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RELIABILITY OF MEASUREMENTS BETWEEN CONVENTIONAL CASTS, LASER SCANNED CASTS AND INTRAORAL SCANNING

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AIM:

The aim of this study was to compare tooth measurements obtained by two differently acquired digital model and conventional plaster cast measurements.

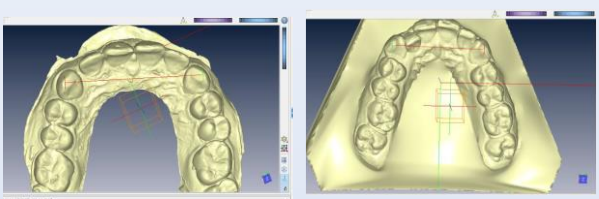
MATERIALS AND METHOD:

This study comprised 40 patients. Digital casts were obtained by two methods: Intraoral scanning by carestream intraoral scanner CS3600 powder free and model scanning by cast scanner Sirona InEos X5 scanner. Three study groups were obtained; Group 1: conventional dental casts, group 2: digital casts obtained with powder free intraoral scanning and group 3: digital casts obtained by cast scanner. Inter-canine and intermolar widths in addition to individual tooth measurements were made using Viewbox program for digital casts and digital caliper for the plaster cast.


Intraoral scanner used in the study

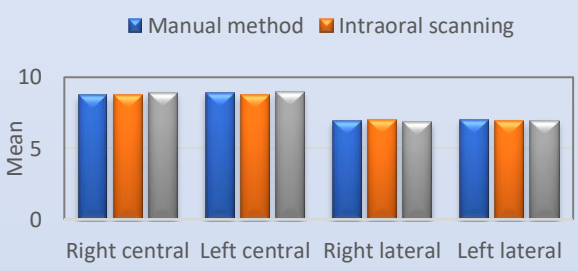

Cast scanner used in the study


Digital caliper used in the study

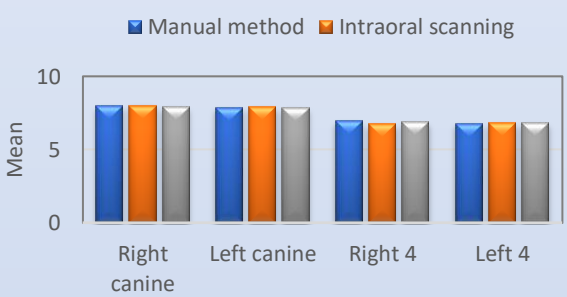

Example of digital casts measured by Viewbox program

RESULTS:

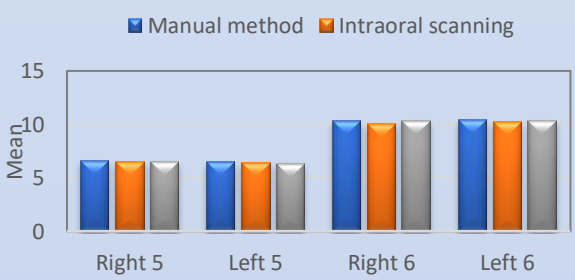
No statistically significant difference between three groups regarding all measurements had been found.



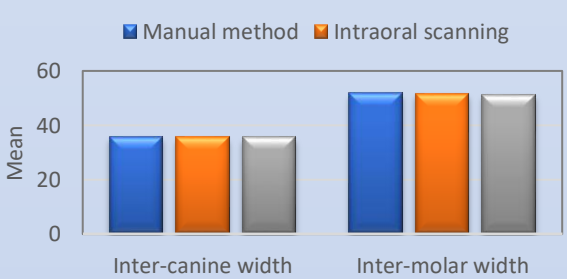
Comparison between the three studied groups regarding the central and lateral measurements in different studied groups.



Comparison between the three studied groups regarding the canine and 4th measurements in different studied groups.



Comparison between the three studied groups regarding the 5th and 6th measurements in different studied groups.



Comparison between the three studied groups regarding inter-canine and inter-molar width measurements in different studied groups.

CONCLUSIONS:

This study confirms that intraoral and model scanning are accurate and reliable as plaster casts poured into alginate impressions.