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A Study of Descriptive Characters in Deciduous Lower Second Molar Crowns. HUYNH K. KHANG* and HOANG T. HUNG (Faculty of Odontostomatology HoChiMinh City, Vietnam).

The objectives of this study are to observe and evaluate selected characters of deciduous lower second molars compared to those of permanent lower first molars reported in a previous study. Dental casts obtained from Vietnamese children aged 3-4 (90 male and 80 female) were observed and compared to those of Vietnamese adult aged 18 - 25 (101 male and 70 female) for Groove pattern (GP), Cusp number and Protostylid according to JORJENSEN (1955), ZUBOV (1968), TURNER (1970) and DAHLBERG (1950) criterion.

Group	GP	cusp number (%)			Presence of protostylid(%)
	Y (%)	C6	C7	C8	
Vietnamese children	100	15.83	95.83	2.10	70.72
Vietnamese adult	88.62	10.31	1.54	0	6.3

- The constant maintaining of groove pattern "Y" (Dryopithecus pattern) with more than 5 cusps, i.e. having C6 and/or C7, a high frequency of Protostylid in deciduous lower second molars may be considered as primitive morphological characters.
 - C8 is for the first time discovered in deciduous lower second molars between C5 and C6. Simultaneous presence of C5 and C6 is the criterion to determine C8. A suggested name for this eighth cusp would be *Tuberculum Distale*.

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3-year-old children's facial soft tissue morphological characteristics using lateral cephalometry. DANG T. N. HOA*, TRAN T. NGA, HOANG T. HUNG (Faculty of Odontostomatology, HCMC University of Medical Sciences).

The purpose of this study is to analyse the morphological soft tissue profile characteristics in a group of 3-year-old Vietnamese children (40 male and 40 female) selected from a sample of 287 children (136 female and 151 male). Based on soft tissue landmarks and reference planes (Frankfort, ANS-PNS, Go-Me) positioned on lateral cephalogram tracings, thirty four parameters representing vertical and horizontal dimensions of the nose, lip and chin as well as some common angles were assessed. The means and standard deviations as well as morphological characteristics' differences were then calculated. Consequently, upper and lower face height were found to be significantly greater in male than in female, however, there was no difference between the upper and lower face ratio. Nose thickness was similar between males and females though nose height and length is greater in males than females. With the exception of thickness of lip at B point, the upper and lower lips were found to be thicker and longer in males. There was no difference in chin thickness between the two genders.

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A Longitudinal Study of the Development of Dental Arches in 3 to 3.5 year-old Children. NGO T.Q.LAN*, TRAN P. THAO and HOANG T. HUNG (Faculty of Odontostomatology- Univ. of Health Sciences, HCMC, Vietnam)

The aims of this study are: to determine the mean values of dental arches dimensions in Vietnamese children aged 3 and 3.5, to evaluate horizontal and antero-posterior growth of upper (U) and lower (L) arches. Dental casts of 256 Vietnamese children (135 male and 121 female) dotted with sound dentition and free of face anomalies were measured at the age of 3 and then at 3.5 for arch length and width (16 measurements according to Chang H.P., J.Osaka Dent. Univ. 1989; 22: 101-110) using a Boley gauge.

Mean (SD) mm	3 years old			3.5 years old		
	Boys	Girls	P(t-test)	Boys	Girls	P(t-test)
U. arch width A.	30.4(1.7)	29.8(1.6)	0.00	30.7(1.6)	30.0(1.5)	0.00
U. arch width P.	44.1(2.5)	43.1(1.9)	0.00	44.5(1.9)	43.5(1.8)	0.00
U. arch length A.	9.0(1.2)	8.6(1.1)	0.01	9.1(1.1)	8.7(1.0)	0.02
U. arch length P.	21.1(1.5)	20.6(1.4)	0.00	21.4(1.3)	20.8(1.5)	0.00
L. arch width A.	23.6(1.7)	23.1(1.7)	0.02	24.1(1.9)	23.6(1.6)	0.04
L. arch width P.	36.7(1.6)	36.3(1.7)	0.02	37.3(1.6)	36.7(1.6)	0.01
L. arch length A.	5.9(0.9)	5.8(0.8)	0.3	5.9(0.9)	5.8(0.8)	0.7
L. arch length P.	18.2(1.1)	17.9(1.3)	0.2	18.3(1.0)	18.2(1.2)	0.7

