

Resin processing時 埋沒材에 따른 咬合高涇 및 義齒表面 滑澤度の 變化에 關한 研究

高麗 大學校 保健 專門大學 齒技工科

金 雄 哲 · 鄭 寅 聖

Abstract

A comparative study on the relationship of investing medium to vertical occlusal change and surface smoothing during denture processing

In sung Chung C.D.T Uong Chul Kim, C. D. T

*Dept. of Dental Laboratory Technology, Junior College of Public Health
and Medical Technology, Korea University, Seoul, Korea*

A comparative study was conducted to evaluate the relationship of investing medium to the amount of vertical occlusal changes and to the differences of surface smoothness during denture construction.

Three groups of 20 dentures, 30 sets of upper and lower were fabricated of conventional heat-curing acrylic denture base resin, using silicone-gypsum molding techniques, with or without covering the occlusal surfaces of the teeth by artificial stone and all-gypsum molding techniques. The distance between the two reference points indented by 1/2 round bur on the upper and lower frontal surfaces of each articulator were measured and recorded before processing and again after processing and remounting of each denture on the articulator. The differences between the two recordings indicated the amount of vertical opening during denture processing.

The difference of surface smoothness were investigated and determined by 3 observers continual comparing of the two randomly selected dentures with each other, which were separately selected as pairs from the different two groups of 20.

The results obtained were as follows:

1. During resin processing no statistically significant differences of the amount of vertical occlusal changes were detected between any of the two groups of two silicone-gypsum and one all-gypsum molding techniques, although the amount of vertical opening was somewhat increased when silicone-gypsum molding technique was used.
2. Surface smoothness of the processed denture was makedly by increased when silicone-gypsum molding technique was used

목 차

- . 緒論
- . 實驗材料 方法
- . 實驗結果
- . 考按

I. 緒論

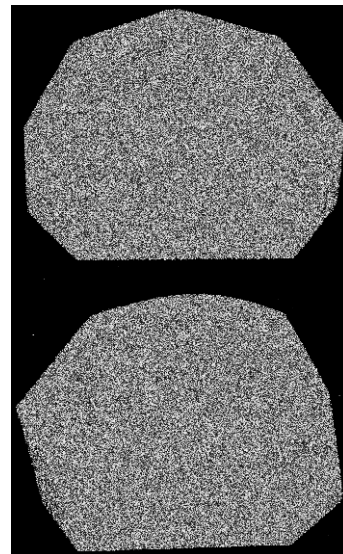
1900年代 中盤 acrylic resin 齒科 導入
 以後 acrylic resin denture base
 製作材料 使用 Resin
 denture base 技工製作過程 中 가
 重要 問題點 waxed trial denture
 resin dimensional
 change
 processing 過程
 dimensional change
 가 方法 研究 , 上記
 Skinner

Phillips curing 時 resin 膨脹壓力
 抵抗 埋沒時 混水比
 artificial stone 使用 方法 , Boucher
 Perlowski stone plaster 使用 double
 investing 方法 提示 . 最近
 rubber base 開發
 正統的 方法 外 silicon rubber gypsum
 使用 埋沒 方法 提
 示 . Marcroft 實驗 self
 curing resin 境遇 rubber base
 gypsum 複合的 使用 埋沒
 가 正確 vertical dimensional 維持
 報告 妥當性
 , Zani fluid resin technique
 境遇, 從來 通常的 double investing 方
 法 rubber base gypsum 複合
 埋沒 方法 使用
 dimensional change가 curing
 denture 表面 roughness 減少
 報告 .

