

ORTHODONTICS FOR ADULTS

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ABSTRACT

There are special considerations for adults. Diagnosis, treatment mechanics and, most importantly, finishing must all be altered for the adults. In the adult patients we want to minimize the side effects. We also want the same in the youth, but in the youth, side effects are often taken care of by growth. That's not the case in adults.

Here a case of an adult patient complaining of bidental protrusion and difficulty in closing her lips is briefly presented.

Key words: Adults, Esthetics, Bidental protrusion, Incompetent lips.

INTRODUCTION

For the last couple of years there has been an emerging trend in the adult orthodontics in Pakistan. An adult can be defined as one who is fully grown, most males of 18 and most females of 16 can be considered as adults. All adult patients provide us an opportunity to render the greatest possible service in orthodontics. We do not have to wait long for these patients to grow up to see the improvements in gingival contour and condition, the improvement in speech and swallowing.

There are many reasons why adult orthodontic therapy should be encouraged, including the improvement of function and occlusion, and improvement of esthetics, as well as the psychological aspects. Also, better prognosis will result for prosthetic consideration from having sound, upright teeth for support; and orthognathic surgery results are improved when the teeth are prepared with orthodontics to function in the new environment provided by surgery.

Many adults missed an opportunity to be treated by an orthodontist when they were younger, some because of lack of information and many because of lack of financial resources. That is why it is very pleasant to treat adult patients. When they come as adults for treatment they are very enthusiastic. They are, there-

taking care of their orthodontic appliances, following instructions and maintaining good oral hygiene'.

It should also be pointed out that orthodontics for adults is not so forgiving. When you look at treatment of young patients, some times you wonder why the treatment result was so good when you look at the force system being used. In the adults, you get the results from what you applied, and if you get a bad result it was because your force system was inappropriate².

Adult females complaining of dental protrusion and thus difficulty in lip closure are always prone to a bunch of psychosocial problems. They always face adjustability problems in the social set up. This issue is further compounded when teeth start drifting and rotating due to a gradual shift of epithelial attachment. These patients are always demanding and pose a big challenge for a treating orthodontist. Preserving all the teeth is not always possible. No tooth is sacrosanct, and creative mind is required to resolve these problems. Our prime target is restoration of dentofacial esthetics, even at the cost of dental extraction. This may help in attaining a more stable, sound and harmonious dentofacial complex³.

In this case report the orthodontic management of an adult female, spread over a period of three years and four months.

CASE REPORT

An adult female of 38 years of age reported to orthodontic clinic at Armed Forces Institute of Dentistry, Rawalpindi on August 26th, 2000. She was complaining of unsatisfactory smile, dental protrusion, difficulty in closing her lips, mild spacings and drifting of her frontal teeth for the last couple of years.

Extraoral and intraoral examination revealed following findings:

- Convex mesofacial form
- Symmetrical face
- Incompetent lips
- Bidental protrusion
- Moderate lip line
- Spacings distal to maxillary centrals
- Edge to edge bite
- Attrition of incisors
- Class-I molar and cuspid relationships
- Chronic periodontitis with gingival recession

There was no history of any systemic illness. After thorough clinical assessment treatment planning was explained and discussed with the patient. She was informed of all pros and cons of orthodontic treatment and an informed consent was taken. Her oral hygiene status was addressed in collaboration of periodontist. It was predecided that orthodontic treatment is to be initiated only, once periodontium is brought under full control.

As she was a confirmed case of bimaxillary protrusion, extraction of all first premolars was undertaken. Banding and bonding of both the upper and the lower arches was completed on Sep 9th, 2000. Initial leveling and alignment was attained. She was recalled after every 4-6 weeks of interval. Her periodontal status was kept under strict vigilance. Special orthodontic tooth brush and interdental hygiene device was advised for dental care.

After leveling and alignment was accomplished she was put on canine retraction devices, keeping in mind the maximum anchorage status of the patient. All necessary precautions were engineered so as to overcome any unrequired load over the anchored units.

When all the four cuspids were retracted; enmass retraction of incisors were initiated. Mandibular incisors always took its precedence. All anchor units were kept under strict watchfulness. No adverse effects of the loops were noticed except once while patient was out of station, for which she reported to a local dentist who fixed her problem by cutting her archwire. Once she was back her interrupted treatment was reinitiated.

Treatment ran very smoothly and she was put on latex elastics. Her cooperation in terms of use of elastics suddenly declined. She did not like its wear especially during the social events. This affected the smooth flow of her treatment to some extent but later on geared up her efforts once she was more educated on the subject. On April 4th 2003, left mandibular band appeared loose because of elastic pull which was refixed snugly. She was rephotographed during the intratreatment period. On July 27th, 2003, maxillary laterals were kobeyed and use of elastics was continued till all spaces were consolidated.

