1979. It consists of 12 items assessing the severity of a mental problem over the past few weeks using a 4-point Likert-type scale. The positive items are scored from 0 (always) to 3 (never) and the negative ones from 3 (always) to 0 (never), with a total score ranging from 0 to 36. High scores indicate worse health.[14]

3. Results

Among the cases, the most were among the productive age groups of 21-30 years and 31-40 years, few in the age group of 41-50 years and the remaining were over 50 years of age. Age matched controls were recruited for the study. 26 participants were graduates, followed by higher secondary and high school educated individuals. 31 participants were skilled workers, followed by professionals. (Table 1)

Table 1: Socio-demographic Data

Alcohol Dependents n (%)		Case/Controls		Total N (%)
		Controls n (%)		
Age	≤20 years	1 (1.2)	1 (1.2)	2 (2.5)
	21-30 years	12 (15)	12 (15)	24 (30.0)
	31-40 years	12 (15)	12 (15)	24 (30.0)
	41-50 years	8 (10)	8 (10)	16 (20.0)
	>50 years	7 (8.8)	7 (8.8)	14 (17.5)
Education	Middle School	0 (0.0)	1 (1.2)	1 (1.2)
	High School	7 (8.8)	12 (15.0)	19 (23.8)
	Higher Secondary	10 (12.5)	13 (16.2)	23 (28.8)
	Graduate	18 (22.5)	8 (10.0)	26 (32.5)
	Professional	5 (6.2)	6 (7.5)	11 (13.8)
Occupation	Unskilled	0 (0.0)	1 (1.2)	1 (1.2)
	Skilled	16 (20.0)	15 (18.8)	31 (38.8)
	Clerk/Shop Owner/ Farmer	8 (10.0)	7 (8.8)	15 (18.8)
	Semiprofessional	3 (3.8)	11 (13.8)	14 (17.5)
	Professional	13 (16.2)	6 (7.5)	19 (23.8)

64 of the participants belonged to the lower middle and upper middle classes. 34 of the cases and 31 of the controls were married. There was an almost equal proportion of participants from rural, semi-urban and urban areas among the alcohol dependent individuals. 26 and 14 of the alcohol dependent individuals belonged to nuclear and joint families, respectively. There were no statistically significant differences between the alcohol dependent individuals and the controls with respect to socio demographic data.

Many participants started consumption of alcohol between 11-20 years and very few after 30 years. Participants consumed 0-3 units of alcohol on an average, per session, whereas a quarter consumed 4-12 units. The majority consumed throughout the week. 21 participants attempted to quit alcohol consumption, while 19 never attempted to quit alcohol. 21 preferred consuming alcohol alone. 6 drank both socially and when alone (Table 2).

Table 2 Patterns of Alcohol Consumption

		Frequency	Percent
Age at First Drink	11-20 years	26	65.0
	21-30 years	11	27.5
	31-40 years	1	2.5
	41-50 years	2	5.0
Duration of Drinking	1-10 years	19	47.5
	11-20 years	14	35.0
	21-30 years	6	15.0
	31-40 years	1	2.5
Amount of Alcohol Consumption (in Units)	0-3	30	75.0
	4-12	10	25.0
Frequency of Days in a Week	3 days	2	5.0
	4 days	1	2.5
	7 days	37	92.5

The mean number of overall life events and overall undesirable life events were higher among alcohol dependent individuals when compared to controls, while mean number of desirable life events were higher among controls. The mean number of life events in the past one year and undesirable life events in the past one year were higher among alcohol dependent individuals when compared to controls, while mean number of desirable life events in the past one year were higher among controls (Table 3).

Table 3: Life Events Among the Respondents

Life Events	Alcohol Dependent		Controls		T test value	P Value
	Mean	Std. deviation	Mean	Std. deviation		
Total (overall)	5.75	1.945	4.50	1.695	3.06	0.003
Desirable (overall)	2.43	1.238	3.45	1.154	3.831	<0.001
Undesirable (overall)	3.32	1.163	1.05	0.932	9.652	<0.001
Total (past one year)	2.18	1.430	1.23	1.209	3.201	0.002
Desirable (past one year)	0.30	0.608	0.85	0.921	3.152	0.002
Undesirable (past one year)	1.87	1.181	0.38	0.628	7.094	<0.001

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The mean scores on the traits of psychoticism, neuroticism and extraversion were higher among the alcohol dependents (Table 4).

