

# 永久大白齒의 咬合面上에 나타난 發育溝의 變異에 關한 研究

新丘專門大學

李 榮 垠

*β A study on the variation of the developmental grooves on the  
occlusal surface of the permanent molars in Koreaβ*

Lee Young- eun

## **β A study on the variation of the developmental grooves on the occlusal surface of the permanent molars in Koreaβ**

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### *Abstract*

The development of the lobe pattern in the human dentition plays a part in the form and function of each individual teeth. In order to determin the morphological categories used to describe the occlusal surfaces of the maxillary and mandibular molars, the variation of the developmental grooves which separate each lobe in the molars was examined and analysed. The obtained conclusions were as follow.

1. Most of the maxillary first molars with more distinct and more developmental grooves than the other molars but in most cases of the third molar, a heart-shaped outline due to poorly developed or abscent distolingual cusp was most frequent and in this case the third molar had the 3 cusps separated by the central developmental groove and the buccal developmental groove.
2. In most cases, the mandibular first molar had the 5-cusp type that the groove patter resembles a Y, the second molar the 4-cusp type arranged in such a way that the buccal and lingual developmental grooves meet the central developmental groove at right angle on the occlusal surface and many instances of the mandibular third molars had the 5-cusp thpe with a+groove pattern which separatess the mesiolingual cusp from the distobuccal cusp and the 4-cusp type with a+groove pattern.
3. The maxillary and mandibular third molar were most variable in the developmental groove.

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# I. 緒論

lobe

(real life) 6  
 (alveolar process) (tooth germ)가 가 (tooth growth center (developmental lobe) 1.2 4  
 growth center (lobe)

(developmental groove) line (developmental calcification center  
 3  
 lobe pattern

3  
 4  
 lobe(3 labial lobe 1 lingual lobe) 5 (3  
 buccal lobe 2 lingual lobe) 4 (3  
 buccal lobe 1 lingual lobe)

4 (2 buccal lobe 2 lingual lobe)  
 facial developmental depression  
 buccal lobe lingual lobe  
 buccal lobe  
 lingual lobe

20%  
 Carabelli lobe 가  
 1 I (cusp)  
 5 lobe(2 buccal lobe, 2 lingual lobe)  
 lobe

3 4 5 lobe 2  
 5 lobe 1 4 lobe  
 2,3,4  
 lobe

# II. 研究材料 및 方法

Algingte

(	3	)
Table 1	2	
1	가 340	2 332
3	127	1 350
2	348	3 103

Figure1 A-type I-type  
 figure2 J-type P-  
 type (central pit) (mesial groove)가 (distal Pit) (distal oblique groove) (disto buccal triangular groove)가 A-type

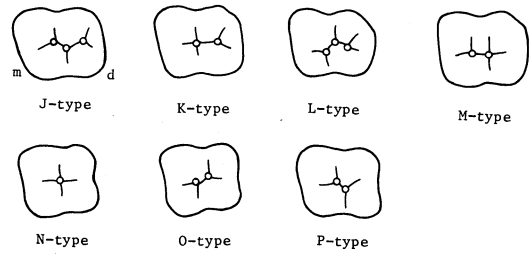
B-type,  
 (oblique ridge) 가 (transverse groove of the oblique ridge)가 C-type

D-type, 가 E-type, F-type, G-type, 가 H-type,  
 I-type

Y  
 Y ,  
 J-  
 가  
 가 Y  
 , K-type  
 가 5

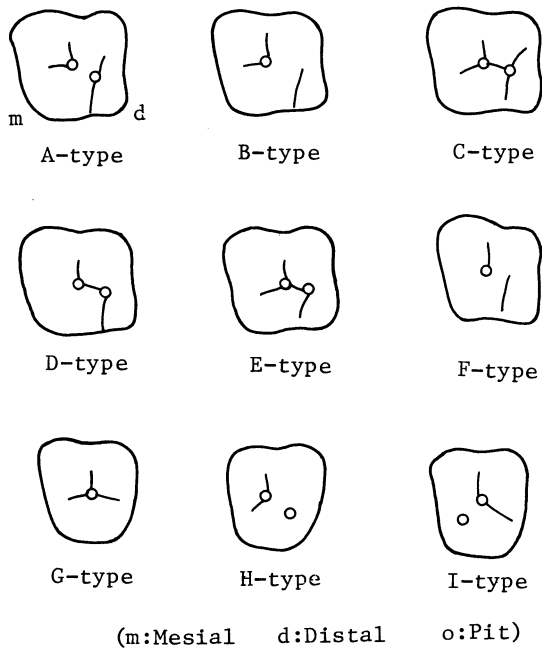
가 + 5 ,  
 L-type + 5 , M-type  
 가 + 5 , N-type  
 가 + 4 , p-type  
 가 Y 4

