

각종매몰재와 주조 금속에 따른 주조관의 적합도에 관한 실험적 연구

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Abstract

Comparing Fitness of Casting Crowns with Various Investments and Casting Metals.

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The experimental investigation was performed to study fitness of casting crowns with various investment widely used in Korea. 36 wax patterns were invested and casted according to the regular casting method.

The result were as follow :

1. Casting with cristobalite investments of Shofu were seen apart, 0.04mm the tightest space in the linguo and bucco-cervical margin. And the largest deviation, 0.1mm was shown in the central groove 0.1mm was shown in the central groove area of occlusal surface(Jensen Metal)
2. Casting with cristobalite investments of kerr were seen apart, 0.04mm the tightest space in the linguo and bucco-cervical margin And the largest deviation, 0.09 was shown in the central groove area of occlusal surface(Jensen Metal)
3. Casting with Quartz investments of G-C were seen apart, 0.04mm the tightest space in the linguo-cervical margin, And the largest deviation, 0.1mm was shown in the central groove area of occlusal surface(Jensen Metal)
4. Casting with cristobalite investments of shofu were seen apart, 0.01mm the tightest space in the linguo-cervical margin, And the largest deviation, 0.03mm was shown in the central groove of occlusal surface(Bo-sung A type gold alloy)
5. Casting with cristobalite investments of kerr showed the best fitness in linguo-cervical margin. And the largest deviation, 0.02mm was shown in the central groove area of occlusal surface(Bo-sung A type gold alloy)
6. Casting with Quartz investments of G-C were Seen apart, 0.02mm the tightest space in the linguo-cervical margin, And the largest deviation, 0.04mm was shown in the central groove area of occlusal surface(Bo-sung A type gold alloy)
7. Casting with cristobalite investments of shofu were seen apart, 0.01mm the tightest space in the linguo-cervical margin. And the largest deviation, 0.08mm was shown in the buccal cusp area of occlusal surface(Bo-sung B type gold alloy)

8. Casting with cristobalite investments of Kerr shown the best fitness in linguo-cervical margin. And the largest deviation, 0.04mm was shown in the central groove area of occlusal surface(Bo-sung B type gold alloy)
9. Casting with Quartz investments of G-C were seen apart, 0.03mm the tightest space in the linguo-cervical margin. And the largest deviation, 0.04mm was shown in the central groove area of occlusal surface(Bo-sung B type gold alloy)
10. Casting with cristobalite investments of Kerr shown the best fitness and Bo-sung A type gold alloy showed the best fitness.

목 차

II. 실험재료 및 방법

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·
· 實驗成績

1. 실험재료

- (1) : denti-form 28 die()
Rubberbase impression
dental stone
die
- (2) : a. Shofu O.K Inlay
b. Kerr Cristobalite
c. G.C Quartz
- (3) : a. Metal
b. A type
c. B type
- (4) wax : G.C Blue Inlay wax
- (5) 10 × Nikon 1/100mm
mirco-meter
- (6) direct resin(self-curing resin)
- (7) Whip-mix Vacuum investing machine
- (8) Jelenko ring furnace

I. 서 론

印象材, 模型材, 埋沒材, , was
顯著

가

explorer , 間隔
meurh dispecement Photomicrographic
die

觀察

가 .
가 現存
가

mirco meter
die 距離
若干 가

2. 실험방법

(1) wax pattern

一律的 wax pattern
crown & bridge waxing up dipping
method wax build up
wax measuring device 0.5mm
wax pattern

種類 4 36

(2) Spruing

Sprue 植立

10 gauge
 casting wax
 ring spruing wax pattern
 Crusible former wax pattern
 cleaner 洗滌 wetting agent
 指示 混水比
 60rpm mixing 36

(3) 燒 還(Burn out)

36 ring 通法 室溫
 90 700 20
 heat soaking

(4) 處理

ring
 acetylene gas 10
 bench cooling Quenching
 除去 鹽酸液(HCL) 2
 3 heating 酸化幕
 carbondum disk sprue

(5) die 接合

wax pattern Stone die figer press
 die 壓接

(6) direct resin 切斷

가 36 die 가 1.5cm,
 1cm, 1cm plaster 陰型 direct
 resin die
 resin curing group 2
 頬舌, 2 近遠心 diamond
 disc

(7) 測定

10× Nicone micro-meter 裝
 着 buccal margin,
 lingual margin, mesial margin, distal margin,
 lingual cusp, buccal cusp, central groove
 側面壁 4 11

III. 實驗成績

Shofu cristobalite
 buccal margin lingual
 margin 0.04mm, mesial margin 0.08mm,
 distal margin 0.09mm lingual cusp
 0.04mm, buccal cusp 0.05mm, Central groove
 0.1mm 4

0.01mm . kerr cristobalite
 buccal margin, lingual margin
 0.04mm, mesial margin 0.08mm, distal
 margin 0.09mm, lingual cusp가 0.03mm,
 buccal cusp가 0.04mm, central groove
 0.09mm , 4 側壁面 適合

G-C Quartz buccal
 margin 0.05mm, lingual margin 0.04mm,
 mesial margin 0.09mm, distal margin
 0.01mm, lingual cusp가 0.05mm, buccal cusp가
 0.06mm, central groove 가 0.1mm
 4 側壁面 0.02mm

Shofu cristobalite
 buccal margin
 0.03mm, lingual margin 0.01mm, mesial and
 distal margin 0.04mm, lingual cusp가 0mm,
 buccal cusp가 0.02mm, Central groove 가
 0.03mm 4 側壁面 適合

