

# Caldwell-Luc

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1

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: Caldwell-Luc

CT

:  
1995 1998  
18 18 70 ,  
41 , 23  
Caldwell-Luc  
CT 10 17 , 10  
CT 4 30 14.6 .  
(n=27) (n=8) 28  
27 , 1  
(p<0.05). (n=29), (n=11)  
(n=22) . 22  
3 , 2

: Caldwell-Luc

CT

Caldwell-Luc - ) Unger (6), 飯沼 (7)  
, 3  
(8) CT CT Caldwell-Luc  
(1-3).  
Caldwell-Luc 가 (4-8).  
(5), (Computed tomography : CT  
1995 1 1998 12 4  
CT 20 , 35  
14.6 . 4 30  
10 17 , 10 18  
18 70

1  
2  
3

: Caldwell-Luc

- 39 CT 3) (Width of maxilla) :
- 41 CT 4) (Width of naso-antral communication) :
- 23 5) (Width of inferior meatus) :
- CT GE 9800 (General Electric Medical System, Milwaukee, USA) 6) (Anteroposterior diameter of maxilla) :
- 5mm
- 3mm 5mm
- algorithm
- algorithm
- Caldwell-Luc CT
- T- (crista galli) 5 4 mm
- 1
- (Fig. 1, Fig. 2).
- 1) (Height of orbit) : (9), 13
- 2) (Width of face) :

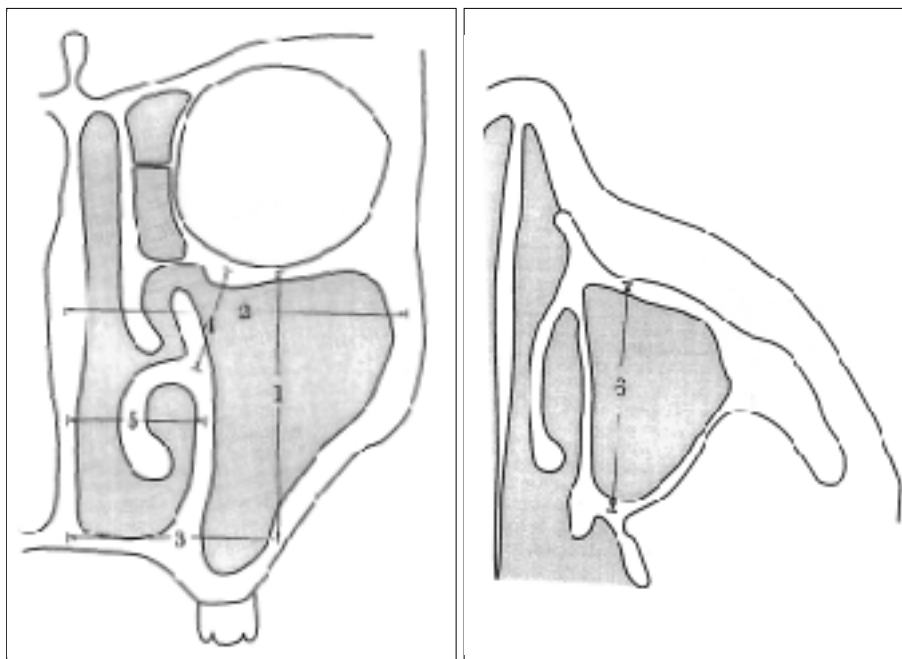


Fig. 1. Five parameters on coronal scan  
 1) Height of orbit  
 2) Width of face  
 3) Width of maxilla  
 4) Nasoantral communication width  
 5) Width of inferior meatus  
 Fig. 2. One Parameter on axial scan  
 6) Anterior-posterior diameter of the maxilla

1

2

(Fig. 4B),  
3 (Fig. 6), 2 (Fig. 5)  
Caldwell-Luc 4  
(Fig. 3),  
(Fig. 4A) 8 (Fig. 7)  
1  
28 27 (Fig. 3), 1  
(Fig. 4A) 7  
Caldwell-Luc  
(1).  
( $p<0.05$ ),  
(Fig. 5).  
(Table 1).  
(Table 1), 13 10%  
( $p<0.05$ )  
(Fig. 3), 15 (25%)  
(Fig. 4B). 7  
29  
(Fig. 3, Fig. 4).  
11  
가 8 ,  
가 3  
13  
15 5mm 2 , 5-10mm  
3 , 10mm 2  
(Fig. 4B).  
22

