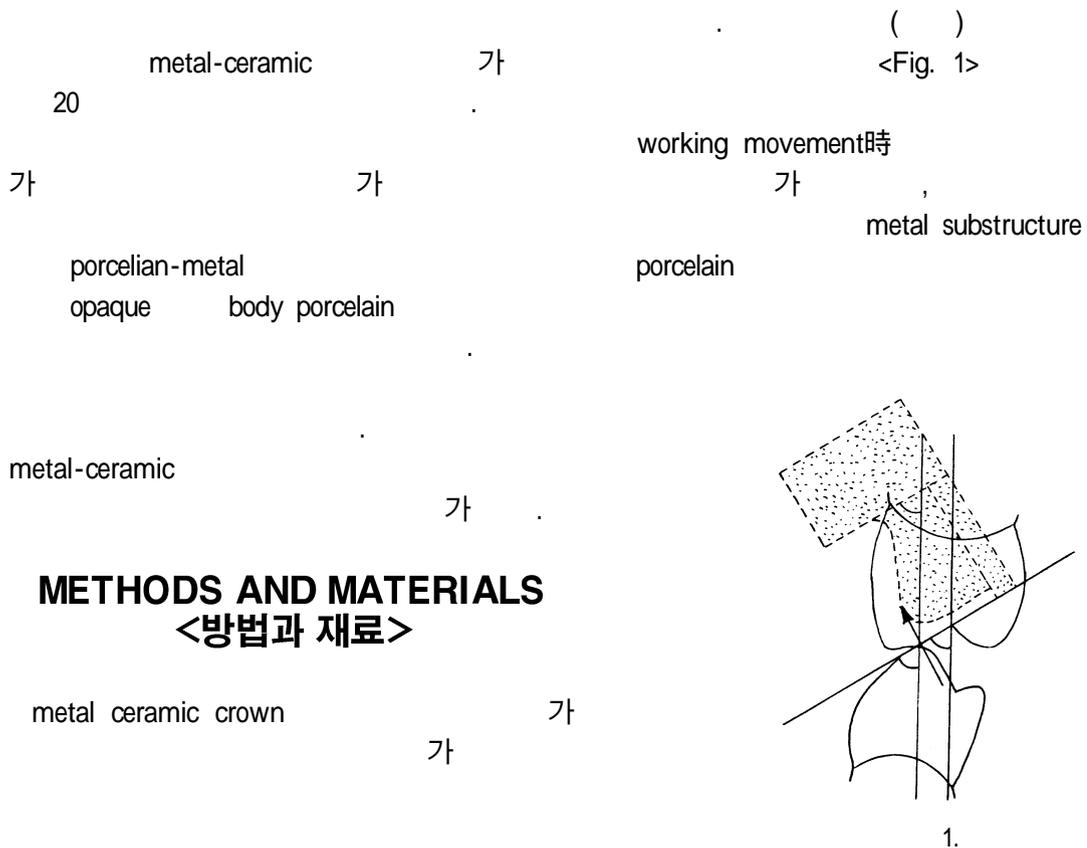


# METAL CERAMIC 보철물의 파절에 미치는 design과 technique에 대한 실험적 연구

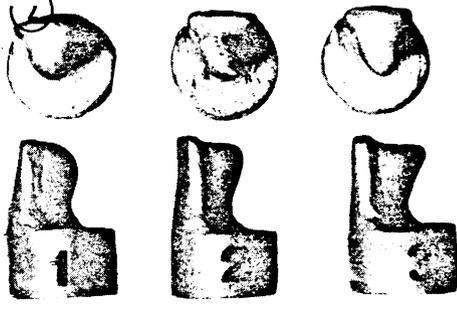
高大 齒技工科 二學年

## Design and technique variables affecting fracture resistance of metal ceramic restoration

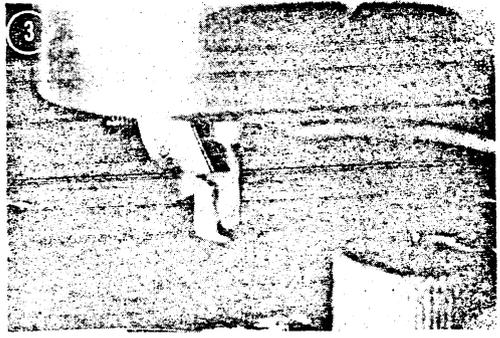


1,300 1 wax-pattern casting ceramic gold  
 wax pattern 3 ceramco O alloy  
 cusp Tip

<Fig. 2>



2.

