

Digital orthodontics: where are we heading?

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The other day, a relative called me and asked if it is true that she can get all the sets of clear aligners and go abroad for her study without follow up and get as good result as braces? Are braces obsolete? How would you respond to that as an orthodontist?

We all know digital technology has taken a quantum leap in the development of each and every field and orthodontics is no exception. Once considered fantasy has now become a reality in recent days. The procedures that are considered mandatory and norms nowadays might be history soon. Impressions with alginates/putty will most probably be replaced by intraoral scanners in near future and so might be 2D radiographs and photographs. 3D technology has tremendously revolutionized the treatment modality and has opened more dimensions to orthodontics.

Artificial intelligence is becoming more powerful than ever before, and treatment has shifted from generalized to more customized treatments. It has helped to increase the effectiveness and efficiency of the orthodontist if it is in the right hands. Not only for aligning the teeth, but also for craniofacial surgeries computer-assisted surgical simulations or virtual surgical planning has become the norm for the treatment.

Nepal too has seen a lot of rapid development in introducing the latest technology for providing the best possible treatment to patients. Not only in house aligners are on the rise, but sophisticated artificial intelligence computer-based simulations are regularly used for aligners and orthognathic surgery. Furthermore, patient specific implants and customized temporal joint replacements based on best occlusion are routinely used to treat complex facial deformity corrections as per international guidelines. Using patient specific cutting guides and repositioning guides is now a regular procedure for wafer-less surgery. Surgery first approach with aligners is performed with the help of simulation software which would not have been possible with the traditional laboratory procedures with the same standard result.

However, all that glitters is not gold. It seems that we are more carried away by the Key opinion leaders (KOL) with their play of mesmerizing words for any specific products or protocols in conferences and workshops. They create a psychological feeling of “fear of missing out” (FOMO) where you are left with the apprehension of missing out important information and lagging behind in this world of competitors. Not all KOLs sell snake oil but we as an expert should always analyze it and provide evidence-based practice rather than appliance centered orthodontics.¹ Once self-ligating braces were marketed to have the advantages of treating cases faster and extraction case could be easily done by non-extraction by so called arch development. Now, patients have been brain washed with misinformation about clear aligners about how the treatment is faster, better, and more importantly no follow ups are needed. Lysle E. Johnston beautifully said, no one dies with an anchorage loss and when everything “works”, and nobody “dies” evidence-based practice is for many an unnecessary elaboration that serves only to interfere with the orderly flow of commerce.² However, as someone said, “wrong is wrong even if the majority is doing it”. We should have a very positive attitude towards evidence-based practice. Knowing the preferences of the patients, your clinical experiences and research-based treatment delivery is the best combination for any treatment.

With digital technology embracing orthodontics, it's high time we should change the curriculum of our residents such that they are aware of the latest technological advancement taking place in this field. However, it is our responsibility to guide our future orthodontist for evidence-based practice no matter what the technology is.

Now, regarding the question asked by my relative, I told her that I am not sure about the future, but currently most treatment with aligners also needs constant monitoring at least in few months intervals and results are not as good as braces. Aligners are definitely in the race with braces, but braces are here to stay for the moment.

REFERENCES

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