How We Got from There to Here and Back

Edward H. Angle dominated orthodontic armamentarium, diagnosis and treatment planning for almost a half century until Charles Tweed successfully challenged his mentor’s non-extraction mantra. The ensuing diagnostic regimens used by Tweed, however, proved to have serious limitations and clearly resulted in the extraction of too many teeth. This caused a subsequent deterioration of soft tissue appearances of patients that neither they nor their doctors liked. This article will describe and illustrate how new extraction techniques differ qualitatively from those of Angle, and how these techniques offer patients and doctors less invasive and more comfortable therapies which do not jeopardize facial appearances.

Introduction

For the first third of this past century, orthodontics found itself dominated by one man, Edward H. Angle, with the resultant intellectual stagnation that arises from such monomanical control. This recognition in every way detracts from Angle’s contributions – notably his clear and simple classification system along with the edgewise bracket. Both of these inventions have endured for a century, and that is no mean achievement in any scientific discipline. Nevertheless, orthodontists’ unquestioning acceptance of his limited diagnostic and treatment planning regimens hindered the advancement of this discipline more than it helped, and the last half of this past century was spent trying to overcome the stuper of the first half.

Angle’s influence continued until an apostate student of his, Charles H. Tweed,1 had enough courage and objectivity to challenge Angle’s non-extraction scheme. It wasn’t a tremendous leap of intellectual power. Tweed simply and honestly recognized that when 100% of your patients relapsed, there might be something wrong with the diagnosis and/or treatment planning.

Dr. Tweed acted appropriately in the face of this challenge - quite unlike the ancient dentist who chided a young colleague who was describing his meticulous technique of endodontic filling to the monthly assembly of dentists. The old man explained his own technique that used a simple mattock sharpened with a pocketknife and then jammed into the canal. When the young dentist asked if a lot of these root canal fillings didn’t subsequently fail, the older man replied, “Every damn time!”

Dr. Tweed tired of those orthodontic abscesses and, unlike his peers, sought to correct the deficiencies he saw in Angle’s philosophy. Some would say that he overcorrected, but that said, we must pay homage to anyone who has the skill and tenacity to successfully challenge a mentor and his minions. Tweed’s success brings to mind the remark of C.S. Lewis, who said, “No genius is so fortunate as he who has the skill and ability to do well that which others have been doing poorly.”

Nevertheless, I don’t think that Tweed would have ever been able to deliver his paper describing his extraction technique had Dr. Angle still been alive. Angles influence over the society that bore his name was too immense to permit such hubris from a young upstart. But as Samuelson, the MIT economist, once noted: “Science progresses slowly – funeral by funeral.” And so it was and is in orthodontics.

Nonextraction Philosophy

Aside from the edgewise bracket and the classification system, Angle’s most enduring legacy has been his belief in nonextraction therapy. Angle had unsuccessfully experimented with premolar extractions while using his ribbon arch appliance, but he never solved the problem of parallelizing the roots to prevent the extraction spaces from opening. If he couldn’t do it, then, ergo, no one else could, and this resulted in a virulent opposition to any extractions and an insistence upon enlarging the arches to accommodate all of the teeth.

This dogma stayed dominant for several decades until Tweed advocated the extraction of premolars based on his diagnostic triangle, which was the first systematic treatment planning strategem orthodontists had. Tweed received corroboration simultaneously from another former Angle protégé in Australia, Raymond Begg,2 who had studied aborigines and concluded that nature intended for enamel to wear. He decided that orthodontists could mimic nature by extracting teeth prior to orthodontic therapy. The Tweed and Begg Extraction Philosophies eventually prevailed and remained uncontested for some time. Several years past before Holdaway3,4 published his articles that suggested the soft tissue as the determining feature of diagnosis. This disputed Tweed’s narrow diagnostic regimen that focused on the mandibular incisor and totally neglected the soft tissue. Tweed’s triangle set in motion a trend that emphasized more prudence in the extraction of teeth. Soon others added their discoveries regarding soft tissue and the maxillary incisors as main determinants of diagnosis and treatment planning.5-7

From the inception of this specialty, with Dr. Angle, diagnosis never had too much importance because everyone received the same nonextraction treatment with the same expansive appliance. The marvel of it all is that the collection of orthodontic records never became important. A few months ago an orthodontist boasted that since invoking a different treatment regimen, he was treating 98% of his patient’s nonextraction. One was tempted to ask if he still took records because with diagnostic certainty such as that, records are clearly redundant. Orthodontists shouldn’t waste patients’ time and money taking impressions, cephalometric X-rays or doing treatment simulations if all treatment plans are essentially the same. One doesn’t need orthodontic records to come to such a preconceived conclusion.