Table 4: Eysenck Personality Scores among the Respondents

Domain	Alcohol Dependent		Controls		Total		T test value	P Value
	Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation		
Psychoticism	7.25	4.018	5.08	3.285	6.16	3.807	2.651	0.01
Neuroticism	10.75	4.005	7.07	5.586	8.91	5.171	3.382	0.001
Extraversion	14.35	3.711	9.13	5.858	11.74	5.536	4.765	0.001
Lie Score	7.83	1.599	7.48	1.377	7.65	1.493	1.049	0.298

Psychoticism and life events were negatively correlated but statistically not significant, but with presumptive stress it is positively correlated and also statistically significant. Neuroticism and life events were negatively correlated and statistically highly significant, whereas neuroticism and presumptive stress were negatively correlated but not statistically significant. Extroversion and life events are negatively correlated and statistically highly significant, whereas extroversion and presumptive stress were negatively correlated but not statistically correlated. (Table 5)

Table 5: Correlation between Personality with Total Life Events and Presumptive Stress

Correlation	Life Events	Stress
Psychoticism	-0.106	.225*
Neuroticism	-.410**	-0.128
Extroversion	-.369**	0.162

**** Correlation is significant at the 0.01 level (2-tailed).**

***** Correlation is significant at the 0.05 level (2-tailed).**

4. Discussion

Most of the alcohol dependent individuals were among the productive age group of 21- 40 years. According to the NFHS 5, alcohol use is most common among men in the age group of 35-49 years old.[15] Reddy et al.'s research on demographic factors associated with alcohol dependence showed that the mean age of patients was 37.2 years.[16]

Most participants in this study were found to be graduates, followed by higher secondary school and high school educated individuals. Similar reports were shown in a hospital based study done in Bangalore, and a community based cross sectional study done in an urban slum in North India, where the majority of the patients were high school educated.[17, 18] In this study, most participants were skilled workers followed by professionals. However, the sample was representative of individuals from all types of occupational groups. In Gupta et al.'s study, there was an almost equal number of skilled and unskilled workers.[18] This difference is most likely because Gupta's study was a community based study while this was hospital based where people sought healthcare.

The majority of the participants belonged to the middle classes. Similar to other studies, this study also had a majority of married participants with nuclear families.[16, 17] In this study, there was equal representation from rural and urban areas, while Reddy et al. showed that the majority was from rural backgrounds; this difference is likely a result of different catchment areas.[16]

Many participants started consumption of alcohol between 11-20 years. Similar findings were obtained in a study done in Khammam.[19] Soundararajan's study showed that people with early age at first drink had longer alcohol use duration and also presented earlier to treatment.[17] Hence, intervention measures to prevent alcohol abuse should be initiated at an early age.

Most participants consumed 0-3 units of alcohol on an average, per session, whereas a quarter consumed 4-12 units. The majority consumed throughout the week. Most participants made at least one attempt to quit alcohol consumption. In Gupta et al.'s study, the median amount of alcohol consumption on a typical drinking day was 10 units.[18] Another study found that initiating alcohol use at an early age leads to chronic heavy drinking patterns in adult life[17].

Most participants consumed alcohol at home, eliciting a pattern of solitary drinking more than social drinking. Location of alcohol consumption depends on individual preferences, and solitary drinking may be associated with certain personality types. Gupta et al. found in their study that 58.7% participants consumed alcohol at

home and 30.7% preferred drinking in lonely places.[18] The mean number of life events, overall and in the past one year, was higher among alcohol dependent individuals. In a study conducted among adolescents, association was seen between life events and alcohol use. Results indicated that school-related stress may lead to substance use and mental health problems among adolescents.[20] Jennison et al. found that the total number of life events was associated with heavy drinking. [21] Dawson et al. showed that six or more stressful events were associated with increased quantity and frequency of heavy drinking.[22] Overall, stressful life-events were positively associated with frequency of heavy drinking, and negatively associated with frequency of moderate drinking.