- Deciduous arch dimensions are significantly larger in male (p<0.05). Growth rate and growth tendency regarding all dimensions of the deciduous arch is similar in both genders.

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Evaluation of Compoglass F and Hytac Aplitip in Primary Teeth. LEUNG SK* and WEI SHY (Faculty of Dentistry, The University of Hong Kong).

This study compared the clinical performances of two compomers, Compoglass F Vivadent) and Hytac Aplitip CESPE), in restoration of primary teeth. A group of 32 children (aged 3½-8 years) with 56 bilateral matched pairs of carious primary teeth were included. The ratio of class I to class II restorations was 1.3:1. All restorations were clinically evaluated with the USPHS criteria on colour matching, marginal discoloration, marginal integrity, recurrent caries and anatomic form at baseline and after 6 and 12 months. Photographs and impressions were taken for indirect evaluation at each recall and to estimate the occlusal wear. At 6 months, 112 restorations were evaluated. There was a statistically significant difference between the two materials in colour matching (Alfa: 96.5% and 80.7% respectively, p=0.0156). No significant difference was found in all other parameters. For indirect evaluation using photographs, both materials showed a statistically significant difference in marginal discoloration between the baseline and 6 months' recall (Compoglass F: Alfa: 100% and 86% respectively, p=0.006; Hytac Aplitip: Alfa: 100% and 82.5% respectively, p=0.0013). In addition, there was no dislodgement, post-operative sensitivity and non-vitality as reported. In conclusion, both materials showed satisfactory clinical performances after 6 months. It is planned to follow these restorations at 6 monthly intervals for at least 24 months.

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WITHDRAWN

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Evaluation of Bone Grafting Materials *in vitro*. W.J. Chang¹, C.Y. Wang², C.H. Wu¹, S.Y. Lee¹, C.T. Lin¹, (¹ School of Dentistry and Graduate Institute of Oral Rehabilitation, ²Department of Microbiology and Immunology, Taipei Medical College, Taipei, Taiwan)

Lots of bone grafting materials have been developed and utilized in clinic. The four bone grafting materials which are utilized in clinic commonly: β-tricalcium phosphate (β-TCP), hydroxyapatite (HA), non-ceramic hydroxyapatite (NCHA) and demineralized freeze-dried bone allograft (DFDBA), were evaluated and compared. Above materials were co-cultured respectively with fibroblasts or immersed in DMEM media as the experimental groups. The cytotoxicity was determined by MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) assay. After 1, 3, 5, and 7 days, the media with extract as test solution were applied in MTT assay. The morphologic study was examined by Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM). The result showed that cell growth was inhibited at the 3rd and 5th day in NCHA group that fibroblasts co-cultured with NCHA group. The fibroblasts aggregation around the β-TCP, DFDBA and NCHA particles were observed in the 3rd and 5th day. The TEM study showed phagocytosis effect of fibroblasts in β-TCP groups. The results indicated the metabolite of fibroblasts cultured with NCHA inhibited the fibroblasts growth. The earlier aggregation of fibroblasts around the bone grafting materials will enhance the wound healing and materials fixation after bone transplantation surgery.

