

5<sup>th</sup> World Congress on  
**DENTISTRY AND MAXILLOFACIAL SURGERY**  
September 18-19, 2023 | Rome, Italy

Received Date: 06-24-2023 | Accepted Date: 06-27-2023 | Published Date: 10-20-2023

## **External apical Root Resorption differences between clear aligner treatment and fixed Orthodontic treatment**

**Arda Saribas, Irfan Karadede**  
Izmir Katip Celebi University, Turkey

External Apical root resorption (EARR), which has received a lot of attention for a long time, is a common idiopathic problem related to orthodontic therapy. Some of the factors that affect root resorption include genetics, age, gender, nutrition, the type of appliance, the amount of force applied during therapy, extraction or non-extraction, treatment length, and the distance the tooth or teeth migrate. When it penetrates the dentin, the uncertain circumstance of the loss of apical root tissue turns into an irreversible one.

The use of clear aligner treatment (CAT) has grown significantly in popularity over the past few years among orthodontic clinics. Given its inherent advantages in terms of comfort and aesthetics, CAT has gradually become a top option in treatment planning, especially among adults. Furthermore, because CAT is removable, patients may find it more convenient to maintain their oral hygiene with it.

There are various distinctions between clear aligner treatment and fixed orthodontic treatment (FOT) that, when viewed mechanically, could affect External Apical Root Resorption. First, intermittent forces are used in clear aligner therapy since the aligners must be taken out for dental hygiene and eating, whereas continuous forces are used in fixed orthodontic treatment. Second, compared to fixed orthodontic treatment, the degree of pressures and moments in clear aligner therapy may be different. Thirdly, forces are applied to the teeth during clear aligner therapy via attachments, whereas with fixed orthodontic treatment, forces are applied by brackets positioned in the centre of the tooth crowns.

Although EARR after orthodontic treatment may not be prevented by CAT, the incidence and severity of EARR may be less than what has been observed in studies in FOT.

### **References**

1. Brezniak, N., & Wasserstein, A. (1993). Root resorption after orthodontic treatment: Part 1. Literature review. *American Journal of Orthodontics and Dentofacial Orthopedics*, 103(1), 62–66. doi:10.1016/0889-5406(93)70106-x
2. Gandhi, Vaibhav, et al. "Comparison of external apical root resorption with clear aligners and pre-adjusted edgewise appliances in non-extraction cases: a systematic review and meta-analysis." *European journal of orthodontics* 43.1 (2021): 15-24.
3. Yi, J., Xiao, J., Li, Y., Li, X., & Zhao, Z. (2018). External apical root resorption in non-extraction cases after clear aligner therapy or fixed orthodontic treatment. *Journal of Dental Sciences*, 13(1), 48–53. doi:10.1016/j.jds.2017.09.007

### **Biography**

Arda Saribas was born in 1998 in Diyarbakir, Turkey. He graduated from Hacettepe University Faculty of Dentistry in 2021. After completing his master's degree, in 2021, he started his doctorate program in the Department of Orthodontics at Izmir Katip Celebi University. He is currently a PhD candidate at Department of Orthodontics, Faculty of Dentistry, Izmir Katip Celebi University. He is also a member of Turkish Orthodontic Society.

E: saribasarda@gmail.com