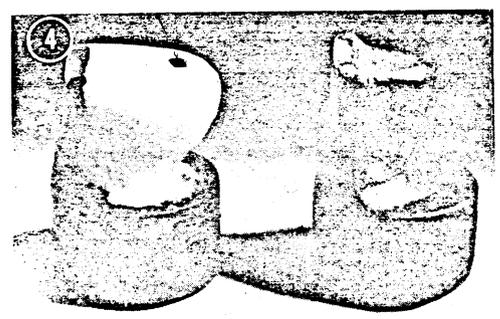


3.

loading stylus 1mm 가  
 load cell  
 sample Instron cross bar plate  
 stylus가  
 5mm  
 sample

working contact 가

<Fig. 4>



4.

group metal  
 aluminium oxide stone  
 group silicon carbide stone  
 sample  
 group degass sample  
 metal conditioner . <Table. 1>  
 sample  
 porcelain

**TESTING OF THE SAMPLE**

Table. 1 44가  
 sample instron  
 loading .<Fig. 3>

0.05inch/min

가

# RESULT <결과>

No. 1 metal die 가  
metal conditioner

sample 140-  
160pound

model  
<Fig. 5> Table. 1

가 Table. 2

3가

sample metal  
conditioner

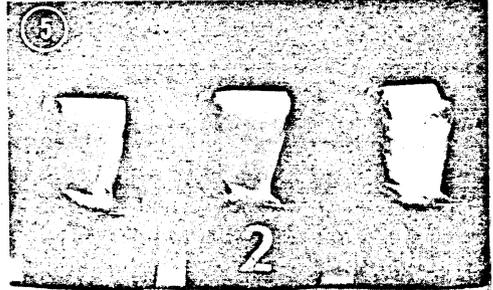
fine coarse stone(

) No. 1 die

metal coating

3가 <No. 1, 2, 3> metal die 中

No. 3 metal die 가



5.

Table. 1 Average fracture strength(in pounds)

No. of samples for each design	Design			Group description
	1	2	3	
5	347	359	249	Fine stone, no metal coating
5	401	356	328	Fine stone, metal coating
5	400			Coarse stone, metal coating
4	395			Coarse stone, no metal coating
3		153		Fine stone, nonoxidized
2		150		Rejected samples

Table 2. Analysis of variance

Source of variability	df	SS	MS	F	P value
<b>Problem 1. Three designs with and without metal coating- 30 observations</b>					
Factor A (coated or uncoated)	1	14083	14083	5.09	0.025 < p < 0.05
Factor B (three designs)	2	41145	20573	7.43	p < 0.05
A-B interaction	2	8832	4416	1.59	p > 0.10*
Error	24	66440	2768		
Total	29	130500			
<b>Problem 2. Design No. 1 with two surface roughnesses, coated or uncoated - 19 observations</b>					
Factor A (coated or uncoated)	1	4521	4521	2.13	p > 0.10*
Factor B (coarse or fine)	1	2298	2209	1.08	p > 0.10*
A-B interaction	1	2825	2825	1.33	p > 0.10*
Error	15	31850	2123		
Total	18	41874			

\* Not significant.

1. metal coating agent
2. agent가 strength가
3. die metal coating agent
4. 가 metal coating 가 , No. 1, No. 2 . 24 karat gold metal coating sample
5. (aluminium oxide) (silicon carbide)
6. No. 1 die
7. degassing die porcelain

# DISCUSSION<토론>

가

Kelly

ceramic sample 9rodml sample 가 metal 44 가  
 degassing ( , shiny Britecote)

metal

## Design

substructure 2  
 substructure  
 substructure porcelain design  
 supporting metal

fracture

tooth preparation metal design  
 가 porcelain  
 porcelain

## METAL PREPARATION

Shell Nielsen metal ceramic 가  
 2/3 가 1/3 vander wall  
 s( )  
 metal roughness 가

wetting( )

## PORCELAIN CONTAMINATION

1. porcelain crown
2. coarse silicon carbide metal porcelain
- 3.
4. porcelain

coating agent

## METAL COATING AND OXIDE LAYER

- metal coating agent 가
1. 3가 <No.1, No. 2, No. 3> sample metal coating agent
  2. sample metal coating agent 가
- metal coating agent

metal porcelain  
 , metal  
 degassing  
**CONCLUSIONS**  
 metal-ceramic  
 metal coating agent  
 metal preparation type.  
 metal 374 44  
 metal ceramic  
 1. metal  
 2. metal  
 3. metal conditioning agent  
 4. metal coating agent  
 5. metal design  
 metal design

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