



:
 (CT)
 : (11 , 1) (3) 15
 (8 , 7 , 15.8), 16
 CT
 , S
 : 13 12 , 1
 (n=8, 73%) (n=8, 62%), (n=7, 54%), (n=7, 54%),
 62%), (n=8, 62%), (n=12, 92%), (n=10, 77%)
 (n=6, 46%) 4 (31%),
 1 (8%) 3 2
 1
 :
 , CT 가

10,000 - 20,000 1 , 가 (7, 10).
 (1). 16 CT
 가 (2, 3).

CT가 가 15 16 (11 , 8
 (2, 4 - 9). 1) (3) 15.8
 7 1 - 54

¹가
²가

30 120
1 mm 2 mm
CT
가
가 1 (8%)
가 1 (8%)
(n=6, 46%), S (n=2, 15%)
(n=6, 46%) (n=3, 25%)
(n=7, 54%),
(n=8, 62%)
3
1 (Fig.
3), 1
1

12 가 8
(Fig. 1), (Fig. 2)
3 13 (n=8, 73%)
CT 가
12 ,
1
(Table 1).
(n=8,
62%) (n=8, 62%)
12 (n=8, 62%) (n=4,
31%) , 10 (77%) (n=5,
38%), (n=2, 15%), (n=3, 23%)
5 (38%)

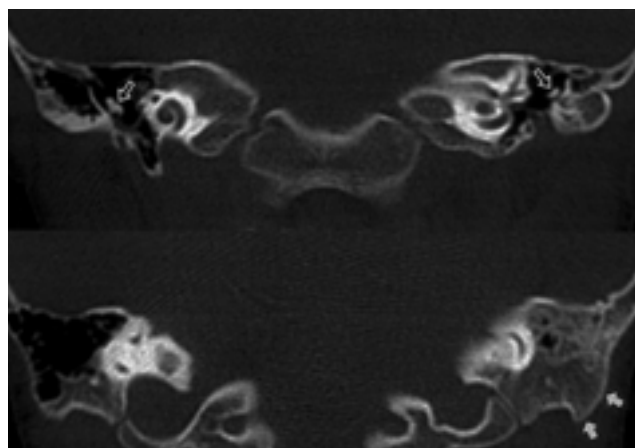


Fig. 2. A five-year-old girl with bilateral EAC atresia. Coronal images show bilateral EAC atresia with bony atretic plates. Ossicles are bilaterally dysplastic (open arrows) and pneumatization is decreased in left mastoid process (arrows).

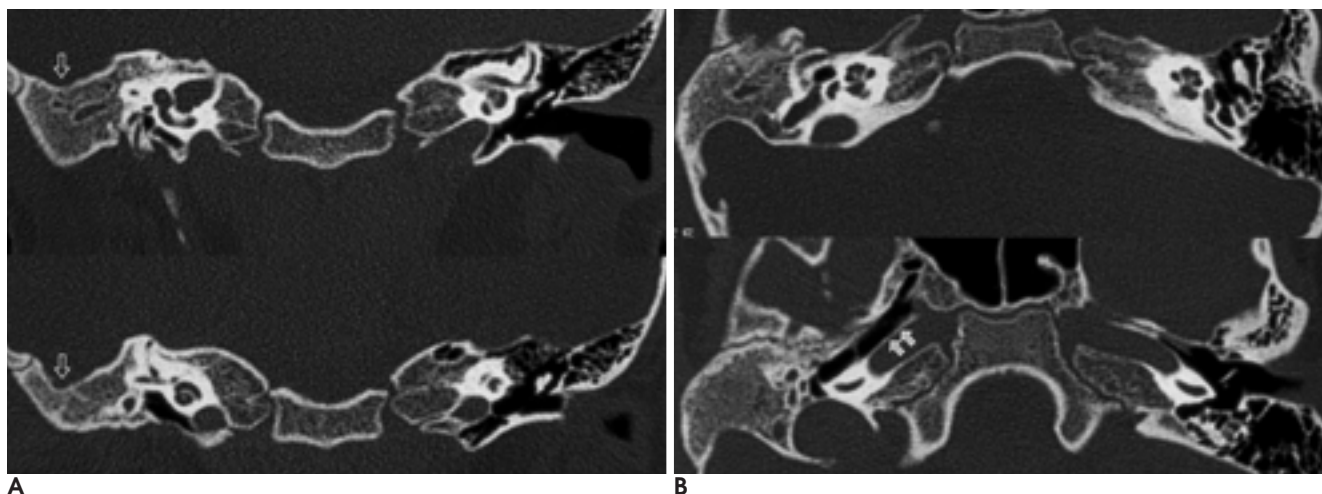


Fig. 1. An eight-year-old boy with right EAC atresia.
A. Coronal images show bony atretic plate with small middle ear cavity. Middle ear ossicles are absent and mastoid process is acellular. There is inferior displacement of middle cranial fossa base (open arrows). No inner ear abnormality is associated.
B. Axial image shows patulous ipsilateral Eustachian tube (arrows).

