

- 38** **Change of Periodontal Ligament in Teeth with Experimental Periodontitis Accompanied by Occlusion Trauma**  
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- The destruction of periodontium can be accelerated in teeth with periodontitis accompanied by occlusion trauma; but the mechanism is not ascertained. The purpose of this study was to investigate the relation between periodontitis and occlusion trauma for a further step. Monkeys were selected as experimental animals to induce slight and severe periodontitis artificially and occlusion trauma following. Changes of the periodontal tissue, especially the periodontal ligament, were observed by means of clinic, X-ray photograph and pathology. By means of clinic the loss of attachment was observed in severe periodontitis teeth with occlusion trauma but none in slight ones. By means of X-ray photograph the angle absorption of alveolar bone was observed and the quantity of absorption was increased with the intensity of inflammation. What was observed by means of pathology in teeth with slight periodontitis accompanied by occlusion trauma was the lesser horizontal fibers with new capillaries produced, disorder of the arrangement and absorption of periodontic fibers with a great many of inflammatory cells immersed and new capillaries produced, obvious absorption of alveolar bone and slight absorption of cementum. In severe ones what was observed was the lessening and cracking horizontal fibers, disorder of the arrangement and obvious absorption of periodontic fibers and absorption of cementum reaching to dentine. The results of this study suggest that when horizontal fibers are destroyed by inflammation with occlusion trauma, the traumatic force may cause the disorder of arrangement, crack and necrosis of the fibers. At the same time, inflammation may invade the periodontal ligament and cause destruction of periodontic fibers and absorption of the alveolar and cementum, which accelerates the destruction of the periodontal tissues.
- 39** **Manage Endodontic Problems with Mineral Trioxide Aggregate**  
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- Several in vitro and in vivo studies have shown that Mineral trioxide aggregate, or MTA, is biocompatible, and promotes regeneration of the original tissues when it is placed in contact with the dental pulp or periradicular tissues. This clinical study was to demonstrate some of clinical uses of MTA. Seven cases were carried out endodontic therapy in which MTA was used to manage clinical problems. Five cases were treated using MTA to develop apical barrier in teeth with immature apexes. Comparing with traditional apexification, the management this problem with MTA required only one or two visits. The perforation in furcation was repaired in other two cases. Seven cases have varying follow-up periods from six months to one year. In each case, MTA allowed bone healing and elimination of clinical symptoms. MTA may be an ideal material for certain endodontic procedure.
- 40** **Effect of Ornidazole on the Treatment of Periodontitis and Pericoronitis**  
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- To evaluate the effect of Ornidazole on the treatment of periodontitis and pericoronitis. 30 periodontitis and pericoronitis patients were treated by the tables of Ornidazole, and 30 patients treated by Tinidazole served as control group. The clinical effect and the rate of killing anaerobic bacteria were observed. The effective rate was 83.3% in rest group and 73.3% in control group respectively. There were no significant differences between two groups ( $P > 0.05$ ). Ornidazole shows obvious therapeutic effects on infection with anaerobic bacteria.
- 41** **The Cost-effectiveness of ART and Resin Sealing for Caries Prevention**  
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- Pit and fissure sealant has been widely used for caries prevention. More often, ART is used in caries treatment. That ART was used to prevent caries has been reported in recent years. However, the cost-effectiveness of ART that is used for caries prevention still remains unclear. The aim of present research is to compare the cost-effectiveness of ART with that of resin sealant in caries prevention for primary school children. Two hundred and twelve children aged 7-9 years old took part in this research. The molar of every child on one side of the mouth was sealed by light-cure resin sealant (Concise, 3M) and by chemically firmed glass ionomer (Katac-molar, ESPE) on the opposite side. The routine methods were used to seal teeth and the cotton rolls and suction were used to keep dry. The time for manipulation, amount of materials and times for repetition in the program were recorded. The remaining rate of sealed material on the teeth was checked in the eighth month after treatment. The results indicated the time for manipulation, cotton rolls and times for repetition in sealant was individually 3.54 (min), 2.52 and 0.04 (times) and were individually 3.18 (min.), 1.13 and 0.03 (times) in ART. The material of ART was more expensive than that of resin sealant. Respectively, the costs of glass ionomer and resin sealant were 3.77 and 0.93 (Yuan). However, the cost of equipment used in sealant were much more expensive than that used in ART. Furthermore, there was not significant difference between sealant and ART in the remaining rate. The results suggest that ART is more cost-effective than sealant on caries prevention.
