152 Adhesive and resin influence on bovine dentin/porcelain shear bond strength

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This study evaluated the extrusion shear strength of bondings between feldspathic porcelain and bovine dentin. The adhesives evaluated included Single Bond (3M), Prime&Bond NT (Dentsply) e One Step (Bisco). The cements evaluated were RelyX ARC (3M), Enforce (Dentsply) e C&B (Bisco). Discs of bovine root dentin, 2,5mm thick, had the canal prepared with a standardized taper. Porcelain truncated cones were bonded into the perforations. The specimens were stored in 37°C distilled water for 48 hours and then the extrusion shear test was carried out. Data were accessed by ANOVA and Tukey test. The standard deviation and average (MPa) are shown on the table below. Considering the limitations of this study, it was observed that the combination between resin cement and adhesive interferes significantly on the extrusion shear bond strength. (FAPESP 99/11380-0).

	C&B	Enforce	RelyXARC
One –Step	7.0 (2.76) a,b,c	8.7 (2.3 9)a	8.9 (2.7)a
Prime&Bond NT	0.9 (0.36)	6.3 (1.18)a,b,c	5.3 (1.59)b,c
Single Bond	4.7 ().97)c	8.0 (1.96)a,b	7.2 (1.69)a,b,c

153 Effect of fluoride solution on the human salivary amylase

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The purpose of the present work was to study in vitro the effect of various concentration of NaF, and in vivo the effect of mouth wash of 0.05% solution.

Saliva was colleted under mechanical stimulation, after and overnight fasting away in the morning. After collection saliva was centrifuged at 12500 x g and the supernatant used for the analysis. In the in vivo experiment each individual made a mouth rinsing with 0.05% NaF solution and then saliva was colleted in various periods.

In the condition used in the present investigation, either in vivo rinsing the mouth with 0.05% NaF solution (11.9 mM) or using up to 500 mM of NaF in the incubation medium it was not possible to observe any effect of fluoride into the activity of human salivary amylase.

M. F. L.: Holds a scholarship from CNpQ

154 The effect of laminin on the phenotype of cells from adenoid cystic carcinoma

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We have demonstrated that a reconstituted basement membrane (Matrigel) plays a key regulatory role on the morphodifferentiation of cell lines derived from salivary gland neoplasms. Matrigel, however, is basically a mixture of laminin, type IV collagen, nidogen and perlecan. Thus, it is difficult to point out what component played the most significant role as a morphoregulatory molecule. Laminin is a good candidate for this role, since it is abundant in Matrigel, and possesses domains that are important for cell proliferation and differentiation. Moreover, it has been already demonstrated that laminin acts on normal salivary gland differentiation. All these evidences have prompted us to study the effect of laminin on the phenotype of cell lines derived from salivary gland neoplasms. Initially, we cultured a cell line derived from adenoid cystic carcinoma (CAC2) in a three-dimensional preparation of laminin. In this preparation, cells are grown within a gel of laminin, in a three-dimensional environment mimicking the neoplasia in vivo. The results obtained were analyzed by light microscopy, in sections stained by hematoxylin and eosin. Laminin induced formation of tubular and pseudo-cystic structures, similar to the structures that occur in adenoid cystic carcinoma *in vivo*. We suggest that laminin is a morphoregulatory molecule of the cells from adenoid cystic carcinoma

155 Withdraw strength of the Roach "T" bar clasp: short and a long minor connector

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For this purpose, 10 sample pieces were cast in a cobalt-chrome alloy for each situation, with na angle of convergence gauged in 0.25mm. Two types of acrylic resin-made artificial gum were built to standart the location, length, thickness, curvature radius of the short and long minor connector as well as the depth of approaching of the "T"bar clasp. In order that the withdrawal of the sample pieces, a transversal bar, perpendicular to the applied longitudinal axial strain was made.

The results abtained were submitted to the statistical analysis, and it was concluded that the Roach "T" bar clasp with a long minor connector show less resistance to withdrawal by axial strain when compared to a short minor connector.

156 Tensile bond strength to dentin treated by air abrasion and Er:YAG and Nd:YAG lasers

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This in vitro study evaluated by tensile test, the dentin bond strength of the new bond system (Excite) in association to a composite resin (Tetric Ceram). Twenty-eight extracted third molars were equally divided in 4 groups. The dentin surfaces of each specimen were exposed using a sandpaper # 400 and 600 and submitted to 4 kinds of treatment before the acid-etched with 35% phosphoric acid, bond agent and composite resin. The group 1 (control) was treated with sandpaper, the group 2 with air abrasion system (Mach 5.0 Plus – Kreativ, Inc.) at a pressure of 60 psi, using aluminium oxide particle size of 27,5 µm, in micropulse mode, the group 3 was treated with Er:YAG laser (KaVo Co.) with a handpiece 2051, focused, with energy per pulse of 200 mJ and repetition rate of 2 Hz and the group 4 was treated with Nd:YAG laser (ADT) with power of 1 W and repetition rate of 10 Hz with a fiber of 320 µm in contact After the stored in 37°C water for 48 hours, the specimens were submitted the tensile test in Instron Machine at a cross head speed of 0.5 mm/minute. The results of the tensile bond strength were expressed in MPa. The average of the tensile bond strength found for each group in crescent order were: Group 4 (Nd:YAG) = 5,03 MPa; Group 2 (Air abrasion) = 6,7 MPa; Group 1 (control) = 7,8 MPa and Group 3 (Er:YAG) = 8,52 MPa.

