

후전방두부규격 방사선 사진을 이용한
편측성 측두하악관절장애 환자의
안면 비대칭에 관한 연구

지도 이 근 우 교수

이 논문을 석사 학위논문으로 제출함

2002년 12월 일

연세대학교 대학원

치 의 학 과

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50

20

1.

가

($p < 0.05$)

가

2.

가

($p < 0.05$),

3.

.(p<0.05)

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80%

1

2

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3

4-7

Hansson 259

70%

가

⁸, Habets 60

가

⁹ Schokker 100

¹⁰, Schellas

, 128

^{11,12}

Bezzur 43

67%

3%

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¹³, Tallents

12

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¹⁴

Westesson 11

5

6

.¹⁵ Inui

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,¹⁶ Nakagawa

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,¹⁷ Trpkova

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Table1

Table1. The distribution of age, gender and symptom side in control and patient group

	N	Age(year)	Gender		Symptom side	
			Male	Female	Rt.	Lt
Control	20	23.0±1.8	10	10	None	None
Patient	50	25.6±10.1	11	39	26	24

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1.

Cranex 3+ ceph(Soredex, Helsinki,

Finland)

Frankfort horizontal line

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2.

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GWIO:

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2

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10

가 .

.(Great Wing

Inferior Orbit)

Me: (Menton)

Co: (Condylion)

Ag: Antegonial notch 가

ANS: (Anterior Nasal Spine)

CB: GWIO

. (Cranial Base)

, ML: CB ANS

. (Midline)

MH: Co - Ag . (Mandibular Height)

FH: CB Ag . (Facial Height)

MW: Ag (ML) .(Mandibular Width)

MMD: ML Me . (Mandibular Midline Deviation)

: MH(Mandibular Height)

: FH(Facial Height)

: MMD

: MW .

Fig.1 .

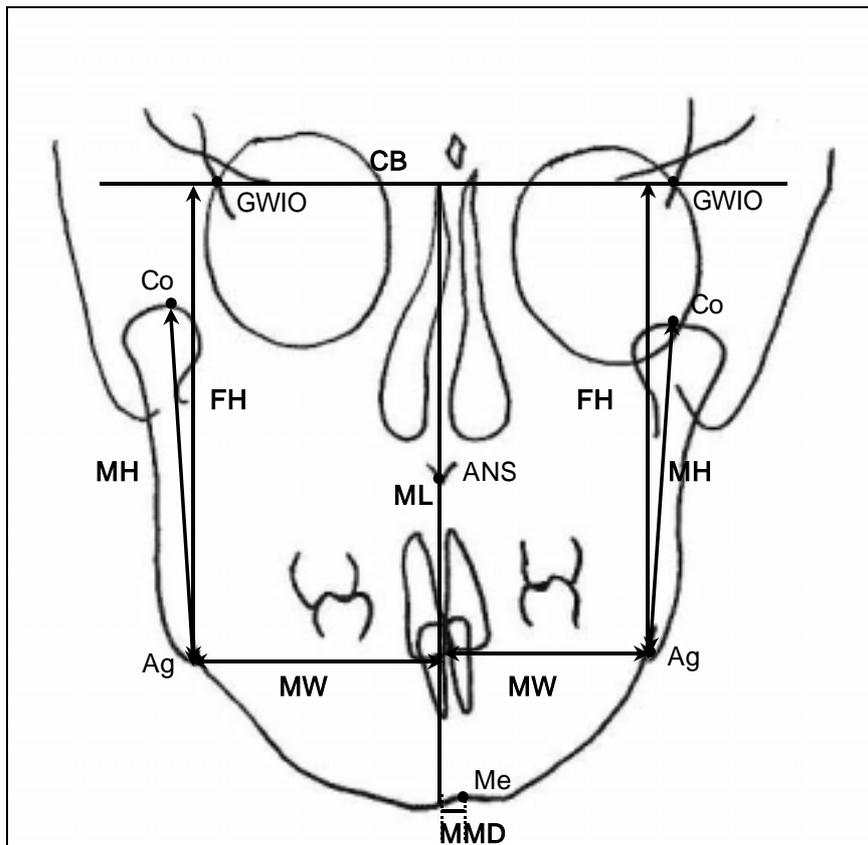


Fig.1. Landmarks and lines on posteroanterior(PA) cephalogram

GWIO: Great Wing Inferior Orbit, Co:Condylion, Ag: Antegonial Notch, Me: Menton, ANS: Anterior Nasal Spine

CB: Cranial Base, **FH:** Facial Height, **MH:** Mandibular Height, **ML:** Midline

MW: Mandibular Width, **MMD:** Mandibular Midline Deviation

0.5mm

$$LD = |Rt - Lt|$$

(Asymmetry Index)

$$AI = \left| \frac{Rt - Lt}{Rt + Lt} \right| * 100\%$$

MMD가

3.

