

RESTORE A WIDE RADIANT SMILE WITHOUT DENTAL EXTRACTIONS

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ABSTRACT

Seeking orthodontic treatment is the right of every patient. Its outcome however depends on the clinical judgment of an orthodontist who thoroughly evaluates and customizes a comprehensive treatment planning so as to fulfill the current "needs and wants" of the patient in question.

Non extraction philosophy is the main pivot of this article. The logic behind is to maintain a fuller labial profile, concomitant with a wide attractive smile, which in turn expedites easy psychosocial adjustability of the patient in the community around.

Key words: Smile, Extraction, Sunken face, Esthetics

INTRODUCTION

Restoration of dentofacial esthetics has always been the main concern of modern orthodontics. It has long been recognized that extraction of teeth is often accompanied by flattening and deepening of the facial profile. Unjustified extraction of cuspids, better to be called "the pillars and cornerstones of the mouth" lead to sagging of the lips, which in turn compromise facial esthetics. Flatter labial profile curtails smile and vermilion display of the lips and thus gives a progerian look to the patient. This is often disliked by most of the patients particularly by the female youth. Fuller lips give healthier and pleasing look. The case of a young female who was complaining of an unsatisfactory smile, dental crowding and blocked out canines is presented.

CASE HISTORY

A young healthy girl of age 13 reported to the Orthodontic Department of Armed Forces Institute of Dentistry, Rawalpindi, on Nov 11th, 2001 for orthodontic opinion. Her major concern was poor smile, crowded and crooked teeth. She did not like the way her teeth were displayed at the time of smiling (Fig: 1a, 1b).

On extra oral clinical assessment, she had a mesofacial form with potentially competent lips that were somewhat lagging behind the "Rickett's esthetic plane". Her nose and chin were almost in balance to

each other. The scarcity of labial protuberance with reference to the esthetic plane was the real cause of a poor vermilion display, both in repose and animation. This was undermining her labio-facial esthetics. Mild projection and substantiation of vermilion display will definitely back up the labial esthetics. Face was completely symmetrical both from skeletal and dental perspectives. No evidence of functional deviation was noticed. TMJs were almost within normal limits. No popping or tenderness was revealed.

Her intraoral examination revealed labially blocked out both maxillary, and only left mandibular permanent cuspid (Fig. 1b). In spite of severe crowding in the anterior region, dental central lines were still on. The teeth in question tremendously diluted her smile, which she always tried to limitize by avoiding successive display of the frontal teeth particularly at the time of conversation or smiling. Molar and cuspid relationship was Class-I. All teeth were normal in form and size, only two molars were showing some evidence of carious lesion, which were advised to be restored. All third molars were missing. It was confirmed by a panorex. Her oral hygiene was excellent and all soft tissues including tongue and frenal attachment were within normal limits. There was no history of any systemic illness.

Cephalometric analysis revealed Class-I skeletal relationship. She had an excellent skeletal profile,

bar point "A" and point "B" depicting poor spatial relationships with reference to "E" esthetic plane. This mildly compromised scenario, secondarily affected the labial profile and esthetics of the patient in question. Rests of the parameters were almost within normalcy.

Her problem was discussed with parents in a detailed manner. Keeping in mind the major concern of the patient, it was decided to level and align all crowded and blocked teeth with in the relevant arches. This will help restore the integrity of the arches, which in turn will enhance the profile of the labial region. Non-extraction approach was personalized. It will back up the forward relocation of points "A & B", which in turn will boost up her labial profile, an utter need of the youth and juvenility, in today's face and esthetic conscious society.

Imminent pros and cons of fixed orthodontic appliances were brought to the notice of the patient and her parents. They were informed of stipulated treatment time period of 2-3 years. Informed consent was taken. Complete pretreatment record was obtained and treatment was commenced on Dec 6th 2001. After banding and bonding patient did very well. She displayed excellent passion and compliance. Leveling and alignment was completed though .014 NiTi wires. Extra attention was paid to the health of the attached gingiva, particularly at the time of arch expansion. Progressive arch wire changes were regularly undertaken, keeping in view the complete achievement of all goals and objectives set at the start of orthodontic treatment. She was reiterated to observe religious oral hygiene instructions. Anti plaque mouthwash was advised. Gingival health was particularly kept under strict vigilance.

After couple of months into treatment, her father was posted out to some farther station. This greatly affected her regular orthodontic visits which in turn undermined the smooth flow of orthodontic treatment. She used to stretch her scheduled appointments up to 4, 5 months and at times even up to 8 months. Extra efforts were made so as to cope with this expected scenario. Special emphasis was placed on regular use of Class-I and II elastics. Force vector was changed through the modified configuration of elastics. Patient did well with the elastics. At the moment she is passing through detailing and finishing procedures. Root parallelism is given due attention, so as to gain more stable

and predictable results. Intra treatment photographs were taken on Aug Pt 2004. Till to date she has gained tremendous dentofacial esthetics (Fig.2a, 2b,2c). She is highly motivated. Restoration of fuller lip profile and juvenile look is in progress. Vermillion area is enhanced. Radiant smile has been gained and all relevant areas to be addressed have been targeted (Fig.3). With in the next 2-3 months debonding and debanding will be undertaken and she will be given removable retainer for the upper while fixed retainer for the lower arch. Post treatment recorded will be scheduled. So far she and her parents are thrilled with the marvelous results that have been gained.

DISCUSSION

Flattening of profile as a consequence of lingual positioning of incisors is a subjective determination, perceived by many as premature aging of the face. Our society is attached to the concept of a "full face" with a radiant smile and beautiful white teeth matching an image of good health and ever lasting youth. We know that the factors contributing to normal facial changes with age are long growing nose, mandibular growth, and shape and harmony of labial curves. We must take these factors into considerations before initiating any customized orthodontic treatment planning. Extraction of teeth has great impact on facial profile. Its implications arise in the form of lip drop or flattening, increase in the lip length, which in turn influences thickening and toning of both lips. This deteriorates the vermilion display of the lips both in repose and dynamism¹.

