

Evidence-Based Clinical Orthodontics: Learning from Success and Failure of Orthodontic Cases

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Biography

Dr. Dan Rinchuse had been involved in clinical practice, orthodontic education and research for 42 years. He is currently Professor and Program Director at Seton Hill University Advanced Education Program in Orthodontics and Dentofacial Orthopedics, Greensburg, Pennsylvania USA. He earned his DMD, MS (pharmacology), MDS (Orthodontics), and PhD (Higher Education) from the University of Pittsburgh. He is a Diplomate of the American Board of Orthodontics, and an editorial consultant for numerous journals including the American Journal of Orthodontics and Dentofacial Orthopedics, The Angle Orthodontist, and the European Journal of Orthodontics. Dr Rinchuse has authored over 80 peer-reviewed articles and co-authored a book: Miles PG, Rinchuse DJ, Rinchuse DJ. Evidence-based clinical orthodontics. Quintessence:Chicago, 2012.

Overview

The first part of this presentation shows the impact that orthodontics has on patients' lives. Next an evidence-base clinical practice perspective (EBCP) will be discussed. Finally, two cases will be shown to illustrate the value of supporting clinical decisions with an evidence-based perspective.

Learning Objectives:

The participants should be able to:

- Evaluate the benefits of orthodontics from an evidence-based perspective.
- Define evidence-based clinical orthodontics (EBCP) and how it may affect clinical decisions in orthodontics.
- Explain how orthodontics can have an impact on patients' lives.
- Evaluate whether functioning without canines presents any morbidity
- Discuss smile esthetics in relation to extractions, buccal corridors, and midlines.
- Discuss how quality evidence can impact clinical decision making.
- Explain Proffit's "Soft Tissue Paradigm" in juxtaposition to "Angle's Paradigm".
- Discuss how orthodontic stability may be enhanced.
- Evaluate how orthodontic finishing affects stability.

Outline:

- Introduction
 - We have a tremendous impact on our patients' lives

- Many children experience bullying because of their dental or facial appearance.
 - Orthodontics is mainly done for psycho-social reasons.
 - Persons with ideal smiles are considered more intelligent and have greater chance of finding a job.
 - We are blessed to be part of such a great profession as orthodontics. Mostly our patients are young healthy children with tremendous opportunities in their adult lives. Orthodontics can have a huge impact on their lives. Moreover, persons with ideal smiles may be perceived to be more intelligent and have a better opportunity to acquire employment. With this responsibility to affect orthodontic patients' lives in such a profound way, much is expected of us.
 - A frog in a well. Know the great ocean. Be open to new ideas, techniques, and evidence. Not the same old, same old.
 - Evidence-based clinical practice (EBCP)
 - Dr. Carl Sagan Standard- "Extraordinary claims require extraordinary evidence." Also iterated by Dr. Lysle Johnston, Jr.
 - Clinical experience is still very important, but in juxtaposition with a more comprehensive approach such as EBCP, which considers quality of evidence, particular clinical circumstances, patient-values, and clinical experience.
 - *"We cannot confidently infer anything about efficacy through the study of patients outside of a trial."* Dr. David Sackett
 - Efficiency, effectiveness and burden. Patient centricity.
 - More is not necessarily better.
 - ABO new Phase III "Oral Case Scenario" based exam starting February 2019. Two of three Tasks are an "evidence-based" perspective.
- Show two cases to illustrate the benefit of evidence in clinical decision making (*Because of time may only be able to show one case*).
 - Case #1
 - Be open-minded about different extraction patterns like the extraction of canines.
 - *"It is a sound principle to never extract a well-placed tooth in order to make space for a poorly positioned one. If a well-placed tooth is preserved, treatment time may be shortened considerably, and the result will be more certain."* Jacobs
 - Does functioning without canines predispose to future TMD?
 - Is occlusion a predisposition for TMD?
 - Canine protected occlusion? Evidence?
 - Case #2 (*time permitting*)
 - Openbite stability with extractions versus non extractions
 - Quality of the orthodontic finish is not related to stability.
 - Perfect may not ensure greater postretention stability.
 - Soft tissue paradigm- Proffit and Sarver.
- Summary and Conclusions:

- Other examples of how quality evidence may affect are clinical decisions in orthodontics:
 - Expansion
 - Extraction decisions
 - Extraction of 3rd molars
 - Early treatment
 - Timing of treatment
 - Retention protocols
 - “Accelerated” orthodontic treatment
- As a caveat: “EBO is still in its early stage, and the evolution, development, and organization of “orthodontic evidence- based care” is constantly being shaped and redefined by challenges of clinical applications and practical issues” (Mulimani 2017). Since many clinical questions have not, or cannot be answered from an evidence-based perspective, treatment uncertainties are unfortunately part of day-to-day practice. Therefore, it may be necessary at times to practice EBO with limited, or no available quality evidence.

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