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Distribution and composition of subgingival plaque along the periodontally involved root surface. Dae-hyun Lee*, Kwan-yat Zee & L.P. Samaranyake (Faculty of Dentistry, The University of Hong Kong)

The aim of this study was to investigate the distribution of periodontitis associated microorganisms at different locations along root surface of extracted periodontally involved tooth. A total of 24 subjects, 22 to 63 years of age (mean 44 years) with at least one tooth with advanced periodontal involvement scheduled for extraction were recruited. Subgingival plaque was sampled with paper points (P) before extraction and with curette at coronal (C), middle (M) and apical (A) locations after extraction. Each sample was dispensed in reduced transport fluid (RTF) and cultured on non-selective media (Enriched Trypticase Soy agar) using anaerobic techniques to obtain pure isolates. After subculturing, all the pure isolates were identified based on Gram stain, serotolerance, esculin hydrolysis, nitrate reduction, α-glucosidase, β-galactosidase and N-acetyl-β-glucosaminidase activity and N-benzoyl-DL-arginine-2-naphthyl-amide hydrolysis. All the 24 sampling teeth showed grade II to III mobility and the pocket depths ranged from 5 to 12 mm (mean 8.4 mm) with a recession ranging from 0 to 5 mm (mean 2.4 mm). Results showed that mean colony forming unit (CFU) of P, C, M and A samples were 1.4x10⁶/ml, 1.0x10⁶/ml, 0.8x10⁶/ml and 1.7x10⁶/ml respectively. There were increasing percentage of Gram negative anaerobic rods (49% to 70%) and Gram negative anaerobic cocci (1% to 11%) from C to A level while the Gram negative and Gram positive facultative rods progressively decreased (24% to 7% and 11% to 2% respectively). Statistical analysis was performed by F-test based on ANOVA using SAS/GLM procedure. Significant differences (p<0.05) in the proportions of Gram negative anaerobic rods, Gram negative facultative rods, Gram positive facultative rods and Gram negative anaerobic cocci between O and A samples were also noted. There were no differences between P and M samples; and P and A samples. *P. gingivalis* was the more frequently found species with increasing frequency of detection from C to A level. The common species at O, M and A levels were *Fusobacterium* spp., *A. viscosus*, *Wolinella* spp., *P. melaninogenica*, *P. gingivalis*, *P. intermedia* and *A. naeslundii*. The species exclusive to each level were: *A. actinomycetemcomitans* at O level; *B. forsythus* at M level; and *Selenomonas* spp. and *Veillonella* spp. at A level. (This study was supported by HKUCRCG Grant 10201287)

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Neovascularization of Composite Demineralized Intramembranous Bone Matrix. S.H. CHAY*, M. WONG* and A.M. RABIE (Orthodontics, Pathology, University of Hong Kong)

Composite autogenous bone and demineralized bone matrix (DBM) produced more bone than autogenous bone graft alone (Rabie and Wong, 1998). Thus, this work was designed to investigate the correlation between neovascularization and enhanced bone induction ability of the composite intramembranous bone grafts (IM-DBM_{DBM}) and autogenous intramembranous bone grafts (IM). Thirty two rabbits, 32 defects were used in this experiment. 16 defects were grafted with IM bone alone and the other 16 defects were grafted with composite IM-DBM_{DBM}. Eight rabbits, 16 defects were used as controls. In the control group, 8 defects were left empty (passive control) and the other 8 defects were filled with skin collagen (active control). Tissues were retrieved on days 1, 2, 3, 4, 5, 6, 7 and 14 for immunohistochemical staining for Angiogenesis related Endothelial Cells. Immunohistochemical evaluation revealed a positive staining for Angiogenesis related Endothelial Cells by day 2 post-grafting for IM-DBM_{DBM} bone graft and day 3 post-grafting for IM bone graft. Budding of micro-vessels from host tissues were seen by day 3 for IM-DBM bone graft and day 4 for IM bone graft. Appearance of small blood vessels into the newly formed matrix were seen at day 4 and day 5 respectively. Results of this study demonstrated a more rapid vascularization in the composite IM-DBM_{DBM} when compared with the autogenous IM bone graft. This earlier vascularization could be a contributing factor to the enhanced osteogenic ability of the composite IM-DBM_{DBM}.