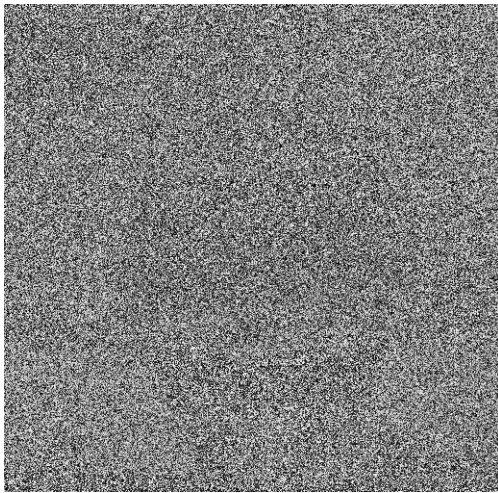
Dimensional stability 影響
 方法 deflasking, finishing polishing
 過程 技工述者 容易
 正確 denture 製作
 長點 .
 本 實驗 目的 通常的 heat curing
 denture base resin 使用 義齒 製作
 compression molding technique
 silicone rubber gypsum 複合的
 使用 埋沒方法 plaster stone 二重 埋
 沒方法 咬合高徑 變化 表面骨
 澤度 差異 比較, 觀察 .

II. 實驗材料 및 方法

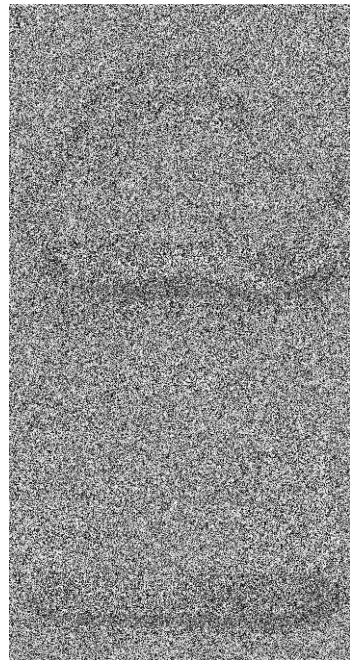
artificial
 stone 攪拌
 Columbia dentiform silicone rubber
 mold (# 402)(1)
 30 , 60



1. Columbia dentiform silicone rubber mold (# 402)



2. The remounting index

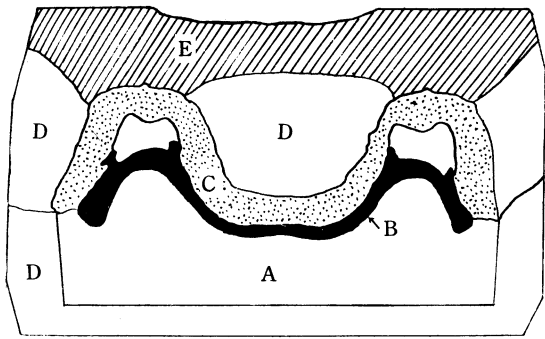


3. Silicone rubber mold

wax rim
 articulator mounting
 , trial waxed denture .
 base remounting
 remounting index .(

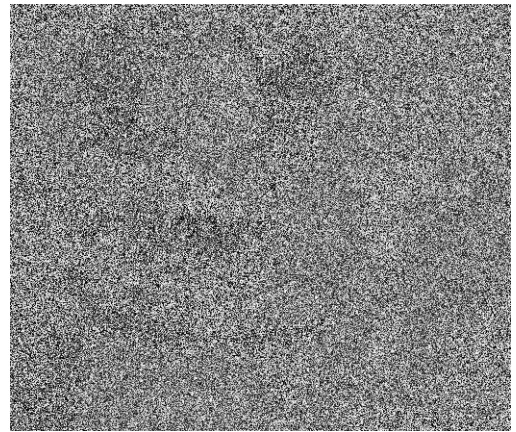
2)
 Articulator trial waxed
 denture silicone rubber
 silicone rubber mold(3)
 acrylic resin
 teeth silicone rubber mold
 fluid wax technique ,
 30 , 60 trial waxed denture
 .
 , 1 waxed denture
 , centric occlusion
 articulator mounting .
 Mounting trial waxed denture
 10 , 3
 : artificial stone ,
 plaster
 ,
 (3mm) silicone rubber

stone plaster ,
 (3mm) rubber stone
 plaster
 (4).
 upper jaw member lower jaw
 member 1/2 round
 bur (5 a
 b), resin processing
 stone , waxed denture artificial
 incisal index .(6)
 wax trial denture mounting
 measuring
 (7).
 Flasking denture
 .(8).
 Upper flask 埋沒