The mean number of undesirable life events, overall and over the past one year, was also higher among alcohol dependent individuals. Hospitalisation, chronic diseases, were also found to influence alcohol consumption patterns. A 6 year longitudinal study showed that hospitalisation and onset of chronic conditions lead to decreased drinking, and widowhood was associated with increased drinking although only for a short time. [23] A study from France showed that heavy alcohol consumption increased in the years surrounding the death of a loved one, retirement, important purchases, and decreased after the experienced event. At the time of the event, excessive alcohol use decreased for all events, except for children leaving home and retirement, when it increased.[24] Glass et al. showed that life-events like hospitalisation were associated with decrease in alcohol use. In heavy drinking men, loss of a friend, sickness/injury of a relative showed a lesser decline in alcohol use.[25] Jennison et al. showed that divorce, lost employment of relatives, relatives hospitalised/disabled were associated with excessive drinking.[21] The impact of negative life events and alcohol use has been validated in all the above studies.

The mean number of desirable life events, overall and in the past one year, was higher among controls. A study conducted in France showed increased alcohol consumption after desirable life events except for marriage which showed a decrease followed by increase in the later years.[24] Jennison et al. showed that supportive spouses, family, friends, reduced excessive drinking in response to life-events.[21] Zilberman et al., in a group of behavioural/substance addicted participants, found that individuals with addictions perceived their negative LEs to be more stressful than healthy controls, and the AUD group considered negative LEs to be more influential to their lives than the Compulsive Sexual Behaviour and Drug Use Disorder groups; only the control group felt that their positive LEs were more influential than negative LEs, pointing towards a resilience mechanism in healthy individuals which possibly allows them to give importance to positive LEs, thereby minimising stress. Lack of this ability in individuals with addiction disorders may lead to an urge to further engage in addictive behaviour.[26] Hence, the impact of negative life events on alcohol consumption may be offset by positive life events and social support.

The mean scores were higher among the alcohol dependents on the traits of psychoticism, neuroticism and extraversion. Behavioural interventions to reduce dependence on alcohol must be tailored with these personality differences in mind. Leslie et al.'s study among 16-18 year olds to know the impact of personality on attitude towards alcohol indicated that a more prospective attitude towards alcohol was significantly associated with tender mindedness rather than tough mindedness (psychoticism), introversion rather than extraversion, and neuroticism rather than stability. Attitude towards alcohol was shown to be unrelated to lie scale scores.[27] A case control study done in India using Eysenck's Personality Inventory replicated findings of this study.[28] A study by Kenneth et al. showed that in predicting alcohol use disorder, the effects of all three Eysenck's Personality (EPQ) scales remained significant, as did Tridimensional Personality Questionnaire-Novelty Seeking (TPQ-NS) indicating that EPQ-Psychoticism, EPQ-Neuroticism and TPQ-NS are all significant cross-sectional correlates of most Substance Use Disorders (SUD). [29] King et al. viewed that significant personality differences were found on the EPQ-Neuroticism scale, similar to the findings for anxiety. They also found that the Alcohol Dependent (ALC) group had significantly greater levels of neuroticism. The ALC group had lower scores on EPQ-Lie Score than Light Social Drinker; Problem drinker had intermediate score.[30] Dubey et al. showed that substance abuse group scored higher on Neuroticism and Extraversion, whereas non-substance abusers scored higher on Openness and Conscientiousness dimensions of Big-Five.[31] Chaudhry et al. administered alcohol dependent participants and matched controls with Maudsley Personality Inventory and found high levels of neuroticism and extraversion amongst the former.[32]

Murray et al. revealed that Eysenck's Extraversion appears to distinguish between those who engage in heavy episodic drinking and those who do not. Psychoticism characterises highest quartile of drinkers and heavy episodic drinkers, neuroticism characterises

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heavy episodic drinkers.[33] Soundararajan's study showed that extraversion was related to risk of relapse. [17] These various studies from numerous countries and various population sub-groups reiterate findings of this study and the association of Psychoticism, Neuroticism and Extraversion dimensions of personality with alcohol dependence.