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157 Afferents to the caudal sub-nucleus of the trigeminal tract of the trigeminal nerve.

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Nociceptive information originating from the face and part of the cranium is transmitted, via the trigeminal nerve, principally to the nucleus of the spinal trigeminal tract, caudal sub-nucleus (Sp5C), and from here to innumerous areas of the neuroaxis. A general map of afferents neurons to the dorsal horn of the spinal cord (homologous to Sp5C) has been established by utilization of neuroanatomic techniques, including retrograde neuronal tracers. However, a similarly detailed approach has not been applied to the Sp5C. The purpose of the present work was, therefore, to study in detail, the origins of the Sp5C afferent fibers, using the retrograde neuronal tracer Fluoro-Gold (FG). Eight male Wistar rats (250-300g) were anaesthetized and submitted to estereotaxic surgery to enable iontophoretic deposition of FG in the Sp5C. After 15 days, the rats were anaesthetized and perfused, initially with 0,9% NaCl solution followed by borate-buffered 4% formaldehyde solution. Brain post-fixation was carried out in the same fixer (12h), crioprotected and cut in 30µm sections. Sections were incubated with anti-FG (1:10,000, 48h), washed (KPBS) and incubated with biotinylated secondary antibody (1:200, 1h), washed and incubated with avidin-biotin-peroxidase complex (1:200, 1h). The reaction was developed using diaminobenzidine and intensified with OsO_4 (0,005%). In six animals the FG was restricted to the Sp5C, these been used for analysis. Immunoreactive perikarya were found in oralis and interpolaris sub-nucleus of the trigeminal tract, periaquedutal gray substance, gigantocellular nucleus of the reticular formation, nucleus of the solitary tract, parabrachial nucleus, paraventricular nucleus of the hypothalamus and primary sensory cortex. The preliminary findings have shown the existence of afferents common to both Sp5C and dorsal horn of the spinal cord and the existence of afferents limited to Sp5C.

158 Hardness of remanescent dentin after caries removal by different methods.

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The criteria used to remove decayed tissue is still controversial in the literature. The aim of this study was to evaluate the KNOOP hardness of the remaining dentin as a parameter of removal efficiency, after different methods to remove caries. Fifteen deciduos molar teeth with mesial or distal decays were sectioned in two halves. The fragments were randomly divided into three groups: 1- caries removal in low speed handpiece guided by the hardness consistency of the dentin when probed; 2- removal method as the group 1 guided by Caries Detector™ 3- chemo-mechanical caries removal with Carisolv™. The cavities of each tooth half was restored with a composite resin, embedded in acrylic resin, ground and polished. Five indentations in each of five standardized distances (100, 200, 300, 400 and 500µm) were made along the axial wall of the restoration in a mesio-distal direction, in a total of 25 indentations. ANOVA showed statistical difference among the methods and distances. The interaction between these two factors was not significant. The methods could be ranked by the Tukey test($p<0,05$) as follows: Group 1 (70,5±23,9) = Group 2 (70,1±17,2) > Group 3 (74,0±17,5). In all methods the mean hardness in the distances of 300 and 500µm (70,8±19,5) was statistically higher than the hardness measured at 100µm (62,2±20,2). Therefore it was concluded that: 1) The mean hardness of the remaining dentin was lower at 100µm from the restoration interface; 2)The hardness of the remaining dentin was lower when the Carisolv method was used. Supported by FAPESP and CNPQ.

159 Evaluation of hardness and flexural strength of packable composite resins.

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The aim of this study was to evaluate the VICKERS hardness and the flexural strength of the different composite resins. The materials used in this study were Surefil, P60, TPH and ALERT. Ten specimens for each resin were made with reduced dimensions (10x2x1mm). After storage in distilled water for 24h at 37°C, a three-point bending test (flexural strength), according to the ISO4049 standard, was carried out in a KRATOS tester at a s crosshead speed of 0,5min/min and after fracture the data was recorded. Fragments of each material (n=5) were embedded in acrylic resin, sandblasted and polished. Eight Vickers indentation were made in each specimen using a HMV 2000 Shimatzu microdurimet with a load of 100g applied for 15s. The data from both tests were submitted to a ANOVA and Tukey test ($p<0,05$) and the results are shown in the table bellow.

Test/Materials	P60	Surefil	TPH	ALERT
Vickers hardness	111,5 ± 9,48	107,19 ± 14,6	105,8 ± 4,43	95,41 ± 9,34
Flexural Strength (Mpa)	176,9 ± 15	158,3 ± 37,4	163,08 ± 24,76	137,6 ±15,6

Based on the results, it was concluded that there was a statistical difference between P60 and ALERT concerning the hardness ($p= 0,0210$) as well as the flexural strength ($p=0,0061$). Supported by FAPESP and CNPq.