Fig 2. Groove patterns of the maxillary molars



### III. 研究成績

Fig 1. Groove patterns of the maxillary molars



1 340 48%가  
 A-type, 30.6%가 B-type, 12.1%가 C-type,  
 4.7%가 C-type, 3.6%가 F-type, 1.2%가 E-type  
 332 2  
 45.5%가 B-type, 17.8%가 D-type,  
 10.8%가 C-type, 9.0%가 A-type, 4.5%가 E  
 F-type, 4.2%가 H-type, 3.6%가 C-type ,  
 127 3 45.7%  
 가 C-type, 19.7%가 D-type, 11.0%가 B-type,  
 7.1%가 C-type, 6.3%가 H-type, 3.9%가 E-  
 type, 3.7%가 I-type, 2.4%가 A-type  
 350 1  
 J-type 43.4%, K-type 34.9%, L-type  
 12.3%, N-type 7.7%, O P-type 0.9%  
 , 348 2 N-  
 type 37.4%, K-typeol 28.2%, O-type  
 14.7%, J-type 14.6%, M-type 0.6%  
 103 3 31.1%  
 가 O-type, 30.1%가 L-type, 14.6%가 N-type,  
 13.6%가 K-type, 5.8%가 P-type, 3.9%가 J-  
 type, 1.0%가 M-type

Table 2. Variation of the developmental grooves on the occlusal surface of the maxillary molars

Groove Patterns	Variation					
	Maxillary first molar		Maxillary second molar		Maxillary third molar	
	No.	%	No.	%	No.	%
Total	340	100	332	100	127	100
A type	166	48.8	30	9.0	3	2.4
B	104	30.6	151	45.5	14	11.0

C	41	12.1	12	3.6	9	7.1
D	16	4.7	59	17.8	25	19.7
E	4	1.2	15	4.5	5	3.9
F	9	3.6	15	4.5		
G			36	10.8	58	45.7
H			14	4.2	8	6.3
I					5	3.7

Table 2. Variation of the developmental grooves on the occlusal surface of the mandibular molars

Groove patterns	Variation					
	Mandibular first molar		Mandibular second molar		Mandibular third molar	
	No.	%	No	%	No	%
Total	350	100	348	100	103	100
J type	152	43.4	29	8.3	4	3.9
K	122	34.9	98	28.2	14	13.6
L	43	12.3	22	6.3	31	30.1
M			2	0.6	1	1.0
N	27	7.7	130	37.4	15	14.6
O	3	0.9	51	14.7	32	31.1
P	3	0.9	16	4.6	6	5.8

#### IV. 考 察

1 A-type B-type heart shape  
 ( transverse groove of the (primary design)  
 oblique ridge)가 3

2 79.4% A-type major cusp Carabelli 2  
 Cope-Osborn Primary Cusp  
 가 45.5% Triangle 가 5,6)  
 3

3 G-type 45.7% 가 가  
 2 , 1

3 1 3 가 2, 3  
 가

groove)가 가 (supplemental 가 가  
 가 1

Carabelli 4 가 2 + 87.1%  
 4 5  
 4

가 가 가 + 5 +  
 3 3 가  
 3 + 4  
 4

1 가 2 가 3  
 3 90.3% +  
 4 5

Gregory Hellman(1926) Hellman(1928) 가 가  
 7,8,9

lingual edge 5-Y 가  
 5 가 Y  
 4 4-Y 5-Y 가 +5  
 가 + 5  
 +4 +5 가  
 4  
 , Y +  
 metaconid hypoconid  
 + Y ,

### V. 結論

(lobe)

1. 가 1  
3
2. 가 Y  
5 , 2 + 4  
3 + 4 5
3. 가 1 2, 3  
가 가 (supplemental groove)가

Figure 2 7가  
 J P-type Y  
 + J, K, L  
 M-type 5 , N, O P-type 4  
 J-type Y 5 , K, L  
 M-type + 5 , N 0-type +  
 4 P-type Y 4  
 가 90.6%  
 5 가  
 5 Y 43.4% +  
 47.2% 가  
 1 가  
 가 Y 5 Y

### 참고문헌

1. Orban : Oral histology and embryology, 7th ed., The C. V. Mosby Co., 1972, p. 18.
2. Brand. Isse hard : Anatomy of Orofacia s-

- ... ructures. 2nd, ed., The C. V. Mosby Co., 1982, p. 40.
3. James L. Fuller Gerald E. Denehy,: Concise Dental Anatomy and Morphology Year Book Medical Publishers, Inc., 1977, p.41-42
  4. Wheeler. : Dental Anatomy Physiology, and Occlusion, 6th ed., W. B. Saunders Co., 1984 p. 228 p. 230 p. 268~269.
  5. Cope, F.D.: On the tritubercular molar in human dentition. J. Morphol., 12 : 7, 1988.
  6. Osborn, H. F. : Evolution of mammalian molar teeth, In Gregory, W., K. (ed): Biological Studies and Addresses; Vol, New York, The Macmillan Company, 1907.
  7. Gregory, W, K. : The Origin and Evolution of the Human Dentition, Baltimore, Williams, and Willkins, 1922.
  8. Gregory, W. K., and Hellman, M. : The Crown Patterns of fossils and recent human molar teeth and their meaning. Natural History, 26 : 300, 1926.
  9. Hellman, M. : Racial Characters in the human dentition. Proceedings of the American Philosophical society, 67:157, 1928.
  10. Robert P. Renner. : Introduction to Dental Anatomy and Esthetics. Quintessence Publishing Co. Inc. 1985.