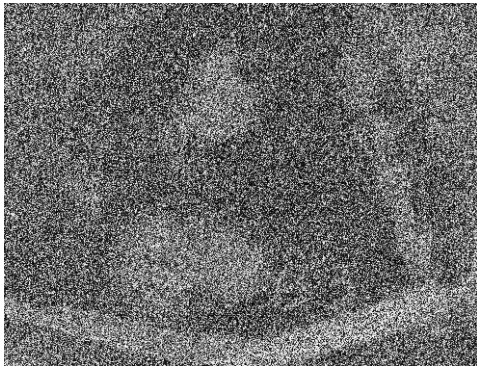


4. Trial waxed denture가 flask

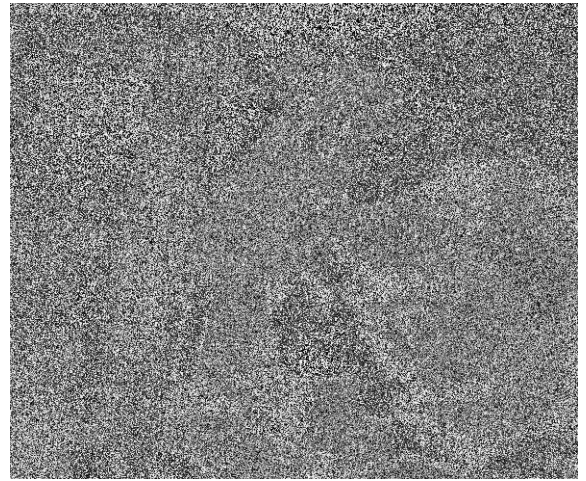
A. the stone cast B. the waxed denture
 C. the silicone layer D. the investing plaster
 E. the investing stone.(3)



5. Upper jaw member lower jaw member
 (a, b)



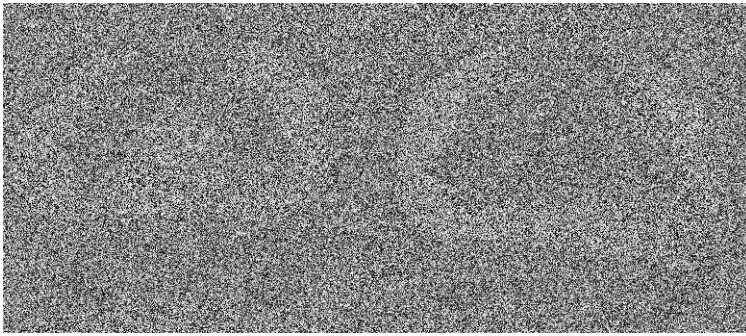
6. Occluso-incisal stone index



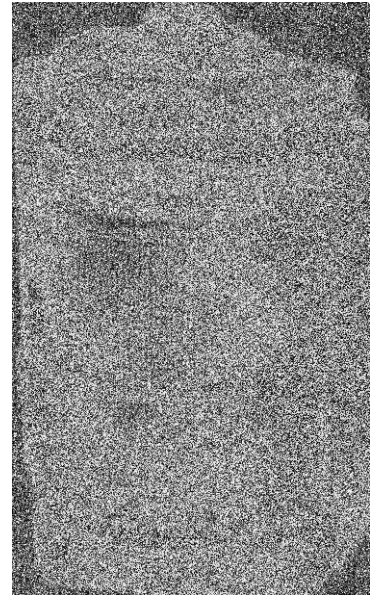
7.

flask ,
 metal-to-metal contact
 가 &
 flask 5 wax 硬化
 flask wax
 silicone rubber가
 resin
 Flask가 完全 room temperature 到