Presumptive stress had a positive correlation with psychoticism. Neuroticism and extroversion were negatively correlated with life events. Evidence from a review article has observed a change in the personality trait more with specific life events like romantic relationships or transition phase, but still, the results were not conclusive [34]. Similar to the study at hand, few other studies show correlation between neuroticism with negative life events, [9] whereas others showed neuroticism to be linked to particular life events only [10]. Observations from a review article have shown changes in personality with a change in social role demand, but these findings were not consistent [11]

These study findings are not to be generalised as it is a hospital based study with small sample size and only males were included due to socio-cultural differences. Causal relationship could not be established as it is a cross sectional study.

5. Conclusion

Alcohol dependent individuals differ significantly from life time abstinent individuals on personality variables. The two groups differ significantly on the nature and extent of life events experienced. Alcohol dependent individuals have experienced more subjective distress than the life time abstinent subjects. Hence, a holistic approach addressing coping strategies, personality development, and education about substance use among adolescents would aid in individual and social well-being.

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Adhering to Basic Principles in a Rare Dental Condition: A Case Report of Severe Dilaceration

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Abstract:

Background: *Dilaceration is a rare dental condition that can occur during tooth development, resulting in distortion of the normal axial relationship between the crown and root. Although it can affect any tooth, it most commonly occurs in permanent incisors, often as a result of trauma to the primary predecessor. The impact of even a slight displacement of a primary incisor can be significant, disrupting the normal development of the follicles of new permanent teeth. Despite its rarity, dilaceration can pose significant challenges for dental professionals in terms of diagnosis and treatment. Case*

Description: *A case report of a 27-year-old female patient is presented, who attended with a missing maxillary left permanent central incisor and a hard palpable bulge in the maxillary vestibular area. Radiography revealed an impacted maxillary left central incisor, which was found to be dilacerated with a 120^0 angle. Consequently, surgical extraction of the impacted tooth was planned as orthodontic extrusion is not a viable option in such cases. The extracted tooth was found to have no signs of resorption, and healing was progressing satisfactorily.*

Conclusion: *Radiography is the most reliable method of detecting the condition. The report emphasizes the importance of detecting dilaceration early and adhering to basic principles for its diagnosis and management. Clinical Significance: The report provides valuable insights for dental professionals on the surgical management of severely dilacerated teeth and the need for a multidisciplinary approach due to the high risk of root fractures.*

Key words: *Dilaceration; Diagnosis; Impaction; Injury*

1. Introduction

Dilaceration is a complex and relatively uncommon condition that can occur during tooth development, leading to a distortion in the normal axial relationship between the crown and root. Although dilacerations can affect any tooth, they most commonly occur in permanent incisors, often as a result of trauma to the primary predecessor that is in close proximity to the developing permanent tooth germ. In rare cases, dilaceration may occur as a result of unknown developmental factors [1, 2].

The impact of even a slight displacement of a primary incisor can be significant, disrupting the normal development of the follicles of new permanent teeth. Dilacerations affecting the permanent dentition following trauma to the primary dentition are uncommon, but they can have significant consequences for affected individuals [3]. While dilaceration can occur in any tooth, the prevalence of dilaceration for maxillary central incisors has been reported to be within the range of 0.1% to 1.0%, making it a relatively rare condition [4-6].

Despite its rarity, dilaceration can pose significant challenges for dental professionals in terms of diagnosis and treatment. The complex nature of this condition requires a thorough understanding of the underlying causes and diagnostic methods to enable effective treatment planning.

2. Case Report

A 27-year-old Caucasian female reported to the Department of Orthodontics and was concerned about her malaligned maxillary anterior teeth and the absence of her maxillary left permanent central incisor. Interestingly, the patient had attended a different dental office 24 years earlier with an intruded maxillary left primary central incisor due to trauma. Her dental records indicated that when she presented back then, she was symptomless, and the intruded tooth was extracted by the attending dentist.

Clinically, the patient had a removable partial denture replacing the missing maxillary left permanent central incisor. She had a class I canine relationship with normal overjet and moderate anterior spacing. Four molars were missing, the right maxillary and mandibular first molars, and the left mandibular first and third molars which may have been removed due to dental pathological conditions.

