

Change is Inevitable Progress is Optional

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“Change is inevitable progress is optional”



Tony Robbins

Hey, I am Devika 8-year-old female just like one among you, who is raised in contemporary Indian culture and was made to believe that its fine to have crooked teeth, or gap between teeth, gummy smile, bugs bunny teeth, proclined teeth, funny smile, and so on as you can correct everything after 13 years of age. Yes, you heard it, wait till 13 years and enjoy the bullying and peer pressure during your childhood.

Let us not blame anyone for this and have a retrospective analysis of the current situation of practice among us.

As in any field of science, dental science also has many schools of thought and it changes from time to time. For example, Dr Edward H Angle followed the protocol of non-extraction philosophy but later his own student Dr Charles H Tweed found many relapses in the non-extraction protocol, so he devised a new philosophy based on facial balance and position of lower incisor on the basal mandibular bone. He proposed the extraction of teeth if needed for better stability. During 1940 this became very popular in orthodontics, and many followed this principle. But later even the extraction philosophy met with relapse and failure and the pendulum starts swinging toward non-extraction protocols and more into the root reason of a malocclusion rather than the clinical manifestations.

As more research in the field of orthodontics were carried out, it was found that skeletal correction is the key rather than the dental relationship. The key studies of Peter Harold, Tomas M Graber, Frankel, and Melvin Moss showed light to the relationship of skeletal–dental and soft tissue role in developing a malocclusion.

As I mentioned earlier, the pendulum swing back to the old theories of growth and development and its clinical application. One of the theories which hold a significant role is the functional matrix theory by Dr Melvin Moss. This theory along with sutural theory by Weinmann and Schier 1947 and cybernetic theory by Petrovic clearly explain the role of early identification and prevention of developing functional disharmony in either muscular (soft tissue), skeletal or dental apparatus. The orthodontic screening which was done at 13 years was changed to 9 years and then to 7 years by AAO. This places pediatric dentists in a key role in the early detection and correction of developing malocclusion.

We should not focus only on the dental relationship and more focused on the skeletal and soft tissue parameters that lead to dental malocclusion and also associated neuromuscular disharmonies. So, correcting a dental malrelation may justify the patients' immediate concern but the root reason for malocclusion persists and eventually leads to relapse or failure. Thus, as in other

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dental specialties, we need a detailed examination of the patients' orofacial structures, assessment of dental, skeletal, and social maturity so that we can select only those cases which are ideal for early interception of malocclusion.

TIMING OF TREATMENT

The most important factor that determined the success of early age intervention is the timing of interception, which depends on various other parameters like, parents' awareness, patients' cooperation, type of malocclusion, approximate duration needed for correction, and cost-effectiveness of the treatment.

BENEFITS OF PEDIATRIC ORTHODONTICS

Many malocclusions can be prevented if diagnosed earlier. Conditions like a functional shift of the mandible leading to a crossbite of either single tooth or segmental can be corrected early. This kind of functional problem if not corrected may lead to skeletal problems as the patient matures. Interception of NNS habits also should be treated as early as possible before it causes a dental and skeletal effect.

Prevention of unwanted tooth movement by means of drifting of teeth to the lost space can be prevented with the help of a space maintainer. This will prevent or reduce the space discrepancy in a dental arch and thus minimize or eliminate future extensive fixed orthodontic treatments.

Early intervention of severe protruded teeth can improve the self-esteem of a child and prevent trauma to the anterior teeth. The protrusion can be due to teeth proclined out of the arch due to lip incompetency, NNS, underlying skeletal problem, or a combination of all. Early management of skeletal problems significantly reduces the burden of extensive fixed appliance therapy in adolescence. Moreover, guiding the skeletal to its best position and soft tissue adapts to the new position with teeth housed at the right position gives the best retention as all the parameters (skeleton/soft tissue/teeth) are all in equilibrium.

Crowding in the dental arch especially the lower anterior is a very common clinical condition we come across. The lack of space may be due to an oversized tooth on a normal basal arch, or a small dental arch with normal size teeth. Functional problems like lip biting or thrusting, NNS habits, retained infantile swallowing

patterns, or hyperactivity of mentalis muscle can cause lower anterior crowding. Early identification of the functional problems can eliminate or reduce the degree of crowding and can give more stable results.

A well-aligned dental arch with tight contact makes the patient to maintain good oral hygiene and thus reduce the risk of dental caries.

An increase in pediatric sleep disorders is another cause of concern for a pediatric dentist. Lack of sleep during the night has been shown to have a direct and indirect correlation with various diseases or conditions like type II diabetes, cardiovascular problems, frequent URI, tired and irritability with chronic fatigue, poor academic performance, hyperventilation, ADHD, and sleep apnea. A well-developed wider palate will give a wider upper airway and thus reduce the nasal resistance during breathing and promote nasal breathing. The tongue should be placed high onto the palate at rest and this reduces the chance of the tongue falling onto the airway space while sleeping, thus maintaining a good patent airway. Early identification of a severely constricted or high-arched palate with narrow upper and lower airway can be treated by maxillary expansions. This will be of great benefit to the patient as we can prevent future consequences due to disturbed sleep. A pediatric dentist plays a vital role in this multidisciplinary approach of management of pediatric sleep apnea.

DRAWBACKS OF PEDIATRIC ORTHODONTICS

Prolonged treatment time: usually pediatric orthodontics are divided into stages depending on the condition. "Burn out" of the patient for future orthodontic treatment can be there. Thus, we should have a patient compliance interceptive and myofunctional approach where we should comprehensively explain the treatment plan and make the patient and parents aware of the current

condition, duration of treatment, number of visits required and duration of each visit, the cost involved, number of the appliance required, need for later fixed mechanotherapy, etc.

Patient mental maturity to accept the treatment should also be considered. In some conditions like NNS habits, the child may not accept the protocols due to the lack of mental maturity. An alternate plan to mold the child to accept the treatment plan at a later stage or postpone to the later stage where the child accepts the protocol should be considered. Thus, a thorough orthodontic evaluation of the present condition, patient acceptance, parents' willingness, and cost-effectiveness all should be considered before planning for pediatric orthodontics.

To conclude, in my perspective by weighing the benefits of pediatric orthodontics we as pediatric dentists should be the forerunners in managing a developing malocclusion. I believe the upstream management of a disease is always better than the downstream where the disease or condition has progressed or worsened. As pediatric and preventive dentists we should always aim to prevent the disease or a condition at its inception stage. With the advent of the latest technologies like computerized cephalometric analysis, CBCT, and newer diagnostic tools we are in a better position for accurate and more predictable results. Thus, the tetrad of pediatric orthodontics will be a proper diagnosis and treatment plan, knowledge and skill of the pediatric dentist, patient and parent acceptance, and cost-effectiveness of the treatment.

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