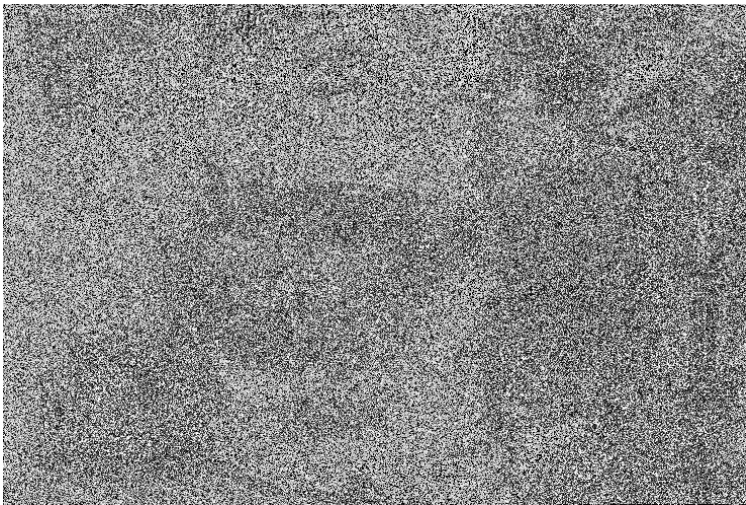
達 製造業者 指示 mixing
 acrylic resin trial packing flask 除
 去 後 二番 trial packing flask
 가 metal-to-metal contact(9)
 Resin curing short curing technique 利用
 160 1.5 , 0.5
 時間 行 , 後 60分間 bench
 cooling 20分



8. Trial waxed denture flask



9. Flask metal-to-metal contact

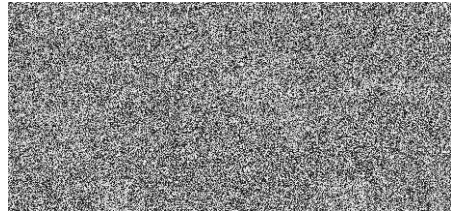
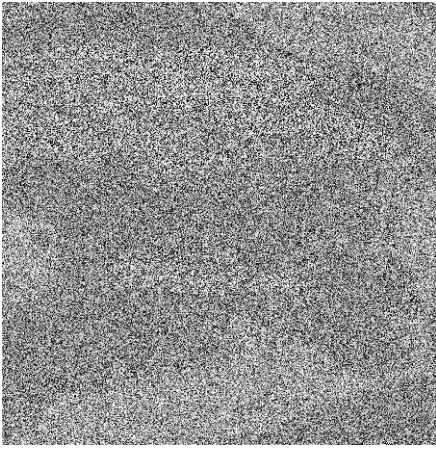


10. Processing remounting

9. Flask metal-to-metal contact

重合完了 義齒 deflasking
 後 remounting index articulator
 remounting plaster 上, 下顎 完全
 固定 .(10)
 狀態 resin processing 過程中 咬合
 高徑 變化 觀察 基準點 間
 距離 measuring device 5
 測定 . 咬合變形 測定 咬合器

開口 後 各 義齒 咬合面 trial
 waxed denture 採得 , artificial stone
 occlusal index 適合 觀察 (11).
 義齒表面 滑澤度 差異 對 觀察
 deflasking 第一群 第二群 40個 義
 齒 對 行 , 評價 20個
 群 義齒 無順, 任意 選定 各一
 個 義齒 3個 觀察者 比較
 方法 行 .



