

## 돌발성 난청을 주소로 내원한 청신경종양의 임상양상

정연훈<sup>1</sup> · 박기현<sup>1</sup> · 신유리<sup>1</sup> · 이진석<sup>1</sup> · 이원상<sup>2</sup> · 최호석<sup>3</sup>Clinical Characteristics of Vestibular Schwannoma Presenting  
as Sudden Hearing LossYun-Hoon Choung, DDS, MD<sup>1</sup>, Keehyun Park, MD<sup>1</sup>, Yuri Shin, MD<sup>1</sup>,  
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## -ABSTRACT-

**Background and Objectives** : In many cases of vestibular schwannoma (VS), hearing loss is gradually progressive, but some cases of VS show a sudden onset of hearing loss. The purpose of this study is to analyze the incidence of the patients with VS presenting sudden sensorineural hearing loss (SSNHL) among the several chief complaints and to identify their clinical and laboratory characteristics. **Patients and Methods** : We reviewed retrospectively 87 patients with VS who were diagnosed at the Departments of Otolaryngology, Ajou University Hospital and Yonsei University Hospital from 1994 to 2002. We analyzed chief complaints, size of tumor, pure tone averages (PTA), audiologic studies, caloric tests, imaging studies, and treatment modalities of patients. **Results** : Eighteen (20.7%) out of 87 patients with VS presented SSNHL as an initial presenting symptom, which was the second most common. The tumor size of patients with SSNHL was small as average 1.4 cm. Their ipsilateral canal paresis was correlated with tumor size, while their PTAs were not. In two out of 18 patients with SSNHL, hearing was recovered partially or completely following steroid therapy. **Conclusion** : Sudden sensorineural hearing loss can be the first symptom of VS. The patients with unilateral SSNHL, even with recovery, must be evaluated for a possible VS. (J Clinical Otolaryngol 2005;16:54-59)

**KEY WORDS** : Vestibular schwannoma · Sudden deafness · Pure tone audiometry · Caloric test.

서  
론

가 10%  
가 0.8%  
90% 30% 3)4)

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2.9 cm, 3.0 cm  
 Pearson  
 Chi - square  
 SPSS(Windows Ver. 10.0.7)

가<sup>2)</sup>  
 가  
 가<sup>2)5)6)</sup>  
 가<sup>7)8)</sup> 가<sup>9)10)</sup>  
 가 Park ga-  
 dolinium(Gd) fast spin echo(FSE)  
 T2  
 6)

가 87  
 가 41 (47.1%) 가  
 가 18 (20.7%)  
 11 (12.6%), 7 (8.0%),  
 가 4 (4.5%),  
 가 6 (6.8%)  
 44.8 (24~64 )  
 가  
 7 : 11  
 2.9 cm, 2.5 cm, 2.0  
 cm, 가 2.0 cm, 1.3 cm,  
 1.4 cm  
 (canal paresis, CP)

**대상 및 방법**

1994 3 2002 12  
 87  
 35 , 0.5~2.5  
 52 , 16 64 cm 1.4 cm  
 48.5 , 가 40 , 1.0 cm 4 (22.2%), 1.0~1.9 cm  
 가 47 , , 10 (55.6%), 2.0 cm 4 (22.2%) 3.0  
 cm (Table 2). , 2 cm  
 , 18 14 77.8%  
 66.7 dB 1.0 cm  
 0.5, 1, 2, 3 KHz 60.0 dB, 1.0~1.9 cm 67.0 dB, 2 cm  
 , 72.5 dB 가 가  
 0~0.9 cm, 1.0~1.9 cm, 2.0~ 가 (Table 2),

**Table 1.** Comparison of clinical characteristics of patients with vestibular schwannoma according to chief complaints

C.C.	No. (%)	Size (cm)	PTA (dB)	No. of CP (%)	Mean CP (%) †
Progressive HL	41 (46.6)	2.5	75.2	21 (51.2)	77.6
Tinnitus	11 (12.5)	2.0	35.0	6 (54.5)	54.6
Dizziness	7 (79.5)	1.3	51.6	7 (100)	72.1
Facial palsy	4 ( 4.5)	2.9	90.0	3 (75.0)	80.0
Detected by chance	6 ( 6.8)	2.0	39.0	4 (66.6)	55.2
Sudden HL	18 (20.7)	1.4	66.7	13 (72.2)	65.2
Total or mean*	87	2.0*	59.6*	52 (59.8*)	67.5*

C.C. ; chief complaints, No. ; number, PTA ; pure tone averages (0.5, 1, 2, 3 KHz), CP ; canal paresis, HL ; hearing loss, \* : mean, † : the mean of the abnormal CP

**Table 2.** Comparison of clinical characteristics of patients with vestibular schwannoma presenting sudden sensorineural hearing loss according to tumor size

Size (cm)	No. (%)	PTA (dB)	No. of CP (%)	Mean CP (%) †
0.1 -0.9	4 (22.2)	60.0	2 (50.0)	43.0
1.0 -1.9	10 (55.6)	67.0	7 (70.0)	57.0
2.0 -2.9	4 (22.2)	72.5	4 (100)	90.8
Total or mean*	18	66.7*	13	63.6*

No. ; number, PTA : pure tone averages (0.5, 1, 2, 3 KHz), CP ; canal paresis, \* : mean, † : The mean of the abnormal CP

( $r=0.352, p=0.352$ )(Fig.

