POSTER

SEM Analysis of marginal precision between digital and classical impressions in single crowns.

Area: Fixed Prosthesis

University/Department:
Padova/Neuroscienze

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Objective:
Since the pubblication of the first article describing the application of digital techniques, fifty years passed nowadays, the development of softwares and hardwares allows for a comparable, if not even better, results, versus the classical tecqniques.
The digital print, in particular, could be considered a method to improve the accuracy and sharpness of prosthetic restorations, via the standardization of the production process that, with traditional techniques,presents the physiological introduction of errors linked to the limit of the used materials.
The aim of this job is to evaluate the marginal accuracy of single crowns made with traditional prints and with the aid of an intraoral scanner based on a confocal microscope.

Materials:
Materials and methods
Thirty patients' teeth were selected to be restored with a single crown for upper premolar.
Once prepared the tooth, the prints were recordered with the classical mono-phase technique and with the intraoral scanner "intrascanZfx Zimmer".
After that, two metal copings were obtained from each tooth, then rebased with silicone, and via a position impression was possible to cast a model where the copings were latter cemented with Fuji cement.
Once cut in vestibular-lingual direction, they were examinated with SEM, taking 2 records for each stump.

Results:
The statistical analysis of the results relevates a mean of 79,23 for the classical impression techniques and a mean of 54,73 for the digital impression, with a standard deviation relevantly lower for the digital impression values.

Conclusion:
This allows us, accordingly to the licterature, to affirm that the digital impression techniques permits to enhance the marginal precision and, more important, to standardize the final results.
This underlines how the digital stream is a process capable of the remotion of the errors bound with the limits of the materials used in the classical technique.