Obviously, this one-size-fits-all treatment planning didn’t benefit patients a hundred years ago, and it doesn’t in our own age. But such simplicity continues to hold enormous appeal for many orthodontists. Orthodontists pride themselves in being scientists, and without doubt they receive good training in the scientific method; but it takes very little anecdotal information to eclipse the scientific judgment of many in the profession. Albert Szent-Györgyi was probably more right than he knew when he said, “The brain is not an organ of thinking but an organ of survival like a claw and fang. It is made is such a way as to make us accept as truth that which is only advantage.”

No matter how spectacularly orthodontic therapy changes, it will benefit our patients minimally if we do not have a concomitant improvement in our diagnostic and prognostic knowledge. This remains the number one imperative for those who practice orthodontics. Orthodontists should view any new therapy unaccompanied by equally sophisticated diagnostic knowledge suspiciously. Patients have already received far too much orthodontic treatment and far too little diagnosis.

Instrumentation

The first attempts to correct malocclusions used simple large arch wires ligated to the malposed teeth. Pierre Fauchard of France developed the precursor of the modern appliance - expansion arch (Figure 1). When Angle launched the ribbon arch bracket, he had already started work on the edgewise bracket primarily as a supplement to his ribbon arch appliance. Nevertheless, the edgewise bracket did not suddenly spring full-grown from Angle’s fertile mind, but slowly evolved with several alterations (Figure 5). When Angle realized that this bracket could deliver three-dimensional control of the teeth with horizontal, one directional placement and simultaneous engagement of all the teeth, he changed the bracket several times until he achieved the #47 (Figure 6) in 1928. It received early and enthusiastic endorsement.
from dental clinicians throughout the Unit- ed States and eventually eclipsed other use- ful orthodontic appliances such as the McCoy open tube appliance, the Atkinson uni- versal appliance and the Johnson twin wire attachment.

**Figure 5:** Angle’s many iterations of the edgewise bracket

The universal application and durability of the edgewise bracket confirmed Angle’s immodest claim that it offered the “latest and best in orthodontic mechanisms.”

**Figure 6:** Angle’s 447 edgewise bracket, “the latest and best in orthodontic mechanisms.”

**And Back Again**

The publication of Frankel’s work with functional appliances illustrated significant enlargement of dental arches and reawak- ened an interest in nonextraction therapy. Nevertheless, Frankel’s mechanics required the use of removable appliances, and that didn’t resonate well with many orthodontists or their patients. After a brief flurry of interest in the United States, few clinicians continued to use the Frankel appliance on a regular basis.

Nevertheless, the successful use of ortho- pedic appliances alerted orthodontists to the possibility of increasing arch widths and arch perimeters with minimum forc-...
The 7th Saudi International Orthodontic Conference

The conference itself started on the 19 Feb, with the opening ceremony where Prof Suliman Alomaran, Head of SOS welcomed the distinguished guests, delegates, speaker and society members to this year’s meeting. He also summarized the achievements of the SOS Board through the last 3 years. This year is the last year of the board and handing over of responsibility will be given to the newly elected board at the end of the meeting. The opening ceremony was followed by an important lecture titled “Critical evaluation in orthodontic appliance” by Prof W. Proffit where he gave a summery of his 50 years experience with fixed appliance and what are the changes that the orthodontists could expect in the coming years.

This was followed by an interesting lecture of “Overview of CLII treatment” which was given by Dr. Tamer Buyukaych in which he presented the clinically proven technique for treating CLII cased backed by number of cases that he treated himself for ranging from children all the way to adulthood and which technique has shorter time than the other.

Since the temporary anchorage device is to get much attention these days, Prof W. Proffit later on the day presented a lecture on “TNC experience with screw and mini plate”, thus giving the pros and cons of them with keys of success illustrated by spine multiple cases showing perfect results and decreasing the need for surgical intervention with Orthodontic.