There was a hard palpable bulge in the maxillary

vestibular area (Figure 1A). Upon radiographical examination, a "bull's eye" image was observed on both the Orthopantomagram (OPG) and periapical radiographs. This peculiar image is generated by a radiopaque mass with a central radiolucent area formed by the pulp chamber and the root canal and was described previously in the literature (Figure 1B) [7].

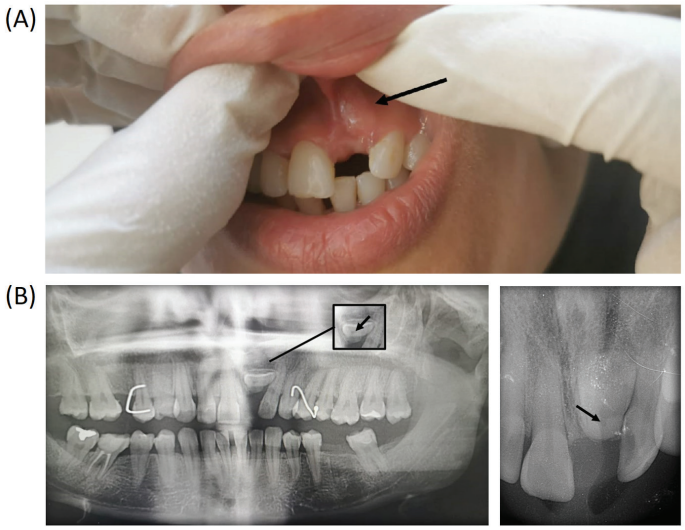

Figure 1. (A) Pre-operative image of the area of concern showing a hard palpable labial bulge. (B) Radiographic examination. The characteristic bull's eye image is observed on the OPG radiograph (Left) and the periapical radiograph (right).

Analysis of radiographs revealed that there was an impacted maxillary left central incisor. Given the characteristic feature of the radiopaque mass with a bull's eye that was shown in both radiographic images, and the fact that such peculiar appearance is associated with a dilaceration angle of 90 degrees or more, it was determined that the tooth is dilacerated. Consequently, surgical extraction of the impacted tooth was planned as orthodontic extrusion is not a viable option in such cases.

Thereafter, presurgical assessment was carried out, including detailed clinical and medical history and the surgery was undertaken shortly after under local anesthesia (2% lidocaine with epinephrine (1: 100,000). An incision was made, and a buccal flap was elevated exposing the alveolar bone and the unerupted dilacerated tooth. The labial surface of the cervical third of the root was immediately visible as the patient had a dehiscence defect of 8.0 mm x 6.0 mm at that site (Figure 2A).

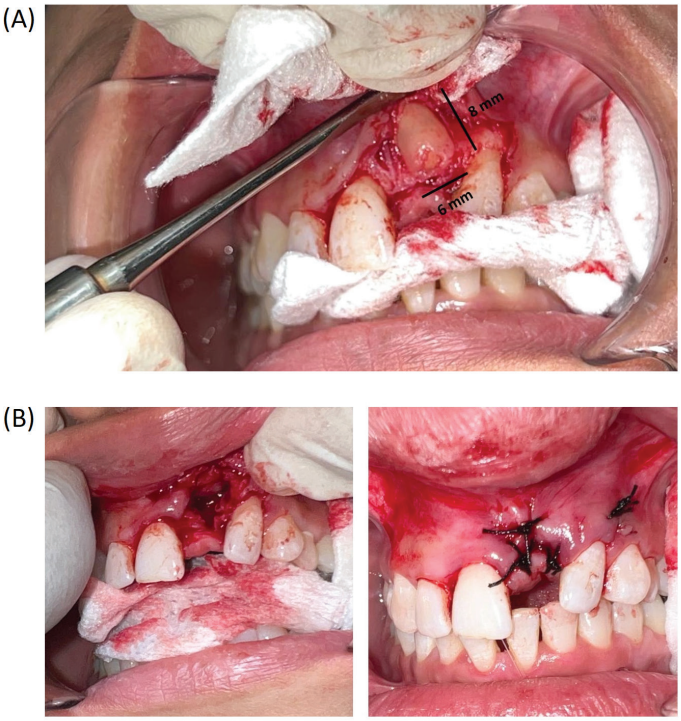

Figure 2. (A) The elevated buccal flap shows a dehiscence defect of the maxillary left central incisor root. (B) Postoperative images.

