

CONFERENCE ABSTRACT

SCIENTIFIC MEETING OF VICTOR BABEȘ UNIVERSITY OF MEDICINE AND PHARMACY DOCTORAL SCHOOL AND ROMANIAN ACADEMY OF MEDICAL SCIENCES, DECEMBER 2016, TIMIȘOARA, ROMANIA

THE INDICATIONS OF POLYETHYLENE IN THE ORTHODONTIC FIELD

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Key words: polyethylene foils, thermoplastic retainers, orthodontic aligners

OBJECTIVES AND BACKGROUND

Our study aims to find multiple applications of the PETG foils in the orthodontic field and to evaluate the efficiency of aligner foils regarding strain values among different thickness categories.

MATERIALS AND METHODS

In office set-ups were fabricated for different orthodontic malocclusions. PETG foils, multi-layer foils, Clear Aligner expansion screws and acrylic components were used for the manufacturing of invisible appliances. Foil thickness and heat behavior, strain values, using special strain gauges and esthetics were taken into account. A 4 week recall was scheduled in order to observe the treatment progress regarding PETG appliances. Measurements were performed to determine to optimal foil thickness.

RESULTS

Dental alignment and expansion were observed in all cases. Regarding behavior to heat, the 1 mm foil presented only a small reduction in thickness compared to other foils and the strain values seem to be higher for the thinner aligners.

CONCLUSIONS

The orthodontic appliances made out of polyethylene provide good results due to rigidity and dimensional stability. We are still conducting continuous research in this area in order to obtain further data.



Graphical abstract: The thermoplastic aligner with a Clear Aligner screw for dental expansion (an in-office set-up was used for the manufacturing of the aligner)

REFERENCES

- 1.Thukral R., Gupta A. Invisalign: Invisible Orthodontic Treatment- A Review. Journal of Advanced Medical and Dental Sciences Research. 2015;3:42-44
2. Hyo WA. A new type of clear orthodontic retainer incorporating multi-layer hybrid materials. Korean J Orthod. 2015;45: 268–272.
3. Szuhanek C, Grigore A, Fleser T. The applications of thermoplastic materials in the fabrication of orthodontic aligners. Materiale plastic. 2015;52:385-387.