The first day was wrapped up by Dr. Robert Boyd lecturing on “Orthodontic and Esthetic consideration in planning and placement of Restorative Implants” where he stressed on the more demanding of esthetics by patients since Orthodontic by it self could not fulfill all patient demands such as having a brighter and wider smile, he showed several cases with restorative treatment giving the final touches to a good Orthodontic treatment.

He also compared between cases treated by Orthodontics alone and one treated by multi approach of Ortho-Resto-Perio which really made a bigger difference in those patients smiles.

On the second day of the conference Prof William Clark is the inventor and developer of the famous twin block functional appliance which is the most used one to correct CLII skeletal discrepancy in growing individuals. In his lecture Prof Clark took the audience through the different steps of diagnosis and treatment utilizing twin blocks with minimal and/or no need for fixed appliance.

He stressed the importance of patient selection, motivation and instruction to the success of treatment with such devices. The audience interacted with this lecture since some of them had there doubts about this method but Prof Clark explained to them the keys for success using this method.

Dr. Robert Boyd concluded the morning session with a talk on “How can aligners be used for complex Orthodontic cases” ranging from extraction cases to correcting of much hard vertical cases in adults with good prognosis and lasting stability.

The afternoon session was dedicated to future promising subjects in Orthodontics such as distraction cheliplasty where Dr. Abdullah Aliaidi spoke from his surgical background as a Craniofacial Surgeon how this minimal procedure could improve the smile dramatically without the need to more complex Orthognathic surgery involving cutting of bone or augmentation. The audience listened with attention on how to select cases for such a procedure and how the procedure is done in a very short time under one hour in some cases. Later that day Dr. Sarah Alaqeeb spoke on “Constraints on tooth growth by developing alveolar bone” where she pointed the causes of such problem, which used to be thought that the main cause behind it is primary teeth.

Then Dr. Hedwah Moawad took the stage to speak on “Genetic in Orthodontic” and how the advancement in this field could lead to prediction and reducing malocclusion.

The 2nd day of the conference concluded by a lecture Given by Prof Clark where he spoke on “New horizons in Orthodontic and Dentofacial Orthopedics”, he highlighted the latest development in Orthodontic thus his talk raised lots of questions from the audience about the technique presented and how to use them for the best benefit for the patient and practitioner. This led to the time scheduled for the lecture to extend to more than ½ hour then the scheduled time.

The conference was followed by a post conference with the title of “The Forces System: Advance in fixed appliance technique. New technique for lingual arch developing” where Prof Clark spoke for over 6 hours over the whole day on his new invention Forces System which make correcting transverse problems and CLII easier through utilizing the lingual arch developing technique which gives faster and more repayable results as was explain by Prof Clark in comprising to fixed appliances placed from the buccal side. Accompanying the 7th conference was an exhibition dedicated for Orthodontic products and new advancements in this field with over 14 local and international companies which captured the interest of all 500 participants who attended the conference. Overall the 7th Saudi Orthodontic conference was up to the level of expectation and gain satisfactions on venue, speakers, and overall organization which showed clearly from the feedback of the attendees. With warm smiles the participants said farewell to each other hoping to see one another around the same time next year at the 2014 annual meeting.

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Reminiscences moments with unrepeatable celebrity

by Dr. Khaled Abouaseeda, BDS, MS, Orth.-cert.

I am constantly striving to implement the critical initiatives required to meet and exceed my reader's expectations. I am driven by my burning desire to be influential in introducing scientific excellence embodied in a prominent professor who is creating a superior environment and leading the way in the world of dentistry. It is my interest to have the honor to introduce with grace and respect Prof. Dr. Abbas Zaher, a celebrity who is accustomed to worldwide attention.

I will definitely focus in my valuable interview on the professional artist who with his tremendous knowledge and vast experience is well known for creating natural and flawless smiles on peoples faces after reshaping their dental flaws bringing the face into better proportion with his talented excellence thus bringing new and not just their teeth but their whole being. But I will also stress on his remarkable prominent role as an actively regarded professor in the Faculty of Dentistry Alexandria University. I was blessed to be one of his students in Alexandria who learned from his endless priceless moral lessons from his challenging professional experiences, updates about new launches, his ethics in orthodontic principles of medical practices thus setting an unrepeatable example for highest standards of performance and commitment. I cannot disregard mentioning his extreme graciousness and friendliness extended to all his students allowing them to reach continuous learning, team motivation, awareness and appreciation of the value of orthodontics and its welfare in Alexandria and the whole region.