On Dec 13th, 2003, debanding and debonding was done and post treatment photographs along with complete record was taken. Hawley's retainers were delivered for both the arches. Take home instructions for retainers were given. Presently she is in the retention phase and is regularly visiting us for the routing monthly checkups.

Post treatment results were rewarding. Her dentofacial esthetics was tremendously improved. All rotated teeth were derotated and spaces were closed. Protruding teeth were retracted up to normalcy. She is able to close her lips at a subconscious level. She gained a lot of confidence and self esteem after all other dentofacial problems were addressed and resolved. Above all she was furnished with a more pleasing and a wide attractive smile.

DISCUSSION

Adult orthodontics is becoming a larger proportion of our practice. Female gender is dominating. They report to us after year of using and abusing their teeth. The prominent teeth are either shortened, cut or abraded unjudiciously. Their teeth have more wear facets, shorter cusps and shallower fossae. Many have had extensive dental work: amalgams; crowns which may be nicely carved, but with cuspid locations and

groove directions that have nothing to do with the mandibular movement of that mouth. Bridges and partial dentures present an entirely different challenge in orthodontic treatment. Couples of adult patients have either full blown temporomandibular pain dysfunction syndrome or a subacute condition with all the signs, but without the subjective symptoms as yet⁴. The motivation behind the late seeking for adult orthodontics, at our clinic is :

- More conscious of appearance with age
- Medical fitness
- Marital problems &/or spouse asked for it
- Progressive space opening between anterior teeth and/or starting of crowding
- Did not want or availed orthodontic treatment as a child
- Parents could not afford orthodontic treatment
- Was advised by a dentist that orthodontic treatment is impossible after age 12
- Had orthodontic treatment during childhood but relapsed
- Malpositioned teeth contributing to periodontal diseases
- Malocclusion and mandibular slide producing soreness in TMJ area
- Incomplete orthodontic treatment as children poor compliance
- No access to orthodontist dexterity

Adult orthodontics is different from juvenile orthodontics⁸. In children we must concern ourselves with tooth movement plus growth, whereas in adults we are dealing strictly with tooth movement. Parts of the records are the same as if the young. We have to consult periodontist on the periodontic status of the patient.

We must be fully competent where to position the mandible. At times, the patient may land with the severe temporomandibular disorder problems⁴. In these cases we must first establish the structural position of

the mandible by means of a splint before proceeding any further. The structural position, which is the position where the patient has no symptoms, where there is harmony between the musculature and the joint and the occlusion. This is the positive landmark we try to achieve in these patients. In patients who become symptom less, but have some missing or deteriorating dentitions, the splint may be utilized as part of anchorage system.

Biologically there is no limit to tooth movement, but the limits come in the number of anchor units and the force system that is generated. In the adults teeth can be moved up to 15-18 mm without any loss of bone or any iatrogenic damage. However it is important to know that in adults the tooth movement is not through the bone but with the bone which means that it must be done by translation and not by uncontrolled tipping where a very high quantum of stress is created. In the adults, the marginal bone level must be taken into considerations. If reduction in bone volume is anticipated, we must lower magnitude of force and monitor moment to force ratio for a certain tooth movement.

Attention must be paid to the periodontic significance of bimaxillary protrusion¹. All contact relationships and deflective contours must be thoroughly addressed and rectified. There is periodontic value in having the teeth upright over the basal bone, in that it gives us a greater amount of bone investment around the root of the tooth. When the patient has already got into difficulty and exposure of bone is required in therapy, we find that very often there is no bone on the labial aspects of these teeth with all the imminent difficulties which this anticipates.

In the adults the pool of cells available for tooth movement are less, therefore the initial force should be lower by about 50% of that of adolescents. All adults with osteoporosis and metabolic bone disorders have to be treated before seeking orthodontic treatment. At times these diseases can be detected for the first time by abnormal reaction to Biologically 5,7s we apply to the teeth. FE you suddenly see that a tooth becomes very loose or that a tooth does not move at all, it may be a sign of difference in the bone turn over⁹.

It has been a big question whether a woman in menopause should have estrogen treatment. If we treat patients who are close to menopause and they are

not getting hormone supplements, we must be aware that there is an increase bone turn over, which may increase the risk for root resorption and other side effects. Patients who are on cortisone treatment have a very low cell pool available, and their bone is covered with a very thin layer of osteoids so that bone resorption is not very likely to occur. They have sterile bone surfaces without any activity going on ⁵.

If there is a marginal bone loss, and we attain perfect intercuspation and good incisal relationships, one can not yet anticipate a stable occlusion by itself ⁶. We will have to do some permanent retention, such as splinting from canine to canine. To achieve a stable occlusion, side effects are to be minimized, which in turn reduce total time period of orthodontic treatment.

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