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Curve of spee: Speed of leveling using different orthodontic arch wire size and material – a randomized clinical trial

Aims:

To evaluate the efficiency of 3 different rectangular archwires in the correction of curve of Spee (COS), to record the time needed to level excessive COS in the mandibular arch, and to detect the root resorption in the lower anterior teeth associated with leveling excessive COS using the 3 different archwires.

Subjects and Methods:

Fifty-one subjects with excessive COS were included in this study. The subjects were randomly divided into three groups to level COS; Group one (17 patients): 0.017X0.025-inch stainless steel archwire. Group two (17 patients): 0.019X0.025-inch stainless steel archwire. Group three (17 patients): 0.021X0.025-inch Titanium molybdenum archwire. In the three groups, a 5mm depth reverse COS was inserted. Records consisted of study casts (pre-treatment and at each time point during the study) and peri-apical radiographs (at T0 and T5). Patients were followed up on monthly visits without removing leveling archwires where alginate impressions were taken for the lower arch.


Results:

The overall COS leveling was on average reduced by 3.930.77 mm, 4.870.73 mm and 4.040.88 mm in groups 1, 2, and 3, respectively ($P < 0.001$). Duration of excessive COS leveling was on average 6.070.47 months, 5.730.45 months and 6.250.22 months in groups 1, 2, and 3 respectively. Root resorption was detected in the lower right central incisor and canine mostly in group 3 subjects with the differences between groups were at ($P < 0.05$).

Conclusion: 0.019X0.025 SS archwire was the most efficient archwire in leveling COS with less time than the other 2 archwires. Root resorption of lower right central incisor and canine when 0.021X0.025 TMA archwire was used for leveling

Biography:

Yousef Nasrawi graduated from Jordan [University of Science and Technology](#) in 2015 and was among the top 10% of the batch. In the following two years, in 2016 Yousef Nasrawi received a membership in the [Royal College of Surgeons](#) – Ireland, and in 2017 Yousef Nasrawi received another membership in the [Royal College of Surgeons and Physicians](#) – Glasgow. In 2020 he have finished his Master's degree in [Orthodontics](#) from Jordan University of Science and Technology, and in the same year, he had obtained the American Dental Board. He is working currently in both clinical practices and in Jordan University of science and technology as a lecturer. His main interests are in orthodontics generally and in contributing to the advanced technological methods in biomechanics specifically.



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