

CT

1

.

: CT (anterior ethmoidal sinus) (lacrimal sac fossa)
(dacryocystorhinostomy)

53 (:
2 mm
" C "

=33:20) 106 CT
2 mm 3
가

(posterior lacrimal crest) 3가
가 , 2 가
(lacrimal bone) (frontal process of the max -
illa) (lacrिमomaxillary suture) , 3 가

53 106 1 6.6%
(7/106), 2 71.7% (76/106), 3 21.7% (23/106)
, 77.4% (41) , 22.6% (12)

CT

(lacrimal sac) (nasolacrimal
duct) (lacrimal sac fossa) (naso -
lacrimal canal) (1 - 5). 가 (anterior ethmoidal air cell)가
(epiphora), 가 (lacrimal sac fossa)
(dacryocystitis) (19 - 23).
(1, 6, 7).
(Dacryocystorhinostomy)
(8 - 16).
(17, 18).

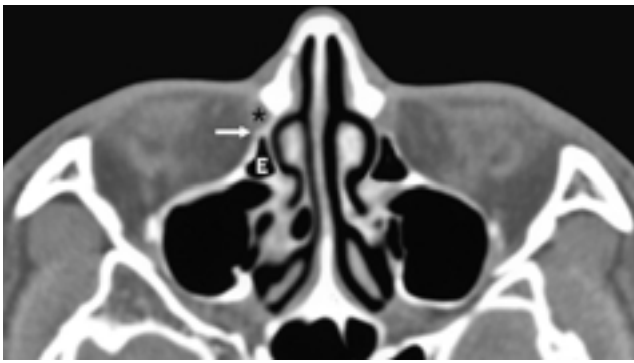


Fig. 1. Type 1.

There is no sinus anterior to the posterior lacrimal crest (arrow). Lacrimal sac fossa (asterisk), anterior ethmoid sinus (E)

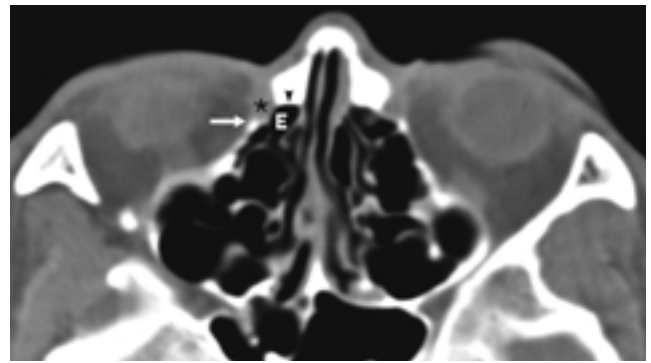


Fig. 2. Type 2.

Anterior ethmoid sinus(E) extends anterior to the posterior lacrimal crest(arrow) but remained the suture(arrowhead) at the anterior edge of the lacrimal bone. Lacrimal sac fossa(asterisk).

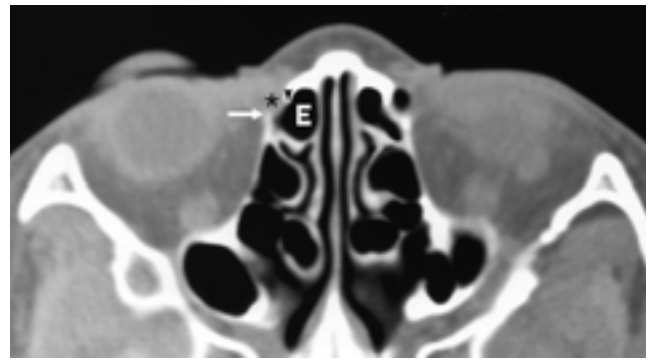


Fig. 3. Type 3.

Anterior ethmoid sinus(E) extends into the frontal process of the maxilla, anterior to the lacrimal bone suture[arrowhead]. Lacrimal sac fossa[asterisk], the posterior lacrimal crest[arrow].

53, 33:20,
15-64 (39) 53
106 CT CT
Somatom Plus 40 (Siemens, Erlangen, Germany)
2 mm 2 mm 3
“C”
가

(posterior lacrimal crest)

3가 1가

, 2가

(lacrimal bone) (frontal process of the maxilla)

(lacrimomaxillary suture),

3가

.

, 가 .

53 33 20 ,
15 - 64 39 . 53 106
CT ,
가 1 (Fig. 1) 7 (6.6%), 가
- 2 (Fig. 2)
76 (71.7%), 가
3 (Fig. 3) 23 (21.7%) . , 가
2 3 가 99
93.4% . 53 41
(77.4%) , 12 (22.6%) .

(6). 3% 가

(6). 가

가

. 1904 Toti

(8),

(9 - 18).

가

6.6%

가

가

가

가

85 - 90%

(18).

가

CT

가

가

(24).

3 - 5

가

가

12

(21).

2

(19).

Whitnall

1911

100

86

가

(19), Mosher

(20)

Mattox

Delaney

(21), Bagatella

Guirado (22),

Terrier

CT

(23)

가

, Welham Wulc

가

(25).

가

, 93.4%

가

21.7%

93.4%

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Anatomical Relation between Anterior Ethmoidal Sinus and Lacrimal Sac Fossa on High Resolution CT¹

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Purpose: To evaluate the anatomical relation between anterior ethmoidal sinus and the lacrimal sac fossa, and thus help prevent complications during dacryocystorhinostomy.

Materials and Methods: Fifty three people without previous history of trauma, surgery, or paranasal sinus disease were randomly selected, and the 106 lacrimal sac fossas of these subjects were evaluated by high resolution CT. A series of three 2-mm thick axial sections at least 2 mm from the inferior orbital wall were obtained. The bony landmarks of the lacrimal sac fossa were established and the location of the most anterior ethmoid sinus was classified as one of three types. In type 1, no sinuses were anterior to the posterior lacrimal crest. while in type 2, sinuses extended anterior to this crest but remained behind the suture at the anterior edge of the lacrimal bone. In type 3, sinuses extended into the frontal process of the maxilla, anterior to the lacrimal bone suture. In addition, the category of both orbits of the same patient was compared.

Results: Among the 106 orbits examined, only seven (6.6%) were classified as type 1, with no ethmoid air cells positioned under the lacrimal sac fossa. Seventy six (71.7%) qualified as type 2, while the remaining 23 (21.7%) were type 3, demonstrating anterior ethmoid air cells within the nasal process of the maxilla. The position of the air cells was symmetric in 41 of the 53 subjects (77.4%) and asymmetric in 12 (22.6%).

Conclusion: In cases involving surgery of the lacrimal sac fossa, such as dacryocystorhinostomy, a knowledge of the consistent anatomic relationship between the anterior ethmoidal sinus and the lacrimal sac fossa is invaluable.

Index words : Anatomy
Paranasal sinuses, CT
Lacrimal gland and duct

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