

● 치은상피와 구강열구상피의 각화과정에 대한 전자현미경적 연구

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저자는 평균연령 24세의 남 13, 여 3의 치과대학생을 대상으로 하여 정상치은열구에 열구간 칫솔질을 30일간 하루에 3번씩 시행하게 한후 구강열구상피의 각화능력과 변화를 전자현미경적으로 관찰하였는데 그 결론을 다음과 같다.

1. 구강열구상피는 적당한 각화성향을 나타냈다.
2. 열구간 칫솔질을 시행한 후 광학현미경적으로 착각화 된 예에서는 구강열구상피의 중간층에서 Membrane Coating Granule이 확인되었다.
3. 열구간 칫솔질을 시행한 후 광학현미경으로 착각화 된 예에서는 구강열구상피의 중간층에서 규칙적이고 비교적 작은 Keratohyaline Granule이 확인되었다.
4. 열구간 칫솔질을 시행한 예에서 구강열구상피는 중간층에서 착각화층으로 변화되는 양상이 정상치은상피에서 보다 서서히 진행되었다.
5. 각화상피의 Membrane Coating Granule은 층판구조를 이루나, 열구간 칫솔질을 시행한 후 열구상피내의 Membrane Coating Granule은 막으로 둘러싸인 전자밀도가 강한 물질 또는 층판체를 보였으며 최외층과 그 하부층의 세포간극에는 Membrane Coating Granule에서 유래된 것으로 보이는 층판구조 혹은 부정형물질을 함유하고 있다.

● 맹출성 치은염의 광학 및 전자현미경적 연구

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맹출성 치은염과 정상성인의 치은염에 있어서 상피의 각화상태, 결체조직의 세포성분과 섬유성분의 성숙도, 염증세포의 종류 및 분포등을 광학현미경과 전자현미경으로 관찰하고자 맹출증인 영구치를 갖고 있는 소아 8명과 치은염을 갖고있는 성인 8명에서 Mühlemann and Son의 Sulcus bleeding index를 이용하여 그 염증정도가 0, 1, 2, 3인 치아를 각각 2개씩 모두 16개 치아의 협측치은을 치은연을 포함하여 5mm×5mm 크기로 절취하였다.

이조직을 즉시 이등분하여 한쪽은 광학현미경적 관찰을 위하여 10% formalin에 고정, 탈수, 파라핀포매를 거쳐 hematoxylin and eosin염색 및 Masson's trichrom 염색을 행했으며 나머지는 glutaraldehyde-formalin-phosphate 완충용액(pH=7.4)에 4℃에서 전고정한 후 2% osmium tetroxide로 2시간 고정한 다음 Epon 812로 포매, LKB 880 Ultratome으로 절편을 만들어 uranyl acetate와 lead citrate로 중염하여 JEM100B 전자현미경으로 관찰하였던 바 다음과 같은 결론을 얻었다.

1. 염증도가 증가함에 따라 맹출성 치은염, 성인치은염에서 모두 치은 상피의 두께가 증가하였고, Parakeratinization이 심하게 나타났으며 양측의 특징적인 차이는 없었다.
2. 결체조직의 교원섬유의 배열은 맹출성 치은염에서 더 규칙적이며 미성숙 교원섬유가 많이 나타났다.
3. 염증세포의 분포에는 뚜렷한 차이는 없으나 특히 성인치은염에서 형질세포가 다량 존재하였다.

Histologic study on accelerated reattachment by the chemical agents in laterally repositioned flap

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Laterally repositioned flap procedure for covering of denuded root surfaces associated with root demineralization for accelerated reattachment with cementogenesis to dentin using defatting agent and acids were performed in 8 mongrel dogs.

The animals were sacrificed at 1, 2, 3 and 4 weeks interval after surgery. Then the specimens were prepared and evaluated histologically.

1. The surgically exposed tooth root surfaces was approximately 8mm in average length, 4 weeks after surgery, control and citric acid groups the coverage of root surface was 6mm chloroform-methanol plus 0.6N HCl group was 5mm and chloroform-methanol plus citric acid group was 7mm. Since these findings are limited to only a few specimens, statistical relevance of healing response will have to await clinical healing trends monitored in larger group of experimental animals.
2. Histological finding on chloroform-methanol plus citric acid and citric acid specimen showed less epithelial migration than HCl and control groups.
3. On chloroform-methanol plus citric acid specimens the rapid and active formation of cementoid tissue and new bone were clearly noted at 3 and 4 weeks.
4. Chloroform-methanol plus citric acid and citric acid groups showed well orientation of new periodontal ligament at 4 weeks.
5. Resorption and formation of alveolar bone in chloroform-methanol plus citric acid particularly were active at 2 weeks than the remaining groups.

Electron microscopic study of the keratinization of the gingival epithelium and oral sulcular epithelium

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The purpose of this study was to investigate the keratinizing potential of human oral sulcular epithelium.

Sixteen dental students were selected for this study. Each subject brushed his teeth by intrasulcular tooth brushing method for 30 days 30 days after, the appropriate size of marginal gingiva including oral sulcular epithelium and lamina propria was excised for examining the light and electron microscopic view, and then excised gingival tissue was sectioned in three. One was for light microscopic

observation and the others were for electron microscopic observation. One part for light microscopic observation was stained with hematoxylin and eosin, another two parts for electron microscopic observation were prefixed with 3% Glutaraldehyde in Phosphate buffer solution for 24 hours. Tissues were rinsed with Phosphate buffer solution (PH 7.4) and postfixed in 1% Osmium Testroside for 2 hours. After tissues were dehydrated with graded ethanol series, they were embeded in Epon 812. After the oral sulcular epithelium and gingival epithelium were examined carefully, each part was sectioned 500 Å in thickness by means of Sorvall MT-2B Blum ultramicrotome, doubly stained with Uranyl Acetate and Lead Citrate and Examined with Hitachi Hu-500 electron microscope.

The results are as follows :

1. Oral sulcular epithelium will keratinized to some degree.
2. Membrane Coating Granules are present in the intermediate layer of intrasulcular brushed oral sulcular epithelium.
3. Keratohyaline Granules are present in the intermediate layer of intrasulcular brushed oral sulcular epithelium. And Keratohyaline Granule in intrasulcular brushed oral sulcular epithelium in regular in shape and rather small in size, and not associated with tonofilament.
4. Cytoplasmic changes from the intermediate layer to parakeratinized layer of intrasulcular brushed oral sulcular epithelium are less abrupt than those of gingival epithelium.
5. Membrane Coating Granule in the gingival epithelium bounded by a trilaminar membrane consists of lamellated bodies and Membrane Coating Granule in the intrasulcular brushed oral sulcular epithelium bounded by a trilaminar membrane consists of lamelated bodies or electron dense granules. In intercellular space between granular and cornified layer of the gingival epithelium and intermediate and parakeratinized layer of intrasulcular brushed oral sulcular epithelium, a lamellated body or amorphous substance, seemed to be derved from the dissociation of the contents of Membrane Coating Granule, are seen.

Light and electron microscopic of eruption gingivitis in human

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Gingival specimens from eight children and eight adults subjects were examined by light and electron microscopy. The findings are as follows :

1. Parakeratinization and thickening of gingival epithelium increased with the intensity of inflammation if both groups.
2. The arrangement of collagen fibers was more regular in eruption gingivitis than that of adult gingivitis, and eruption gingivitis showed abundant immature collagen fibers comparing with adult gingivitis.
3. The infiltration of plasma cells and lymphocytes was noted more markedly in the connective tissue of adult gingivitis than in the eruption gingivitis.