

● Oxidized cellulose membrane을 replemineform hydroxyapatite 및 calcium carbonate와 혼합사용시 성견치주조직의 치유에 미치는 영향

고호경 · 채중규

연세대학교 치과대학 치주과학교실

Oxidized cellulose membrane과 porous replemineform hydroxyapatite 및 porous resorbable calcium carbonate 이식이 치주조직의 재생과 재부착에 미치는 영향에 관해 알아보기 위하여 성견 소구치 치근에 치주염을 유발시키고 치은박리소과술만 시행한 경우(대조군), 수술후 membrane(Surgicel®)을 넣은 경우(실험 I 군), membrane과 replemineform hydroxyapatite(Interpore-200®) 이식재를 넣은 경우(실험 II 군), membrane과 calcium carbonate(Biocoral®)를 넣은 경우(실험 III 군) 등 4군으로 나누어 각 1, 3, 6, 12, 26주 후의 치유결과를 조직학적으로 비교관찰하여 다음과 같은 결과를 얻었다.

1. Oxidized cellulose membrane은 1주에 대부분이 흡수된 소견을 보였으며, 3주 이후에는 관찰되지 않았다.
2. 접합상피는 대조군에서 1주에 notch부위까지 이동을 보이고 26주까지 지속되었으며, 실험 I 군은 1주에, 실험 II, III 군은 3주에 notch 상부에 이르렀으나 모든 실험군에서 전실험기간동안 notch 하부로의 근단이동은 관찰되지 않았다.
3. 결합조직내의 염증세포침윤은 1주에서 대조군과 실험 I 군에서 실험 II, III 군에 비하여 심하게 나타났으며 3주부터 모든군에서 감소하여 6주 이후에는 차이점이 나타나지 않았다.
4. 신생백악질형성은 대조군에서는 전실험기간동안 관찰되지 않았으며 실험 I, II, III 군에서는 6주부터 관찰되어 26주에는 모든 실험군의 notch 상방까지 형성되는 소견을 보였다.
5. 결합조직섬유의 치근과의 배열양상은 대조군에서는 치근과의 부착이 나타나지 않았으며 실험 I, II, III 군에서는 6주까지 치근과 나란히 주행하고 12주부터 일부 수직배열되어 26주에는 치밀해지는 소견을 보였다.
6. 신생골은 대조군에서는 전실험기간동안 관찰되지 않았으며, 실험 I 군의 6주에서 notch 부위의 골형성이 나타나고, 실험 II, III 군에서는 3주부터 치조골과 인접한 이식재료편 주변에 생성되기 시작하여 26주에는 notch 상방까지 형성되는 소견을 보였다.

● 치주질환시 치은조직내 림프구 및 NK세포의 분포에 관한 면역조직화학적 연구

김선옥 · 권영혁 · 이만섭

경희대학교 치과대학 치주과학교실

저자는 염증성 치주질환에서 치은상피 및 결합조직내의 T림프구, B림프구, T림프구의 아형 및 NK세포의 분화와 질환별 활성도를 규명하고자 정상, 치은염, 성인형 치주염, 유년형 치주염, 급속진행형 치주염환자의 치은조직 25예를 채취하여 단클론 항체를 이용한 면역조직 화학적 염색법을 이용하여 다음과 같은 연구 결론을 얻었다.

## The effects of oxidized cellulose membrane in conjunction with replemineform hydroxyapatite or resorbable calcium carbonate on the periodontal healing responses in dogs

Ho Kyung Koh, Jung Kiu Chai

Dept. of Periodontology, College of Dentistry, Yonsei University

The ultimate goal of periodontal therapy is to fully reconstruct the dental attachment apparatus. Commonly used techniques for treatment of intrabony defects include a combination of root planing, curettage and grafting. To prevent the apical migration of epithelial cells, the technique of guided tissue regeneration is used.

The aim of this study is to evaluate the effects of oxidized cellulose membrane in conjunction with porous replemineform hydroxyapatite or porous resorbable calcium carbonate in the periodontal therapy of dogs.