11. Processing 義齒咬合面 咬合變化
 觀察 stone occlusal index 適合

12. Deflasking (A :
 B :)

resin teeth denture
 stone occlusal index

(selective grinding) 調節

III. 實驗結果

denture base resin
 compressin molding technique , 3가
 resin processing
 60 (, 30) acrylic
 resin denture date ,
 curing

Resin processing 가
 ratio 0.392 F
 (P>0.05)
 Deflasking denture 18
 3 , silicon rubber

wax trial denture
 resin processing denture

가가 (2 가)

가 가 ,
 stone plaster

IV. 考按

0.288mm
 silicone rubber 皮蓋 plaster
 stone 埋沒
 가 가 ,
 가 가
 silicone rubber
 plaster stone

Resin processing gypsum
 denture
 Peyton, Woelfel, Paffenbarger
 Sweeney Rudd

0.382mm
 discrepancy , ,
 occusal Zakhari 가 Marcroft, denture
 gypsum

. processing

(: mm)

義 齒 No.	第 一 群	第 二 群	第 三 群
1	0.44	0.62	0.78
2	0.20	0.25	0.62
3	0.21	0.34	0.02
4	0.38	0.05	0
5	0.18	0.11	0.68
6	0.39	0.41	0.14
7	0.43	0.11	0.11
8	0.14	0.72	0.69
9	0.36	0.04	0.05
10	0.15	0.43	0.73
총 변 형 량	2.88	3.08	3.82
평 균 변 형 량	0.288	0.308	0.382
표 준 편 차	0.122	0.239	0.340
평 방 변 형 합 계	0.963	1.462	2.500

Plaster-stone

Silicone

silicone

gypsum
gypsum

변 동 요 소	자 유 도	평 방 합 계	평 균 평 방	F 값
급 간 변 동	2	0.049	0.025	0.392
급 내 변 동	27	1.687	0.062	

5%

(P>0.05)

참고 문헌

occusal accuracy
 가 가
 Zakhari
 rubber
 plaster
 silicone
 stone
 stone
 가 가
 denture curing
 가 가
 , 3가 가
 plaster-
 stone
 Zakhari
 deflasking
 silicone-gypsom
 가
 , Marcroft, zani
 V. 결론
 Silicone-gypsom
 stone
 plaster-
 3가
 denture resin
 , 30 60 denture ,
 1. silicone-gypsom 가
 2. silicone-gypsom
 plaster-stone
 가

1. Skinner, E. W., and Phillips, R. W.: The Science of Dental Materials, ed. 6, Philadelphia, 1968, W. B. Saunders Company, p. 186
2. Boucher, C. O.: Swenson's Complete Dentures, ed. 6, St. Louis, 1970, The C. V. Mosby Company, p. 390.
3. Perlowski, S. A.: Investment Changes During Flasking as a Factor of Complete Denture Malocclusion, *J. PROSTHET. DENT.* 3: 497-499, 1953.
4. Marcroft, K. R.: Fabrication of Identical Duplicate Dentures, *J. Am. Dent. Assoc.* 64: 476-481, 1962.
5. Marcroft, K. R., Tencate, R. L., and Hurst, W. W.: Use of Layered Silicone Rubber Mold Technique for Denture Processing, *J. PROSTHET. DENT.* 11: 657-664, 1961.
6. Zani Darcy, and Dioracy Fonterrada Vieira: A comparative study of silicone as a separating medium for denture processing, *J. PROSTHET. DENT.* 42: 386-391, 1979.
7. Peyton, F. A., and Anthony, D. H.: Evaluation of Dentures Processed by Different Techniques, *J. PROSTHET. DENT.* 13: 269-282, 1963.
8. Worelfel, J. B., Paffenbarger, G. G., and Sweeney, W. T.: Dimensional Changes Occurring in Denture During Processing, *J. Am. Dent. Assoc.* 61: 413-430, 1960.
9. Rudd, K. D.: Processing Complete Dentures Without Tooth Movement, *Dent. Clin. North Am.*, Nov., pp. 675-691, 1964.
10. Sharry, J. J.: Complete Denture Prothodontics, ed. 2, New York, 1968, McGraw-Hill Book Company, Inc., p. 266.
11. Zakhari, Kamal N.: Relationship of investing medium to occlusal changes and vertical opening during denture construction, *J. PROSTHET. DENT.* 36: 501-509, 1976.