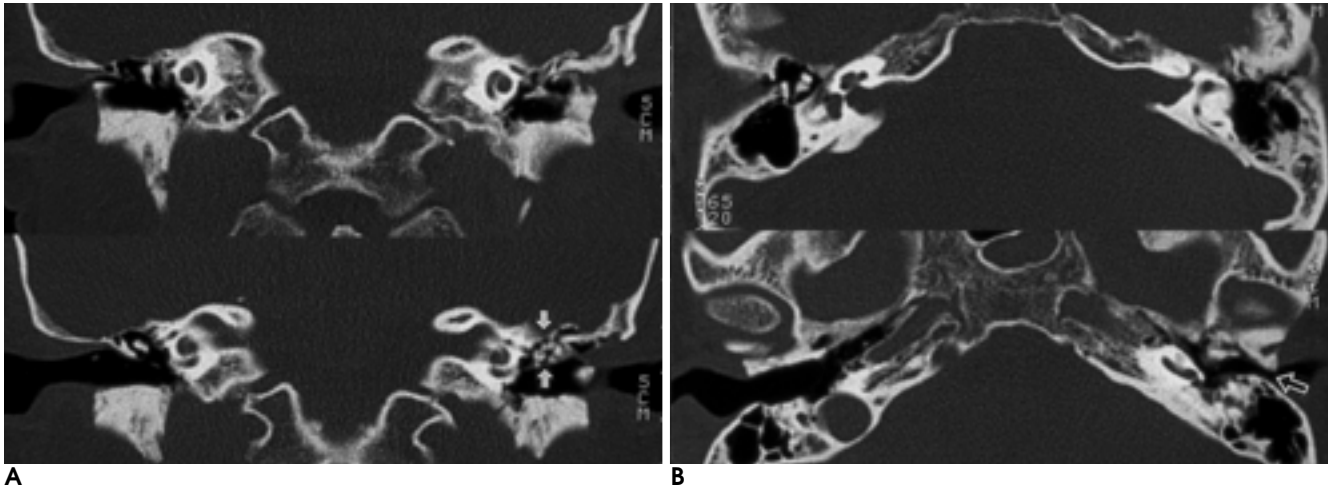


Fig. 3. A 27 year-old-woman with left EAC stenosis.

A. Coronal images show hypoplasia of left middle ear cavity and dysplastic ossicles (arrows).

B. Stenotic change involves the left EAC on axial images (open arrow). No other abnormality is found.

Table 1. External Auditory Canal Atresia and Stenosis: Associated Abnormalities

Associated Abnormalities.	Atresia (n = 13)	Stenosis (n = 3)
Small Tympanic cavity	8	1
Malleus		
dysplastic	8	1
displaced	0	0
absent	4	0
Incus		
dysplastic	5	1
displaced	2	0
absent	3	0
Stapes		
dysplastic	1	1
displaced	0	0
absent	5	0
Decreased mastoid pneumatization	8	0
Abnormal facial nerve course	4	0
Displacement of		
Mandibular condyle, posterior	2	1
Condylar fossa, posterior	6	1
Sigmoid sinus, anterior	3	0
Jugular bulb, superior	6	0
Middle cranial fossa base, inferior	8	1
Widening of Eustachian tube	7	0
Internal auditory canal abnormality	1	0

(3, 11 - 13).

, 11 (8%), 8 가 (2, 3), 가 (malleus), (tensor tympani) (incus) (Meckel cartilage), (footplate) (Reichert cartilage), 가 (3, 5, 8, 13), (12/13, 92%) (11/13, 85%) 1 (8%), 5 (38%) 가 (Mayer) (5) (microtia) 56 - 98%, 15.5 - 17.2%, 34.5 - 56%

(arch) 가 (groove)가 9 가 30 가 가

CT

(6, 7). (styloid process),

가 가

(4, 8),
가
Swartz (8) 15
(n=7),
(n=8),
(62%),
(62%)

(4),
(8, 14).
(n=7),
(n=5)
(54%),
Swartz

가 1 ,
가 3
Mayer (5) (major microtia)
(14.3%)
(28.6%) (73.8%)

가
가
가
가
가
(15, 16),
CT
(7).
62%가
가
2/3
가
가
4% 30%
(1, 17). 13
3 1
CT 가
가

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Congenital External Auditory Canal Atresia and Stenosis: Temporal Bone CT Findings¹

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Purpose: To determine the computed tomographic (CT) findings of atresia and stenosis of the external auditory canal (EAC), and to describe associated abnormalities in surrounding structures.

Materials and Methods: We retrospectively reviewed the axial and coronal CT images of the temporal bone in 15 patients (M:F=8:7; mean age, 15.8 years) with 16 cases of EAC atresia (unilateral $n=11$, bilateral $n=1$) and EAC stenosis (unilateral $n=3$). Associated abnormalities of the EAC, tympanic cavity, ossicles, mastoid air cells, eustachian tube, facial nerve course, mandibular condyle and condylar fossa, sigmoid sinus and jugular bulb, and the base of the middle cranial fossa were evaluated.

Results: Thirteen cases of bony EAC atresia (one bilateral), with an atretic bony plate, were noted, and one case of unilateral membranous atresia, in which a soft tissue the EAC. A unilateral lesion occurred more frequently on the right temporal bone ($n=8$, 73%). Associated abnormalities included a small tympanic cavity ($n=8$, 62%), decreased mastoid pneumatization ($n=8$, 62%), displacement of the mandibular condyle and the posterior wall of the condylar fossa ($n=7$, 54%), dilatation of the Eustachian tube ($n=7$, 54%), and inferior displacement of the temporal fossa base ($n=8$, 62%). Abnormalities of ossicles were noted in the malleolus ($n=12$, 92%), incus ($n=10$, 77%) and stapes ($n=6$, 46%). The course of the facial nerve was abnormal in four cases, and abnormality of the auditory canal was noted in one. Among three cases of EAC stenosis, ossicular aplasia was observed in one, and in another the location of the mandibular condyle and condylar fossa was abnormal. In the remaining case there was no associated abnormality.

Conclusion: Atresia of the EAC is frequently accompanied by abnormalities of the middle ear cavity, ossicles, and adjacent structures other than the inner ear. For patients with atresia and stenosis of this canal, CT of the temporal bone is essentially helpful in evaluating these associated abnormalities.

Index words : Computed tomography (CT)
Temporal bone, abnormalities
Temporal bone, CT
Ear, abnormalities

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