Experimental periodontitis was induced by the ligation of orthodontic elastic threads in the premolars and 1st molar of 5 adult dogs for 10 weeks.

4 types of regenerative procedures were performed as follows :

- 1) flap operation(control group)
- 2) flap operation with oxidized cellulose membrane covering(experimental group I)
- 3) flap operation with porous replemineform hydroxyapatite grafting and oxidized cellulose membrane covering(experimental group II)
- 4) flap operation with porous resorbable calcium carbonate grafting and oxidized cellulose membrane covering(experimental group III)

Thereafter, dogs were serially sacrificed at the 1, 3, 6, 12, and 26 weeks, and the specimens were prepared, and stained with hematoxylin-eosin stain for the light microscopic evaluation.

The results of this study were as follows :

1. The most of oxidized cellulose membrane was resorbed at 1 week, and did not observed after 3 weeks.
2. Junctional epithelium(JE) of the control group migrated to the notch at 1 week and continued through the experimental period. In the experimental group I, JE migrated toward the notch at 1 week, and in the experimental group II and III, at 3 weeks. But in all experimental groups JE did not reach to the notch through the experimental period.
3. In the aspects of the inflammatory cell infiltration, control and experimental group I showed severe aggregation than experimental group II and III at 1 week. But it decreased from 3 weeks and there were no differences among all groups from 6 weeks.
4. New cementum was not formed in control group, but observed from 12 weeks in the experimental group I, and 6 weeks in the experimental group II and III. And it grew over the notch at 26 weeks.
5. In the control group, long junctional epithelium covered the treated root, to the notch but in

the experimental groups periodontal tissue was healed with new periodontal ligament from 6 weeks and become close to 26 weeks.

6. New bone was not found in the control group, but in the experimental group I it was found at 12 weeks. In the experimental group II and III, new bone was formed around the implanted material near the alveolar bone from 3 weeks and grew over the reference notch at 26 weeks.

## The distributions of lymphocytes subpopulations and natural killer cell in periodontal disease

S. U. Kim, et al.

Dept. of Periodontology, College of Dentistry, Kyung Hee University

This study was performed to determine the distribution and activity of T lymphocyte, B lymphocyte, T lymphocyte subset, NK cell in the inflamed gingiva and connective tissue of periodontal lesion. Gingival tissue was obtained from 25 patients with healthy, gingivitis, adult periodontitis, localized juvenile periodontitis, rapidly progressive periodontitis.

Serial cryostat sections displaying a cross section of gingiva were labeled with monoclonal antibody for (1) pan T cells, (2) T cytotoxic/suppressor cells, (3) T helper/inducer cells, (4) pan B cells, and (5) NK cells were developed using an avidin-biotin-peroxidase system. Lymphocyte population were enumerated in repeatable fields from sulcular and oral section.

Following results were obtained.

1. Pan T lymphocytes were most abundant in the sulcular epithelial zone of gingivitis and rapidly progressive periodontitis specimen ( $p < 0.01$ ).
2. Pan B lymphocytes increased significantly from healthy to gingivitis to periodontitis specimens ( $p < 0.01$ ).
3. T helper lymphocytes were most abundant in rapidly progressive periodontitis and gingivitis specimens than in healthy specimens ( $p < 0.01$ ).
4. T suppressor lymphocytes were most abundant in rapidly progressive periodontitis specimens, followed adult periodontitis, gingivitis, juvenile periodontitis specimens ( $p < 0.01$ ).
5. The ratios of T helper/T suppressor cells in periodontitis tend to be decreased slightly, there were no significant differences between the mean ratios of T helper/T suppressor cells from diseased and healthy tissues.
6. Natural Killer cells increased significantly from healthy to gingivitis to periodontitis specimens ( $p < 0.01$ ).
7. The amounts of lymphocyte and natural killer cells in sulcular epithelium were larger than in oral epithelium zone ( $p < 0.01$ ).