Angle believed the ideal dentition was a full complement of teeth. Walter concluded dental arches could be expanded without much relapse declaring: "The statement that the dental arch length can not be permanently widened or lengthened is incorrect"².

At times labialization of incisors so as to gain a fuller labial profile, disregarding the health of the periodontal alveolar bone and attached gingiva is not a good clinical practice in orthodontics. Therefore, the gingival condition must receive major attention when planning orthodontic treatment without extraction"⁴.

Nature has created nothing as futile. Maximum efforts should be made to avoid unjustified extraction of



Fig 1a: Pretreatment poor smile



Fig 1b: Pretreatment occlusion

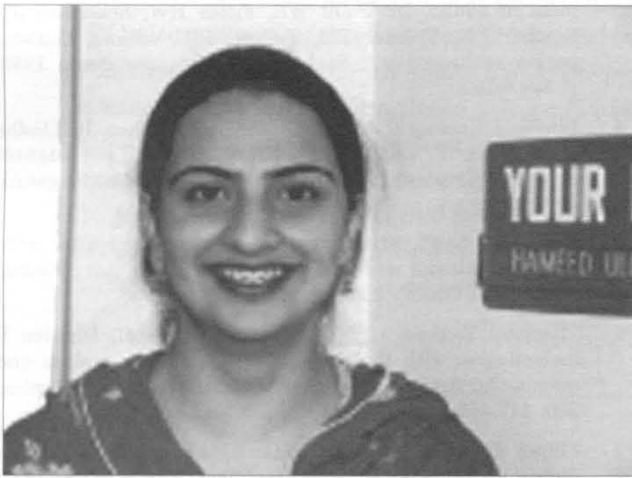


Fig 2a: Pretreatment smile

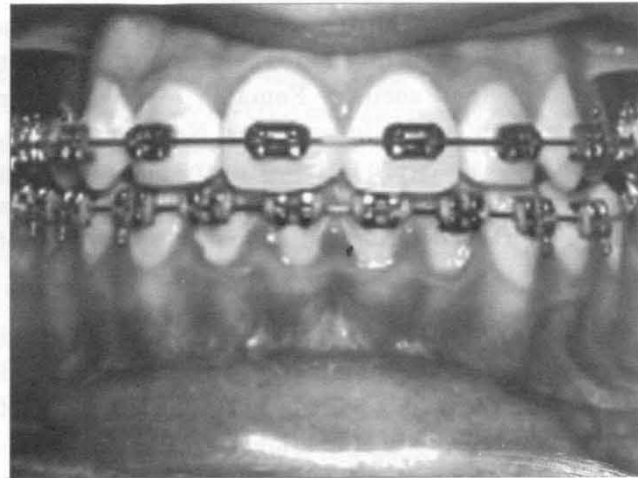


Fig 2b: Post treatment occlusion

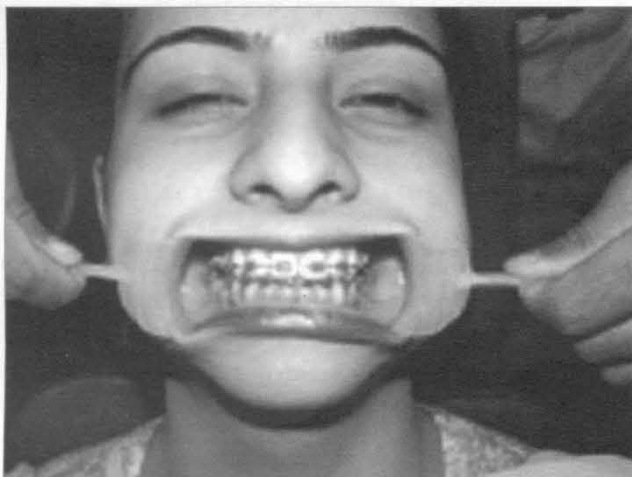


Fig 2c: Post treatment frontal occlusion



Fig 3: Post treatment radiant smile

teeth. Every effort should be made to customize prudent treatment planning for each and every patient. It is always preferred to make a mistake on the non-extraction side rather than on the extraction side of orthodontic treatments.

The presence of maxillary canines is considered almost sacred in dentistry. Their position as anterior teeth contributes to an esthetic smile. Their significant clinical crown height leads to a functional occlusion. Their root length and strength contribute to their longevity and utility, and their location at the "corners" of the arch make them ideal abutments.

Being the pillars of the mouth, they enhance labial esthetics exponentially through restoration of a radiant "Hollywood Smile" s.

Measuring esthetics is very complex and is always perceived in a much diversified manner by the present face conscious society. Females always prefer procumbency and fullness of lips. Nasolabial angle, which ranges between 90 to 120 degrees, is always on the lesser side in females as compared to males. This angle is further deteriorated if injudicious extraction of the teeth is undertaken'.

In the patient in question who was skeletally and dentally Class-1, maximum efforts were made to avoid collapse of the labial profile by obviating extraction of teeth⁸. This modality of treatment helped her in gaining fuller profile along with restoration of a wide attractive smile. Accommodation of all cuspid not only complemented the quantum of teeth but they also refurbished functional occlusion through perfect restoration of cuspid guidances.

Extraction of teeth in orthodontics should be maximally avoided as it aggravates the flattening and produces "dished in" effect on facial profiles, which in turn jeopardizes restitution of a pleasing smile. This is more evident in males, as in males the nose and chin continue to grow much longer than in females.

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