

Esthetic smile design an interdisciplinary approach



RABAB ALTUWAIRQI, BDS, SB-Ortho

Introduction: Interdisciplinary collaboration is widely recognized and considered essential for optimizing the development of knowledge and practice in the dental field. This case report describes the comprehensive treatment of a patient who needs interdisciplinary management.

Case descriptions: A 12 years-old, female who presented with the chief compliant of "unpleasant smile" due to peg-shaped lateral incisor or mesiodistally deficient lateral incisor as defined by *Grahnén*¹.





Method: An interdisciplinary approach was employed to meet the patient esthetic demand through the following specialties

ORTHODONTICS

designed to improve the occlusion & create space to facilitate the final restoration using Kokich el.al.2 guidelines.



ESTHETIC DENTISTRY

designed to address the esthetics needs by restoring the tooth shape & proportions by direct composite bonding.







Wax-up model made to avoid width alteration & simulate the final outcome.

PERIODONTICS

designed to enhance the final smile esthetics by gingival contouring.







Gingivectomy improved the gingival margin over the lateral incisor (about 0.50 mm coronal to the central incisor).

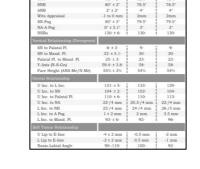
Result: The malocclusion has been addressed successfully & the treatment objectives accomplished with high patient satisfaction.

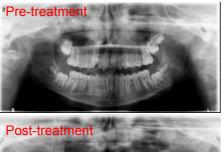
Clinical



Radiographic









Conclusion: The interdisciplinary teamwork is an important model for delivering optimal health care to the dental patients.

Discussion

Priority has been given to peg-shaped incisor's correction since it was the patient's main concern. Moreover, unilateral peg-shaped lateral can alter the patient's esthetics & anterior occlusion resulting in median diastema, generalized anterior spacing & upper midline deviation.3

- An interdisciplinary approach was employed to meet the patient esthetic demand through the following specialties:
- Orthodontics: the orthodontic involvement has been designed to address the esthetics needs, anterior occlusion & to facilitate the final restoration by: (A) Space opening and (B) Proper tooth positioning.
 - A. Based on Kokich guidelines for space opening: orthodontics is often necessary to create space to build-up the tooth & it is advantageous to create "extra space" temporarily, to ease the restorative work.2
 - B. Also, based on Kokich guidelines for proper tooth positioning: It's preferable to place the tooth nearer to the central incisor, in the center of the ridge & where the gingival margin aligned with the contralateral lateral incisor.4
- Esthetic Dentistry: the restorative participation was designed to restore the tooth shape & proportions.
 - Alsulaimani et. al.⁵ found that tooth proportions affects the relative smile attractiveness, accordingly a wax-up model was made to avoid width alteration & simulate the final outcome.
 - The material of choice to build-up this tooth was resin composite which exhibit good physical properties, marginal integrity, and reversibility which allows for other treatment approaches in the future.6
- Periodontics: the periodontics contribution was designed to enhance the final smile esthetics by gingival contouring.
 - Sarver et. al. suggested gingivectomy to improve tooth proportion and to finish the smile to a much finer degree of esthetics.

Ackerman's statement that "Esthetic smile design is a process that allows to treat patients with an individualized, interdisciplinary approach" 8 has been applied successfully in this treatment course.

References:

