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Orthodontics and Beyond-An Overview of the Changing Concepts and Current Trends in Orthodontics

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Orthodontics has expanded its envelope of treatment from correction of misalignment of teeth to complex conditions involving the skeleton and face. The emphasis nowadays in on the holistic correction of the face rather than the dentition. Newer methods in diagnosis and treatment help the clinician to clearly identify the problem and device a treatment plan to suit the individual patient need and concern.

Temporary anchorage devices (TAD)

Anchorage has always being important in orthodontics. Irrespective of the biomechanics incorporated into the system to minimize anchorage loss both vertically and horizontally, it continued to be an area of concern. The introduction of TAD's into the orthodontic treatment has revolutionized the scope of treatment possible, particularly in skeletal cases. TAD'S serve as an absolute anchorage to move the teeth in the desired directions, which is impossible to be achieved with conventional treatment alone. Borderline skeletal cases can be effectively treated with orthodontics alone, avoiding the trauma of a surgical correction by TADs. It is used in a variety of clinical situations including vertical maxillary excess, molar distalization, mandibular excess, expansion etc. Proper understanding of biomechanics is inevitable for treatment success.

Nasoalveolar Moulding (NAM)

Cleft lip and palate management require a multidisciplinary approach involving the orthodontist, oral surgeon, prosthodontist, speech therapist etc. Timely intervention and scheduled treatment approach is an integral part of cleft treatment. Orthodontist intervention is needed at the initial stages of treatment mainly to approximate the cleft part of the deformity and simultaneous moulding of the nose (NAM). The timing of such a treatment is of great importance, the early the better, probably days after birth. The concept behind NAM is to approximate the widely apart cleft segment so as to facilitate a better surgical results. Although there are conflicting reports on the advantages of NAM, our studies have shown beneficial effects with timely intervention.

Adult Orthodontics

With increasing number of adult patient seeking orthodontic treatment the demand for esthetics during the course of orthodontic treatment has gained momentum. Clear aligners and lingual orthodontic treatment has emerged to satisfy the need of such patients. Lingual orthodontics is a vastly developing field with new innovations and mechanics being added by the day. Patient should be clearly explained on the merits and demerits of lingual treatment beforehand. Clear aligners on the other hand uses a set of aligner to correct the malocclusion from its initial phase to the final. It takes into advantage the possibilities of CAD- CAM imaging. The disadvantage of the clear aligners is the restricted envelope of tooth movement possible, patient compliance and the structured pattern of aligner use, with no intervention possible at the treatment phase. But judicious use and patient selection can ensure good results. Both these treatment modalities need the use of an elaborate lab setup and support.

Rapid orthodontics

Time is the most important constrain of orthodontic treatment. Patient should be educated on the need of timely appointments and maintenance of the appliance. Many researches are underway on shortening the span of treatment, namely the corticotomy, Accelerated

osteogenic orthodontics, low level laser, low frequency mechanical vibrations etc. these methods have not gained wide acceptance owing to the invasiveness and the armamentarium involved. Biological methods for accelerating tooth movement, involving the prostaglandin E (PGE), RANKL, Interleukin etc are subjected to large number of research at present times. More research on the dose, method and long term effect of these biological methods on humans need to be done, but certainly this is orthodontics of the future.

What future holds?

As its said" Necessity is the mother of all inventions" the future of we might be see new techniques to limit the drawbacks in the field, namely aesthetics, time and relapse. Many research are underway in this regard and hopefully the clinician and the patient will be benefitted of it at large. In the end I would like to quote

"If you want something new, you have to stop doing something old"

Peter F Drucker

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