Multidisciplinary approach in managing dental trauma in combination with anterior crossbite

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Introduction: The incidence of dental traumatic injuries globally is around 5%, the main types of injury to permanent teeth were uncomplicated crown fractures (20.8%) (1,2). Management of tooth fracture requires an accurate diagnosis, treatment planning, and regular follow-ups. Tooth fractures mostly involve front teeth in the upper jaw because of their position in the oral cavity. The most common causes are sports activities, traffic accidents, and physical violence (3). Dental aesthetics have become highly important in recent years. More patients seek a visually pleasing smile, and the perception in the media about the concept of beauty has improved. Nowadays, patients' demands for invisible restorations which provide a natural look have increased (4). Anterior crossbite is a malocclusion that takes place for various reasons, leads to major problems, and may be fixed using various methods. Its prevalence in different countries around the world varies between 2.2% and 36% (5). Previous trauma may be predictive of an increased risk of root resorption during orthodontic treatment; thus, an appropriate observation period should be taken prior to the start of the orthodontic treatment depending on the type of the injury (6).

Objectives: To present the principles in managing dental trauma with anterior crossbite and describe the multidisciplinary approach followed to provide the optimum care for such patient.

Case report: A 7 years old female patient came to the emergency room with her mother with a chief complaint according to the mother ''My daughter fell down and broke her teeth" and chief complaint according to the child: "I have extra teeth please remove it".

Clinical Examination: Patient presented with poor oral hygiene, multiple carious teeth, uncomplicated crown fracture involving enamel and dentin in teeth #11,21 retained teeth #52,62 and anterior crossbite of teeth #12,22. This clinical situation often requires a multidisciplinary approach to provide a functional and esthetic resolution [Figure 1].

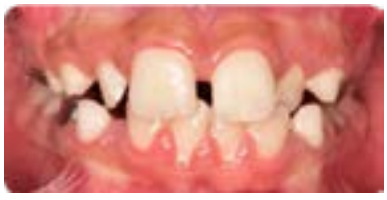

Figure 1. Pretreatment photographs.

Treatment: Dental treatment was done in the dental clinic using Local anesthesia. In E.R visit teeth #11,21 was restored with direct composite restoration and teeth #52,62 were extracted. In the following dental visits restorative treatment was done as shown in table (1) Teeth #11,21 were kept under regular follow up. Orthodontic treatment was then started to correct the anterior crossbite and provide space for the permanent canine by bonding 2*4 fixed orthodontic appliance and 0.014 NITI was inserted and upgraded to 0.016 NITI and then to 0.016 stainless steel wire and Elastomeric chain #12-22 to close the diastema and provide space for permanent canines to erupt [Figure 2,3].

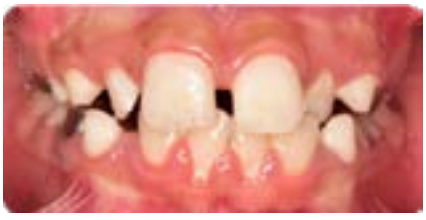

***Figure 2**. Pretreatment, 6 weeks post trauma and After crossbite correction.*

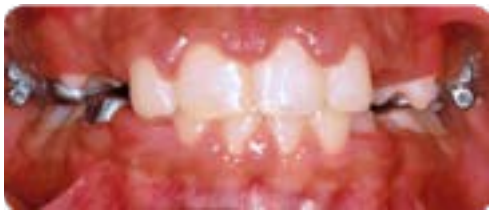

***Figure 3**. Post treatment and pre treatment photographs.*

Tooth No.	Treatment	Tooth No.	Treatment
16	Class II composite resto	63	Extraction
54	Class II composite resto	65	Extraction
53	Extraction	26	Class II composite resto
52	Extraction	36	PFS
11	Class IV composite resto	74	Class II composite resto
21	Class IV composite resto	46	PFS
62	Extraction		

Conclusion: Because of the patients' demands for invisible restorations which provide a natural look have increased. And while anterior crossbite might lead to numerous potential problems, proper management will dramatically improve the quality of life and eliminate possible future consequences. To achieve optimum treatment outcomes for patients with dental trauma and anterior crossbite, working in multidisciplinary team is highly recommended.

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Biography

Feras AlDhafr is currently Saudi board Pediatric dental resident at National Guard hospital. He have multiple research publications. He won third place award in case presentation at National Guard Hospital resident retreat day.

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