DIFFERENT CLEANSING METHODS EFFECT TO SHEAR BOND STRENGTH OF CONTAMINATED ZIRCONIA

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INTRODUCTION

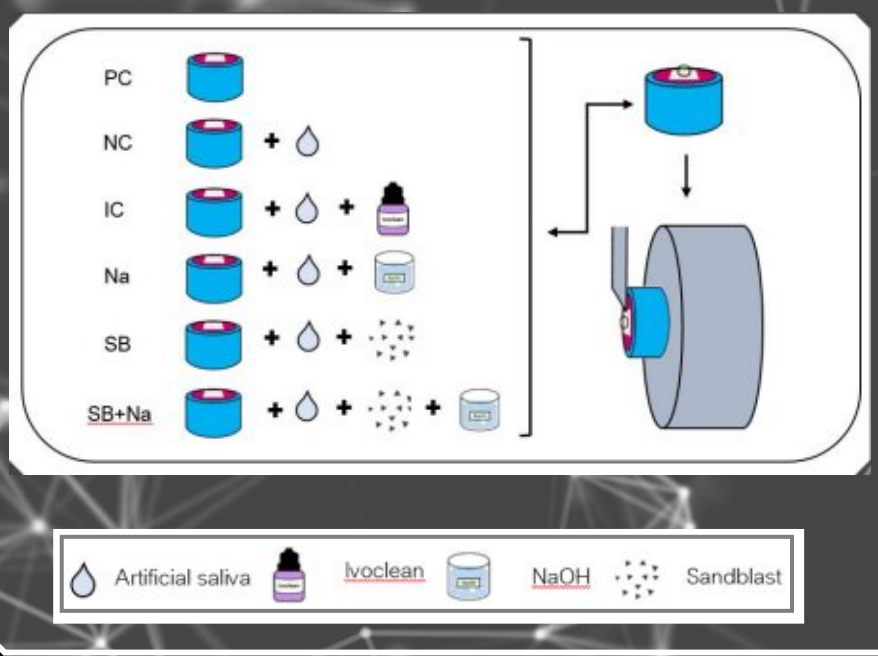
During try-in procedure, saliva contamination is unavoidable. This caused lower bond strength and shorter longevity of restoration. Thus, the surface should be decontaminated to recover the bond strength of restoration.

OBJECTIVE

To compare the effect of different cleansing methods on the shear bond strength (SBS) of zirconia restoration.

MATERIALS&METHODS

Sixty zirconia specimens were divided into six groups: non saliva contaminate (PC), contamination without surface cleansing (NC), Ivoclean® (IC), NaOH (Na), sandblasting (SB) and sandblasting followed by NaOH (SB+Na). The specimens were bonded to composite with Panavia F 2.0 and were stored in 37 °C distilled water for 24 hours. Specimens were subjected to a shear bond strength test. The data were analyzed by One-Way ANOVA and Tukey HSD. The zirconia surfaces were observed under stereo-microscope to identified mode of failure.



RESULT

Group NC showed the significantly lowest SBS values. Group SB and SB+Na were significantly higher than others ($p<0.05$) . However, SB and SB+Na showed no significant difference ($p>0.05$). Group PC, IC and Na showed no significant difference ($p>0.05$) but significantly higher than NC ($p<0.05$).

The mode of failure revealed mixed failure for the majority of group SB and SB+Na, while others revealed adhesive failure for the majority.

Group	*Mean ± SD* (MPa)	Mode of failure		
		Adhesive	Mixed	Cohesive
PC	6.10 ± 0.62 ^{B}	7	3	0
NC	4.62 ± 0.53 ^{C}	9	1	0
IC	6.16 ± 0.62 ^{B}	9	1	0
Na	6.29 ± 0.80 ^{B}	9	1	0
SB	14.14 ± 1.72 ^{A}	1	9	0
SB+Na	15.41 ± 1.65 ^{A}	0	10	0

The same superscript capital letter mean there are no significant different at 95% confidence level.

CONCLUSION

The saliva contaminated zirconia should be cleaned by Ivoclean®, 0.5 M NaOH solution, sandblasting or sandblasting followed by 0.5 M NaOH solution prior to cementation.

KEYWORDS

Cleansing methods, NaOH, Saliva contaminate,

Shear bond strength, Zirconia