Kerr cristobalite
 buccal margin 0.02mm, lingual margin
 0mm, mesial margin 0.03mm, distal margin
 0.02mm, lingual and buccal cusp가 0mm, central
 groove 가 0.02mm 側壁面
 buccal surface 0.01mm

Shofu cristobalite
 buccal margin
 0.08mm, lingual margin 0.01mm, mesial
 margin 0.03mm, distal margin 0.03mm,
 lingual cusp가 0.08mm, buccal cusp가 0.03mm,
 central groove 가 0.03mm 側
 壁面 buccal and lingual surface
 0.01mm, mesial and distal surface
 適合

die ()

部 位 埋没材	buccal margin	lingual margin	mesial margin	distal margin	lingual cusp	buccal cusp	central groove	buccal surface	lingual surface	mesial surface	distal surface
shofu 埋没材	0.08	0.01	0.03	0.04	0.03	0.08	0.03	0.01	0.01	0	0
kerr 埋没材	0.03	0	0.03	0.03	0.01	0.01	0.04	0	0.01	0.01	0
G-C 埋没材	0.04	0.03	0.05	0.05	0.03	0.02	0.04	0.01	0.02	0.02	0.01

die (A Type)

部 位 埋没材	buccal margin	lingual margin	mesial margin	distal margin	lingual cusp	buccal cusp	central groove	buccal surface	lingual surface	mesial surface	distal surface
shofu 埋没材	0.03	0.01	0.04	0.04	0	0.02	0.03	0	0	0	0
kerr 埋没材	0.02	0	0.03	0.02	0	0	0.02	0	0	0	0
G-C 埋没材	0.03	0.02	0.05	0.05	0.02	0.02	0.04	0	0.01	0.01	0.01

die (B Type)

部 位 埋没材	buccal margin	lingual margin	mesial margin	distal margin	lingual cusp	buccal cusp	central groove	buccal surface	lingual surface	mesial surface	distal surface
shofu 埋没材	0.04	0.04	0.08	0.09	0.04	0.05	0.1	0.01	0.01	0.01	0.01
kerr 埋没材	0.04	0.04	0.08	0.09	0.03	0.04	0.09	0	0	0	0
G-C 埋没材	0.05	0.04	0.09	0.1	0.05	0.06	0.1	0.02	0.02	0.02	0.02

Kerr cristobalite
 buccal margin 0.03mm, lingual margin
 0mm, mesial and distal margin 0.03mm,
 buccal and lingual cusp가 0.01mm, central
 groove 가 0.04mm , 側壁面
 lingual and mesial surface 0.01mm
 buccal and distal surface
 適合
 G-C Quartz buccal
 margin 0.04mm, lingual margin 0.05mm,
 lingual cups가 0.03mm, buccal cusp가 0.02mm,
 central groove 가 0.04mm,
 側壁面 buccal and distal surface
 0.01mm, lingual and mesial surface 0.02mm

IV. 총괄 및 고찰

die 間隔 0.03mm
 가 가 가
 3 Kerr
 cristobalite 가 가 近似置
 , Gold 가
 A type 가 咬
 合面 central groove cusp
 wax parttern
 cervical margin
 外面 變形 側壁面

(4 検査자가

2)

V. 결론

(1) Shofu cristobalite margin lingual and buccal margin 0.04mm 가 , central groove 0.1mm 가 .()

(2) Kerr cristobalite margin lingual and buccal margin 0.04mm 가 central groove가 0.09 가 .()

(3) G-C Quartz margin lingual margin 0.04 가 central groove가 0.1mm 가 .()

(4) Shofu cristobalite margin lingual groove가 0.03mm 가 .(A type)

(5) Kerr cristobalite margin lingual margin 0mm 가 緊密 central groove가 0.02 가 .(A type)

(6) G-C Quartz margin lingual margin 0.02mm 가 central groove가 0.04mm 가 .(A type)

(7) Shofu Cristobalite margin lingual margin 0.01mm 가 , buccal cusp가 0.08mm 가 .(B type)

(8) Kerr cristobalite margin lingual margin 0mm 가 central groove가 0.04mm 가 .(B type)

(9) G-C Quartz margin lingual margin 0.03mm 가 central groove가 0.04mm 가

(10) Kerr cristobalite 가 가 適合 A Type 가 適合

참고 문헌

1. Research Reports vol. I, DAE JEON Medical Junior college, 1979
2. Lund, M.R. and Nixon, C.T. : Evaluating Gold Inlay Casting Technics, Univ. of Michigan Thesis, 1954
3. Martin, K.H. : Investigation of the Effect of Water Powder Ratio on the Accuracy of fit of Gold Alloy Castings, Austral. D. J., 1 : 202, 1956
4. Hollenback, G.M., and Rhoads, J.E : A study of the Behavior of Pattern wax. part I, J. South, California D. A. 27 : 298, 1959
5. Biorndal, A.M., and sahs, E.A : Comparative Microphot ographic Study of Marginal Adaptation of Amalgam and Gold Inlay Restoration Iowa D. J., 46 : 12, 1960
6. Johnston, J.E., Phillips, R.W. : Modern practice in Crown and Bridge Prosthodontics, 3rd ed. W.B Saunders., Philadelphia
7. Tylman, S.D. : Theory and practices of Crown and Fixed partial Denture prosthodontics, 6th ed. The C.V.Mosby Co., Saint Louis