

冷凍切片을 Histozyne方法으로 多形核白血球의 peroxidase 反應을 檢鏡하여 白血球의 數的인 變化를 觀察하였다.

上記 實驗後 心臟을 穿刺하여 血液을 採取한 後 Park이 改良한 modified Blind well chamber method를 利用한 多形核白血球의 化學走性檢査를 施行하였다.

上記의 實驗結果 다음과 같은 結論을 얻었다.

1. 糖尿時 齒齦裂溝滲出液의 量의 Periotron數值로 實驗群에서 平均 12.75 ± 5.72 , 對照群에서 6.80 ± 3.12 로 實驗群에서 顯著히 增加하였다. ($P < 0.001$)
2. 齒齦組織內 多形核白血球의 浸潤은 實驗群에서 平均 7.15 ± 2.69 個, 對照群에서 16.05 ± 4.74 個로 實驗群에서 더욱 적게 檢鏡되었다. ($P < 0.001$)
3. 糖尿時 末梢血液에서의 多形核白血球의 化學走性은 細胞自體缺陷에 依한 機能不全이 實驗動物의 72.22%에서 體液性 缺陷에 依한 機能 不全이 實驗動物의 66.41%에서 發現되었다.
4. 糖尿時 齒齦裂溝滲出液의 量과 浸潤組織內 浸潤된 多形核白血球의 數는 相關關係가 없었다.

이와같은 結果는 多形核白血球의 化學走性機能不全으로 因한 것으로 思料되어 따라서 多形核白血球의 化學走性機能不全이 齒周疾患의 二次的인 病因子로서의 可能性을 認定할 수 있었다.

● 치주치료전후의 교합안전성에 관한 임상적 연구

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病的으로 移動된 齒牙의 咬合調整時期를 決定하기 爲하여 齒齦剝離搔爬術에 適用되는 中等度 以上の 齒周疾患에 罹患된 患者를 對象으로 齒周治療前, 齒周治療一箇月後, 二箇月後에 各各 咬合間記錄을 採得하여 咬合點을 分析하고, Gnathosonic system을 利用하여 咬合音波形 및 持續時間을 分析하여 다음과 같은 結論을 얻었다.

1. 中心咬合位의 咬合間記錄에서 齒周治療前後에 Supracontact, Contact, Nearcontact의 數에는 有意性있는 變化가 없었다.
2. Tapping時 咬合音波形은 治療前에 比해 左側은 治療一箇月後 27.3%, 二箇月後에 54.5%에서, 左側에서는 治療一箇月後에 36.4%, 二箇月後에 54.5%에서 變化되었다.
3. 咬合音持續時間은 左側에서 治療前 11.65msec.에서 治療一箇月後 10.52msec., 二箇月後 10.11 msec.로 減少되었고, 右側에서 治療前 11.52msec.에서 10.50msec., 10.02msec.로 各各 減少되었다.

以上の 結果로 齒周治療後 咬合의 安定性이 增加되어 가므로, 外傷性咬合은 齒周治療後 相當期間 觀察된 後에 判定되어야 한다.

An experimental study on the polymorphonuclear leukocyte chemotaxis and the gingival crevicular fluid in alloxan-induced diabetic rats

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The purpose of this study was to investigate the role of polymorphonuclear leukocytes (PMN) and gingival crevicular fluid (GCF) in the alloxan-induced diabetic rats.

Fifty Sprague-Dawley rats were divided into three groups which consist of twenty control group, twenty experimental (diabetic) group and ten serum donor group.

To initiate the gingival inflammation to the rats of control and experiment groups, topical application of 0.1% DNCB (Dinitrochlorobenzene) into the gingival crevice was performed.

After 24 hours, the amount of GCF was measured with Periotron and the population of PMN in the tissue of marginal gingiva was detected by the histozyne method.

And then peripheral blood PMN chemotaxis was assessed by the Park's modified Blind well chamber method.

The following results were obtained :

1. The amount of GCF from the experimental group (12.75 ± 5.72) was increased more than that of the control group (6.80 ± 3.12) significantly. ($P < 0.001$).
2. The population of PMN in gingival tissue detected from the experimental group (7.15 ± 2.69) was less than that of control group (16.05 ± 4.74). ($P < 0.001$).
3. There were 72.22% of chemotaxis dysfunction by the cellular defects and 66.41% of chemotaxis dysfunction by the humoral factors in the peripheral blood PMN from the experimental animals.
4. The amount of GCF and the number of PMN in gingival tissue were not correlated.

These results were suggested that chemotactic dysfunction of PMN in diabetic rats could be a evident factor of the pathogenesis of periodontal disease.

A clinical study on occlusal stability before and after periodontal treatment

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The purpose of this research was to determine the optimal time of the final occlusal adjustment on the pathologically migrated teeth.

Eleven subjects were selected in this study. They had suffered from advanced periodontal disease which were indicated for flap operation. The occlusal status was examined before the flap operation and rechecked one month and two months later.

For this study, the number of supracontacts, contacts, nearcontacts were analyzed on the interocclusal registration in centric occlusion and the wave form and duration of tapping sounds were analyzed using gnathosonic system in centric occlusion.

The results were as follows :

1. The comparison between pre-and posttreatment showed little changes in the number of the supra-contacts, contacts, nearcontacts.
2. In the left the wave forms were changed in centric occlusion in 27.3% and 54.5% of the cases, respectively, one and two months after flap operation. In the right they were changed in 36.4% and 54.5% respectively.
3. The duration of tapping sound in the left was decreased significantly from 11.65msec. of pretreatment to 10.52msec., 10.11msec., respectively, one and two months after treatment. In the right it was 11.52msec., 10.50msec., 10.02msec., respectively, before treatment, one and two months after treatment.

In view of the results above, occlusal stability was considered to have increased progressively with periodontal treatment and therefore traumatic occlusion should be judged after a considerable period of posttreatment.

Immunological study on changes with age of serum immunoglobulins reactive to *Actinobacillus actinomycetemcomitans* SNUDC 10-1

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For the investigation on the age related serum antibodies to *Actinobacillus actinomycetemcomitans* SNUDC 10-1, serum samples were obtained from umbilical cords infants(5 mos, 1 year), deciduous dentition, mixed dentition, periodontally normal puberties, periodontally normal adolescence, periodontally normal adults localized juvenile periodontitis and post-localized juvenile periodontitis.

Antibody activities to Aa SNUDC 10-1 were determined by an enzyme-linked immunosorbent assay (ELISA) using formalin fixed whole bacteria.

The results were as follows :

1. Serum IgG antibody to Aa SNUDC 10-1 of umbilical cord group was similar to that of deciduous dentition group(72.61 ± 35.14 Eu-G to 71.35 ± 22.78 Eu-G).

The 5 months infants group showed the lowest serum IgG antibody activities and serum IgG antibody to Aa SNUDC 10-1 were gradually increased from 1 year infants group to adult group.

2. Serum IgM antibody to Aa SNUDC 10-1 of umbilical cord group was revealed negative activity and the deciduous dentition, mixed dentition and puberty groups were the highest serum IgM antibody activities in the whole experimental groups(116.95 ± 40.23 Eu-M, 110.23 ± 57.18 Eu-M, and 108.96 ± 31.48 Eu-M).
3. Serum IgG and IgM antibody activities in localized and post-localized juvenile periodontitis groups were approximately three fold higher than those of the normal control groups.
4. Serum IgA antibody activities to Aa SNUDC 10-1 could not evaluate statistically in ELISA unit.
5. Specific serum antibody synthesis to *A. actinomycetemcomitans* occurred in 1 year infants and markedly increased in the deciduous dentition group.