Statistical Analysis System(SAS)

가

t-test

paired t-test

95%

가.

(FH), (MW) (MH),
가
(p<0.05) .(Table2, Fig.1) (MMD)
가
. (Table3, Fig.2)
,
가 (p<0.05)
. (Table4, Fig.3)

Table2. Comparison of length difference between patient and control groups

	LDMH	LDFH	LDMW
Control	1.90±1.63	2.03±1.30*	2.63±2.51
Patient	2.83±2.12	3.28±2.80*	3.62±2.59

*p<0.05

(mean±s.d, mm)

LD= |Rt - Lt|

LDMH: length difference of mandibular height.

LDFH: length difference of facial height.

LDMW: length difference of mandibular width

Table3. Mandibular midline deviation in patient and control groups

	MMD
Control	1.08±1.25*
Patient	2.43±2.53*

*p<0.05 (mean±s.d, mm)

MMD: mandibular midline deviation

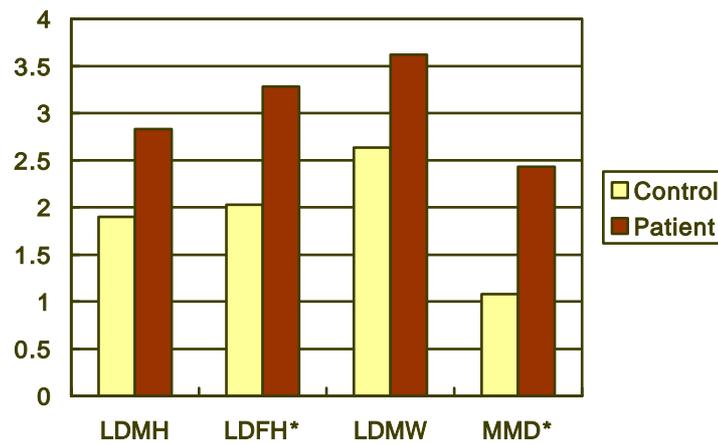


Fig.2. Length difference and mandibular midline deviation in patient and control group

LDMH: length difference of mandibular height.

LDFH: length difference of facial height.

LDMW: length difference of mandibular width.

MMD: mandibular midline deviation

Table4. Asymmetry index in patient and control groups

	AIMH	AIFH	AIMW
Control	1.22±0.98*	0.94±0.62*	2.76±2.72
Patient	1.91±1.44*	1.55±1.31*	3.79±2.65

*p<0.05

(mean±s.d , %)

$$AI = \left| \frac{Rt - Lt}{Rt + Lt} \right| * 100\%$$

AIMH: asymmetry index of mandibular height

AIFH: asymmetry index of facial height

AIMW: asymmetry index of mandibular width

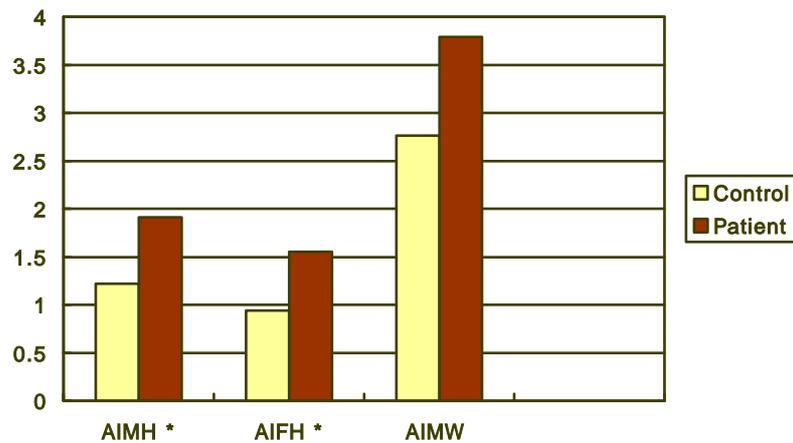


Fig.3. Asymmetry index in patient and control groups

AIMH: asymmetry index of mandibular height

AIFH: asymmetry index of facial height

AIMW: asymmetry index of mandibular width

(p<0.05)

(1.98±3.28mm)

(Table5, Fig.4.)