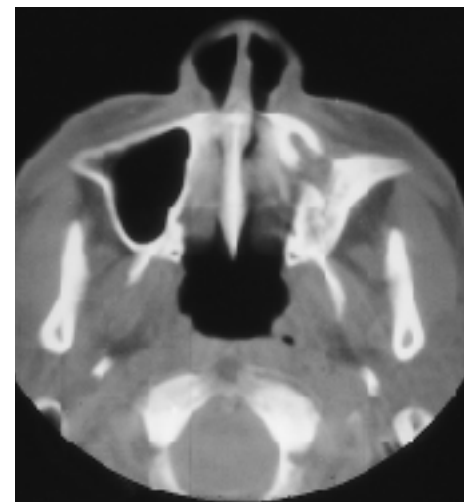


Fig. 3. A 35-year-old man who taken Caldwell-Luc operation on left maxillary sinus 12 years ago. Axial CT scan shows the bony defects in the anterior and medial sinus wall, and fibro-osseous proliferation with obliteration of the left maxillary sinus antrum.



A



B

Fig. 4. 47-year-old female underwent bilateral Caldwell-Luc surgery for bilateral purulent maxillary sinusitis 17 years ago.  
A. Axial CT scan shows irregular bony margins in the anterior(black arrow) and medial(white arrow) wall of the right maxillary sinus.  
B. Coronal CT scan reveals diffuse mucosal thickening with air-fluid level and fibro-osseous proliferation with contraction of the both maxillary sinuses, indicating recurrence of chronic purulent sinusitis.

: Caldwell-Luc

(1, 2).

Caldwell-Luc

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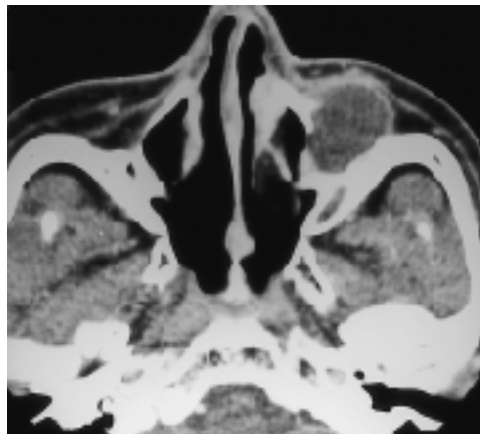
Table 1. Size Changes of Bony Wall and Volume Change of the Maxillary Sinus after Caldwell-Luc Operation (mm)

	Height of Orbit	Width of Face	Maxillary Width	Nasoantral Communication Width	Width of Inferior Meatus	Anterior-Posterior Diameter	Volume (mm <sup>3</sup> )
Male Normal (N= 42)	31.1	58.7	34.9	16.5	17.0	32.4	146.8
Post C-L op. (N= 17)	26.4	57.9	30.6	9.8	22.8	18.6	38.4
Female Normal (N= 21)	30.3	57.8	30.8	14.8	18.7	26.9	123.3
Post C-L op. (N= 18)	25.7	54.4	28.4	9.5	21.1	17.7	40.4

C-L op. : Caldwell-Luc operation



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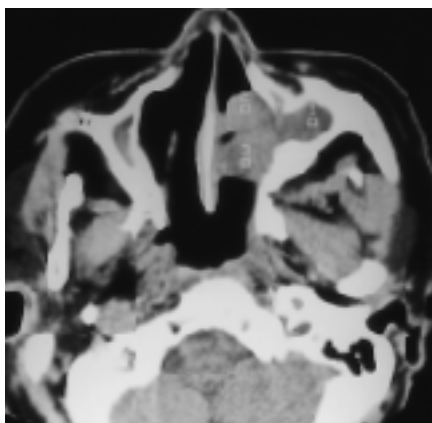


6

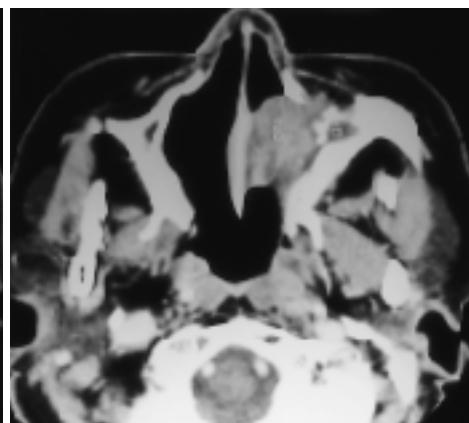
Fig. 5. Coronal CT scan of a 46-year-old female patient taken left Caldwell-Luc operation 21 years ago shows oroantral fistula, and diffuse mucosal thickening and compartmentation with a osseous septum in the postoperative left maxillary sinus.

Fig. 6. 36-year-old male taken both Caldwell-Luc operation 12 years ago.