- 42** **The Effect of Egg-yolk IgY on Streptococcus Mutans in vitro**  
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- The study is to investigate the effect of specific egg-yolk IgY on the growth and adherence of *S.mutans*. In this study, hens were immunized by *S.mutans* B29-33, which was a high-express GTF stain. The specific IgY was isolated from immunized hens' egg yolk. *S.mutans* MT8148 were incubated with IgY in different concentration on the surface of glass and enamel in vitro. *S.mutans* were observed under microscope and spectrophotometer. The artificial dental plaque on the surface of enamel was observed at day 1, 3, 5, 7, 14 and day 28 under SEM. The results show that the specific egg-yolk IgY did not inhibit the growth of *S.mutans*, but the long chain of cells was observed. The adherence of *S.mutans* to the glass surface decreased after using the specific IgY. The artificial dental plaques appear different morphology with or without specific egg-yolk IgY. The specific egg-yolk IgY can aggregate *S.mutans* and suppress the adherence of *S.mutans* to the glass. It also can affect the morphology of dental plaque formation in vitro. kelseyjiang@hotmail.com
- 43** **The Clinical Use of Bi-anti Collagen Membrane in Guided Tissue Regeneration**  
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- The purpose of this present research was to compare the physicochemical properties and clinical effects of Bi-anti Collagen Membrane with that of the original collagen membrane in order to find an optimal collagen membrane for GTR. By testing the swelling ratio, Young Modulus and the time of degradation, the results indicate that the modified membranes have lower swelling ratio (test group:  $3.697 \pm 0.162$ ; control group:  $4.190 \pm 0.195$ ), higher Young Modulus (test group:  $168.60 \pm 20.38 \text{ g/mm}^2$ ; control group:  $54.77 \pm 15.46 \text{ g/mm}^2$ ) and much stronger resistant to breakdown (Bi-anti collagen membrane: Not being degraded in the 14 days; control group: 8-10 hours). Then in the clinical experiment, ten patients (twelve teeth) were treated with Bi-anti collagen membranes and the original collagen membranes respectively. Six months after operation, changes of clinical parameters and the quantity of alveolar bone around the involved teeth in X-ray were observed to evaluate the difference of clinical effects between two kinds of collagen membranes. Using a t-test, the loss of clinical attachment in the group of Bi-anti collagen membranes changing from  $6.304 \pm 2.446 \text{ mm}$  to  $3.714 \pm 1.826 \text{ mm}$  is compared with that in the group of the original collagen membranes changing from  $6.000 \pm 0.927 \text{ mm}$  to  $5.025 \pm 1.562 \text{ mm}$  after six months ( $p < 0.05$ ). Digora image processing show more obvious regeneration of alveolar bone in test group (test group:  $25.06 \pm 13.61$ ; control group:  $11.25 \pm 12.73$   $P < 0.05$ ). The results of experiments show the modified collagen membranes have better properties. They can satisfy the need of GTR to more extent and better the clinical effects of GTR. However, further extensive clinical research should be needed for the shortage of cases in this present research. shuhuan@yahoo.com
- 44** **The Cyclophosphamide Lead Amelogenin to Diffuse to Pulp Side and Induced Hard Tissue Regeneration in Rat Incisor**  
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- To discuss the relationship between the amelogenin diffused to pulp side and dentin generation using cyclophosphamide. 3-week-old rat was selected and injected in cyclophosphamide all in one time for inhibiting the development of dentin in incisor, and then studied the relationship between varies of pulp tissue generation and amelogenin by histology and immunohistochemistry. Control group: Mature enameloblast exhibited special perical periodic change: SA legion and RA legion presented alternately. Experiment group: lots of cells because swelling in the pulp side of incisor in rat. Odontoblasts were present with degeneration necrosis or disappearance. Enameloblast layer was lined directly with pulp tissue due to odontoblast disappearance. Some osteoid dentin was present near the pulp side. The positive material of amelogenin immunological reaction was observed around, new tissue and in matrix, some new hard tissue formed in labial side of pulp, no new hard tissue was present near lingual side of pulp. Amelogenin has effect of inducing pulp tissue to form hard tissue. It could provide experiment evident for investigating the inducing relationship of enamel and dentin and studying induction ability of amelogenin.
- 45** **The Influence of Acid-etch on Compression of Composite Resin-glass Ionomer Cement**  
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- To observe the influence of acid-etch on compression of composite resin-glass ionomer cement filling. 1. To make molds: 40 stainless steel molds were made and divided equally into 2 groups. The diameter of each mold was 5mm. In each group, there were 10 the 2mm high molds and 10 the 4mm high molds. 2. To place glass ionomer cement (GIC) into the molds: According to user's guide, GIC was mixed and placed into the 2mm high molds. These molds were divided equally into two groups A and B. 3. To deal with the surface of GIC: Group A: 5 minutes after filling the surface of GIC was routinely acid-etched (30% phosphate for 20 seconds), washed for 20 seconds and dried with tinier draft for 30 seconds. Then bond agent was put on it. Group B: the surface of GIC was washed for 20 seconds, dried with tinier draft for 30 seconds. 4. To fill light-cured composite resin into the molds: After putting the 4mm high mold on above 2mm high mold, light-cured composite resin was filled into mold and lit with curing light for 1 minute. 5. To preserve the molds: the molds of two groups were preserved in 37°C-distilled water for 24 hour. 6. To measure compression of composite resin-glass ionomer cement filling: these molds were put on INSTRON experiment machine. The curves of LOAD-DISPLACEMENT were drawn automatically by computer while the crosshead speed was 2mm per minute. The first peak value of the curve was broken LOAD. The compression of A group is stronger than B group ( $p < 0.01$ ) by T test. The result suggests that acid\_etch can raise compression of composite resin-glass ionomer cement.
- 46** **Clinical Research on Thermafil Obturation Technique**  
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- For the basic information about the use and development of new techniques, the study explored the effects of Thermafil obturation technique in vivo. Sixty premolars with the diagnosis of apical periodontitis in Endodontics department of stomatological hospital Wuhan university were divided into two groups, of which there were thirty teeth individually and eighty root canals overall. Measure the working length with Auto ZX and clean and shape the root canals using double flare technique with SS-K file in two groups. Then Thermafil obturation technique and lateral condensation technique were used in each group. Preoperative and postoperative radiographs of each tooth were taken. Obturation time, incidence of pain and quality of obturation were compared. 11 cases of overfilling were found in Thermafil group, while 3 cases in lateral condensation group. The number of pain during obturation in Thermafil group was 4 and 2 cases were found in lateral condensation group. The average obturation time of Thermafil obturation technique was significantly quicker than lateral condensation technique. Thermafil obturation technique is faster and simpler when comparing with lateral condensation technique, though overfilling is more likely to appear in the technique.