The tooth was luxated and removed in one piece with a straight elevator (Figure 2B). Finally, the surgical site was sutured with (#3/0) silk thread. The extracted tooth was examined and photographed. The crown was sound, and the root showed no signs of resorption. The cervical third of the root was angled to the rest of the tooth, confirming the diagnosis of a dilacerated tooth. Interestingly, the dilacerated tooth was found to have a 120^0 dilaceration angle (Figure 3).

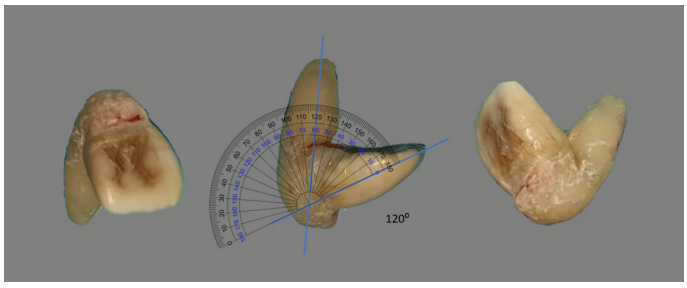

Figure 3. Dilacerated tooth images. The dilaceration angle was measured using a transparent protractor PNG image superimposed on the dilaceration angle.

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The patient was recalled after one week for a review and the removal of sutures. Healing was progressing satisfactorily, and orthodontic treatment was planned (Figure 4).

Figure 4. One week after surgery.

3. Discussion

The most common cause of tooth dilaceration is trauma [8]. Primary teeth injuries typically occur between the ages of 2-4 years, when the primary incisors are fully developed, and their root apices are very close to their permanent successors tooth germs. If the root comes into contact with the tooth germ, it can cause serious damage. The root of the primary tooth may cause significant damage if it comes into contact with the tooth germ [9, 10].

The majority of dilaceration cases go unnoticed clinically. If the defect is so severe that the tooth is not capable of erupting, the only clinical indication will be a missing tooth [11]. Radiography is the most reliable method of detecting the condition. The condition would be easily spotted on a periapical radiograph if the root bends mesially or distally. This is clearly not the case if the root is bent labially or lingually where it gives the relatively difficult to diagnose "bull's eye" appearance which is usually seen as radiopaque area with a dark shadow or a radiolucent center cast by the root canal space. This phenomenon is attributed to the fact that the X-ray beam central ray passes almost parallel with the deflected portion of the root [5].

In the present reported case of dilaceration, it was postulated that the traumatic incident identified by the patient's past dental records may have caused the dilaceration just before the maxillary left central incisor was due to erupt. The shape of the dilacerated root may have facilitated the dehiscence defect described above as the deflected root appears to have penetrated the thin labial bone at some point during the root maturation process. The odds of developing fenestration or dehiscence defects in the labial cortical plate increases the longer the primary predecessor tooth is retained [1].
A severely dilacerated tooth poses a significant surgical challenge for dentists because root fractures are likely to occur as a result. Typically, the preferred treatment option is to expose the tooth surgically followed by orthodontic treatment [12]. Nevertheless, an unerupted severely dilacerated tooth makes this treatment modality less favorable [13, 14].

4. Conclusions

Tooth dilaceration is a challenging and complex dental condition that requires careful diagnosis and treatment. Childhood trauma is the most common cause of dilaceration, which can result in significant root damage and subsequent dental complications. While radiography is an effective diagnostic tool for detecting dilaceration, the shape and position of the dilacerated root can make diagnosis difficult. In cases of severely dilacerated teeth, a multidisciplinary approach is required due to the high risk of root fractures during treatment.

When an unerupted tooth is severely dilacerated at an angle greater than 90 degrees, surgical extraction remains the first-line treatment option. A minimally invasive approach may not be advisable in such cases. However, by establishing an accurate diagnosis and understanding the characteristic radiographical features of rare dental anomalies, complex cases can be successfully managed. Adhering to the basic principles of diagnosis and treatment is key to achieving a positive outcome.

Authors' contributions

This work has been carried out in collaboration between both authors. Both authors have read and approved the final manuscript.

Conflict of interest

None to declare.

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