Post-contrast axial CT scan at the level of the inferior turbinate shows a cystic mass in the left maxillary sinus protruding anteriorly through the surgical bone defect. This was a mucocele. Obliteration of the right maxillary sinus antrum is seen.



A



B

Fig. 7. 70-year-old female taken left Caldwell-Luc operation for inverted papilloma 12 years ago.

A. Pre-contrast axial CT scan shows a mass in the left nasal cavity extending into the postoperative left maxillary sinus.

B. Post-contrast axial scan shows heterogeneous moderate enhancement of the mass surgically proven recurrent inverted papilloma with squamous cell carcinoma.

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10 , 2 20 가 .

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(11) 5-6 1 名越 가 , (2, 13).

, 6 3 2 , 4 CT ,

3 . 1/3

Caldwell-Luc

6-8 가 . CT 29

CT ,

(12) Caldwell-Luc ,

Unger (6) - 8 가 , 가 3

, 27 ,

8 CT 가

28 27 Caldwell-Luc

1 - (5), 15 7

Caldwell-Luc 가

飯沼 (7) Cald- Defreitas (2) 670 Caldwell-Luc

well-Luc 1 20% , Murray (4) 40%

, Caldwell-Luc

, Caldwell-Luc

, Noyek (5)

CT

13 15 , Caldwell-Luc

7 (oroantral fistula),

(2, 4, 5).



## CT Findings of Change of the Maxillary Sinus after Caldwell-Luc Operation<sup>1</sup>

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**Purpose :** This study describes the CT findings of changes in the maxillary sinus after the Caldwell-Luc procedure.

**Materials and Methods :** The maxillary sinus-related findings in 35 cases among 20 patients (17 cases in 10 males and 18 cases in 10 females) who had undergone the Caldwell-Luc procedure mean 14.6 years earlier were reviewed. CT scans were obtained in the axial and coronal planes, with 5mm thickness. By means of the t test, changes in the size of the bony wall of the maxillary sinus, as well as antral volume change, were compared with the normal maxillary sinus group (41 male and 23 female cases). Males and females were compared separately, and surgical bony defect of naso-labial antrotomy and nasointral window, fibro-osseous proliferation, compartmentation and mucosal thickening of the postoperative maxillary sinus were evaluated, as were findings of chronic or recurrent maxillary sinusitis and postoperative complications.

**Results :** Naso-labial antrotomy was clearly identified in 27 of 35 cases, and irregular bony surface in the remaining eight, as were 27 bony defects and one irregular bony margin among a total of 28 cases of nasointral window. Due to shortening of the height of the orbit, reductions in maxillary width, nasointral communication width and anteroposterior diameter of the maxilla, and widening of the width of the inferior meatus, the maxillary sinus tended to become hypoplastic and centripetally contracted. Reduced cavitory volume of the maxillary sinus was noted ( $p < 0.05$ ), and fibro-osseous proliferation ( $n = 29$ ), compartmentation ( $n = 11$ ), and mucosal thickening ( $n = 22$ ) of the postoperative maxillary sinus were also seen. There were findings of chronic sinusitis ( $n = 22$ ), as well as complications of postoperative mucocele ( $n = 3$ ) and oroantral fistula ( $n = 2$ ) of the maxillary sinus.

**Conclusion :** The characteristic maxillary sinus-related findings seen after the Caldwell-Luc procedure are helpful in distinguishing postoperative change from recurrent paranasal diseases and resulting complications.

**Index words :** Paranasal sinuses, CT  
Paranasal sinuses, surgery

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개최일 시간	4월 21일 (금)					4월 22일 (토)					
	Room A	Room B	Room C			통합 Room					
07:00 -	등 록					등 록					
08:00 -	소화기제	뇌신경제	중 재	중 례 퀴 즈 (1)	의 료 기 기 전 시	맥로삼·저로삼 수상 및 논문발표 위칭, Brach, 세로네기술 신당식 삼일, 나미코레드, 동갑, 위칭 삼백기술 신당식		의 료 기 기 전 시			
08:30 -						축감: 김창호 관장(경주대학교 박동관) - 경주문화의 이해 -					
09:00 -						Technical Forum - PACS -					
09:30 -						Symposium - International Aseurysms - 진행 : 김동익(연세의료)					
10:00 -						춘계 방사선학술대회 회고: 황창욱(한림의료)					
10:30 -	이사회					오찬					
11:00 -	오찬					오찬					
12:00 -	소화기제	두경부	흉 부	중 례 퀴 즈 (2)	의 료 기 기 전 시	2000년도 춘계 전공의 연수교육 - Radiological Embryology -					
12:30 -		소 아									
13:00 -	근골격제	비뇨기제	심혈관계								
13:30 -											
14:00 -		컴퓨터물리타	유 발								
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