Table5. Mandibular height, facial height, mandibular width and mandibular midline deviation in symptomatic side and normal side

	MMH	MFH	MMW	MMD
Symptomatic side	74.46±5.69*	105.54±7.83*	48.21±3.08	1.98±3.28
Normal side	76.61±5.70*	107.15±7.65*	47.11±2.91	

*p<0.05

(mean±s.d, mm)

MMH: mean length of mandibular height.

MFH: mean length of facial height

MMW: mean length of mandibular width

MMD: mean length of mandibular midline deviation

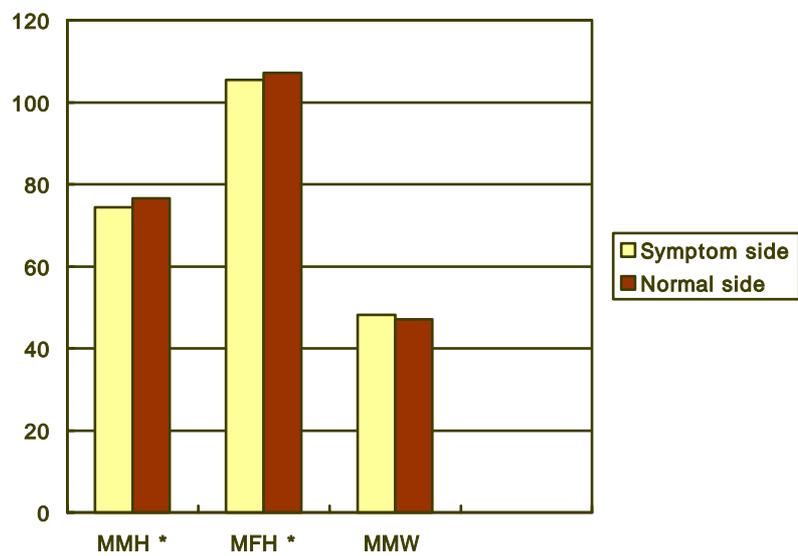


Fig.4. Mandibular height, facial height, mandibular width and mandibular midline deviation in symptomatic side and normal side

MMH: mean length of mandibular height.

MFH: mean length of facial height

MMW: mean length of mandibular width

MMD: mean length of mandibular midline deviation

80%

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25% 가 .²²

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(regressive remodeling)

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²⁴ Nebbe 25

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1. 가

($p < 0.05$)

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2. 가

($p < 0.05$)

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Abstract

A Study on Facial Asymmetry in Unilateral Temporomandibular Joint Dysfunction Using Posteroanterior Cephalograms

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Mandibular condyle is a major site of mandibular growth. Recently it has been reported that condyle-disk complex disorder of temporomandibular joint can influence the growth of condyle and induce facial asymmetry.

The goal of this study was to investigate the influence of temporomandibular joint dysfunction on facial asymmetry. Fifty patients with unilateral temporomandibular joint dysfunction and 20 controls were selected. The facial height, mandibular height, mandibular width of both sides, and midline deviation were measured from posteroanterior cephalograms in order to evaluate facial asymmetry. In the patient group, the symptomatic side and the normal side were compared.

The results were as the following:

1. The asymmetry indices of facial height and mandibular height of the temporomandibular joint dysfunction patient group were higher than those of control group($p<0.05$). But there was no significant difference between the two groups in mandibular width.
2. Mandibular midline deviation of the temporomandibular joint dysfunction patient group was larger than that of the control group($p<0.05$) and the mandible showed a tendency to deviate to the symptomatic side.

3. In the patient group, the facial height and mandibular height of symptomatic side were shorter than those of the normal side. ($p < 0.05$) But there was no significant difference in mandibular width between the symptomatic side and the normal side.

From the above results, it can be suggested that temporomandibular joint dysfunction patients show greater degree of facial asymmetry than normal subjects, and the facial height and the mandibular height of the symptomatic side are shorter than those of the normal side. In addition, the mandible tends to deviate to the symptomatic side. Therefore, a careful assessment of facial asymmetry is needed in the diagnosis and treatment plan of temporomandibular joint dysfunction patients.

Key words: Temporomandibular joint dysfunction, Facial asymmetry, Posteroanterior cephalogram, Mandibular growth