You have definitely thought of other career paths before considering orthodontics, would you talk to us about them?

This is a story, I always like to tell!! When I was in high school, I was dreaming of a career in hotels and restaurants management. I like domain of customer's service, and I had a lot of guidance to exercise my passion. I guess my fate directed me to the Faculty of Medicine for one year and later on to the Faculty of Dentistry. Exercising dentistry was instrumental in this decision. My passion and desire to satisfy my patient's (customers) main concerns. I think it is very important to customize your treatment plan to cater to the patient's needs rather than only what you see as necessary treatment.

Were there any teachers or other people who stand out in your mind as encouraging you to pursue this career?

Professor Mahmoud El Hadary, the Dean of the Faculty of Dentistry and later the President of Alexandria University, was instantaneous in guiding me to exercise dentistry as a career and throughout my studies in the Faculty. He encouraged me to be involved in the students' activities and motivated me to participate in several_of these activities. His supportive advice in choosing to study orthodontics put me on the first steps in my current path. Professor Samir Abouseada, the Head of the department of Orthodontics in Alexandria University, at that time, influenced my early years in the department. He had a vision for the specialty and was instrumental in the development of the service of the profession and the specialists. Since then I have assumed a role in the Egyptian Orthodontic Society board of directors. The one person, who had great impact on my professional attitude and perceptions, was Professor Samir Bishara. He was the first person who believed in my success starting from my PhD studies in the University of Iowa in USA. He implanted the scientific seed in my way of thinking in orthodontics and in my way of handling cases. He was the first person who was my first and eternal mentor, these three prominent teacher were my godfathers in my professional life.

It would be highly appreciated if you give us your view point on the impact of our profession in reshaping their dental flaws bringing the attention.

I am most concerned with scientific research that will directly apply to our clinical work. I am most interested in the enamel conservation during and after orthodontic treatment. My studies include, prevention of de-calcification, treatment of early enamel de-calcification, bacterial growth and control during treatment, enamel color change after treatment and what would influence it, 3D imaging and its applications, orthognathic surgery and finally multidisciplinary treatment.

What is the best part of the work you do?

I enjoy tremendously my clinical work. Dealing with patients and changing their lives is my passion. I am lucky to have my work as my hobby. Teaching is another passion of mine. It is a pleasure to interact with the residents; they are always amicable and keep me motivated. On the other hand, I don’t like the administrative part of working at the faculty. I dislike reports and completing forms.

What is your goal for the Egyptian Orthodontic Federation for the next 2 years and your plans to achieve them and cultivate your profound knowledge in the field of orthodontics?

My goals for the Egyptian Orthodontic Society include; establishing the already agreed upon Egyptian Board of Orthodontists, in addition, to devise a awareness plan for the general public about the benefits of orthodontics and the treatment of orthodontic treatment and the training and studies in order to become specialized in orthodontics. These two ambitions guarantee the maintenance of our members and large amount of funds.

There are conflicting studies that were rarely clear-cut, would you like to talk about any of them?

What contemporary scientific issue are you most concerned about now?

If you were to define orthodontics, how would you complete this sentence: “Orthodontics is the science that allow the practitioner...”

I am proud of my achievement as professor; it was a long and strenuous path. One of the most rewarding moments was when I finished my PhD, at that day I earned the title “Doctor” which is my favorite designation.

Conclusion:

With objective assurance and consulting activities, he definitely added value to the title “Professor” which is interchangeable with the name of Dr. Abbas Zaher who is considered an eminent Orthodontist in Alexandria in particular and worldwide in general.

I am always trying to approach my mission from the broadest perspective by consistently exceeding expectations and setting standards for excellence in proving services for my readers. I favor introducing celebrities and ideas with a global or regional impact fueled by people committed to delivering exceptional results and creating extraordinary brands. I will try to maintain tightly focused on continuously adding value by providing objective and innovative ideas. All of our strategies and actions will be molded by a set of core values that are shared by each and every associate. Perfection and capturing our reader’s attention has always been our desired destination in this section.