

● 진행성 치주염시에 구강세균의 치주조직 침투에 관한 전자현미경적 연구

안성모 · 최상묵

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진행성 치주염을 가진 환자 13예에서 구강세균의 치주조직 침투와 세균성 치조골 흡수와의 관계를 알기 위하여 전자현미경으로 미세구조를 그 관찰하였는데 그 결과는 다음과 같다.

1. 13예 중에서 6예에서는 세균의 침입이 없었고 나머지 예에서는 세균의 침입이 있었다.
2. 치주낭 하부상피에서는 기저세포의 확장된 세포간극에서 구상 또는 간상의 세균이 발견 되었다.
3. 직하부 결합조직에서는 탐식구의 용소체에 의하여 포식되고 있는 세균이 발견되었고, 파괴된 세포들과 소실된 교원섬유 사이에서 침투된 세균이 발견되었다.
4. 흡수되고 있는 치조골과 그 주위의 조섬유세포 사이에서 많은 세균의 침투가 발견되었다.
5. 진행성 치주염의 말기단계에서는 치주낭 하부 상피로의 세균침투가 가능하며 이로 인한 치주 조직의 파괴 및 세균성 치조골 흡수가 생긴다고 할 수 있겠다.

● Progesterone 투여 백서 치은상피의 투과성에 대한 실험적 연구

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저자는 자성 백서 40마리를 10마리씩 4군으로 나누어 실험군에 1일 1회씩 백서당 progesterone 0.2mℓ (progesterone 5mg/mℓ)를 근육주사하였다. 각 군별로 1일, 5일, 10일, 15일 주사한후, horseradish peroxidase를 변연치은에 15분간 도포한후 즉시 회생시켜 하악골을 적출한 다음, formaldehyde-glutaraldehyde 고정액에 고정시키고 0.5% 3,3-diaminobenzidine tetrahydrochloride 용액에 배양시킨후 10% trichloroacetic acid에 탈회시킨 다음 동결절편에서 조직화학적으로 관찰한 결과 다음과 같은 소견을 얻었다.

1. Horseradish peroxidase는 각화가 되어있는 치은상피는 통과하지 못했으나 각화층이 없는 부착상피는 통과하였다.
2. 부착상피를 통해서 침투된 horseradish peroxidase정도는 대조군과 실험군사이에 차이가 있었다.
3. 실험군에서 progesterone의 투여기간이 길수록 horseradish peroxidase의 침투 정도는 점진적으로 증가하였다.

Electronmicroscopic study on bacterial penetration in the periodontal tissues of advanced periodontitis

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Thirteen patients with advanced periodontitis who had teeth to be extracted were chosen.

In advanced cases of periodontitis with pocket depth over 8mm, severe tooth mobility and bone loss involving approximately two-thirds of the alveolar height as assessed radiographically, specimens of the buccal gingival tissue and of resorbing alveolar bone were taken.

1. The presence of bacteria in the periodontal tissues was observed in 7 cases out of a total of 13 patients studied.
2. Rods shaped and coccoid bacteria were observed in the widened epithelial intercellular spaces of the apical pocket epithelium.
3. In the underlying connective tissues, these bacteria were engulfed in the lysosome of the macrophages and found among damaged cellular fragments and collagen fibrils.
4. These bacteria were seen among the fibroblast and resorbing bone along resorbing alveolar bone surface.
5. Bacterial invasion of the apical wall of the pockets is possible in the final stages of advanced periodontitis.

An experimental study on the permeability of rat gingival epithelium treated with progesterone

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This study was undertaken to observe the effect of progesterone to permeability of gingival epithelium and horseradish peroxidase was used as a tracer.

Forty female rats were used in this experiment and divided into four groups. Each group consists of 10 animals.

Each rat was injected intramuscularly with progesterone 0.2ml (progesterone 5mg/ml) in experimental group.

On the first, fifth, tenth, fifteenth experimental day after infection, horseradish peroxidase was applied to the gingival margin for 15 molar portion was applied to the gingival margin for 15 minutes. At the end of application animals were killed by cervical dislocation. The mandible with 1st and 2nd molar portion was removed and immediately fixed in formaldehyde-glutaraldehyde fixative. The mandible was incubated in 0.5% 3,3-diaminobenzidine tetrahydrochloride and then decalcified in 10%

trichloroacetic acid.

Decalcified tissues were frozen to section and observed histochemically.

The following results were obtained. :

1. Horseradish peroxidase failed to penetrate through keratinized gingival epithelium, but horseradish peroxidase penetrated through junctional epithelium.
2. The penetration of horseradish peroxidase through junctional epithelium was different between control and experimental group.
3. In the experimental group, when the injection period of progesterone was increased, the penetration of horseradish peroxidase was increased.

Distribution of T, B lymphocytes and T-subsets in advanced periodontal disease

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The purpose of this study was to determine if any alteration were detectable in the proportion of a particular subpopulation in peripheral blood lymphocytes from patients with severe periodontitis.

28 patients in experimental group had clinical and radiographic diagnosis of severe periodontitis as verified by $GI > 1.5$ (by L oe) and Bone Score > 3 (by Dunning and Leach). 28 normal persons in sex and age-matched control group had healthy periodontal tissue.

The patterns of distribution of T, B lymphocytes and T-subsets in peripheral blood from all subjects were investigated by means of E rosette test, EAC rosette test and a battery of surface markers.

The results were as follows :

1. T lymphocyte proportions were significantly decreased in severe periodontitis patients when compared with the normal subjects ($P < 0.025$).
2. B lymphocyte proportions were slightly increased in severe periodontitis patients when compared with the normal subjects, but the difference was not significant.
3. T. M cell proportions were highly significantly decreased in severe periodontitis patients when compared with the normal subjects ($P < 0.001$).
4. T. G cell proportions were highly significantly increased in severe periodontitis patients when compared with the normal subject ($P < 0.001$).
5. Total numbers of white blood cells and lymphocyte proportions did not show significant differences between severe periodontitis patients and normal subjects.