1).

18 13 (72.2%)

63.6% (Table 2).

CP

1.0 cm 4 2 (50.0%)

CP 43.0% , 1.0~1.9 cm 10 7

(70.0%) CP 57.0% , 2 cm 4

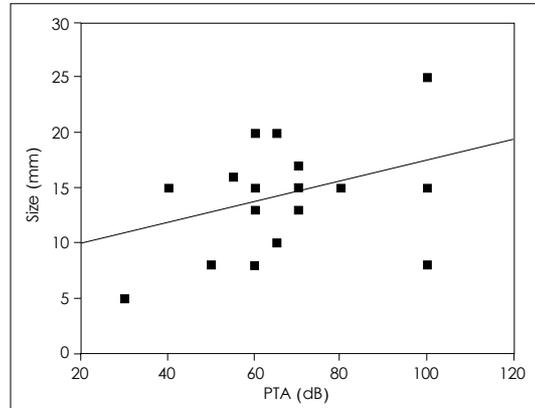
4 (100%), CP 90.8%

가

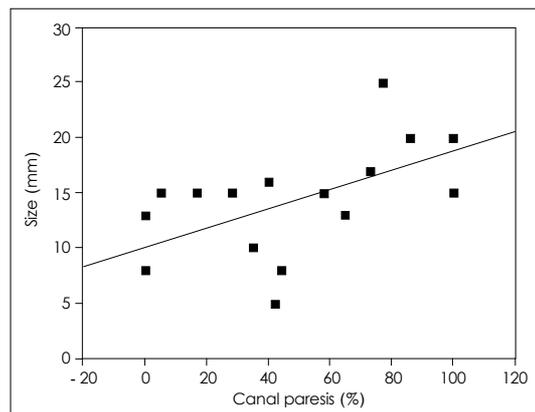
가 (p=0.059),

CP (r=0.616,

p=0.007), CP 가 (Fig. 2).



**Fig. 1.** Correlation between the tumor size and hearing of patients with vestibular schwannoma presenting sudden sensorineural hearing loss. They are not correlated each other ( $r=0.352, p=0.352$ ).



**Fig. 2.** Correlation between the tumor size and canal paresis of patients with vestibular schwannoma presenting sudden sensorineural hearing loss. They are correlated each other ( $r=0.616, p=0.007$ ).

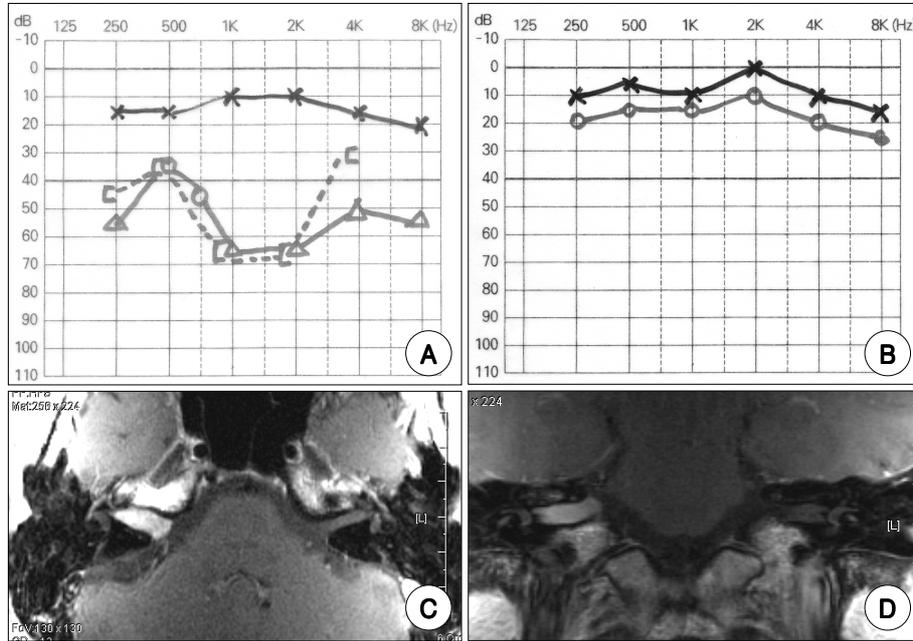
18 8 . 1

3

( ), 1

17

, 1 LINAC(Linear accelerator) radiosurgery , 1



**Fig. 3.** A case of 45 year-old woman with vestibular schwannoma presenting as sudden hearing loss with recovery. A : The initial pure tone audiogram (PTA) showed right-side moderate sensorineural hearing loss. B : PTA taken in third day after steroid therapy showed normal hearing. C, D : Gd-enhanced MRI showed enhanced an intracanalicular tumor in axial (C) and coronal (D) views.

**증례**

45세 여자 환자로, 1달 전 갑자기 시작된 우측 고주파수 청각장애를 주소로 내원하였다. 초기 순음청력검사(Fig. 3A)는 우측 고주파수 청각장애를 시사하며, 평균청력(PTA)은 55 dB(Fig. 3A), 45dBHL 96%였다. 입원 후 3일째에 시행한 순음청력검사(Fig. 3B)는 양측 정상청력을 보였다. MRI 검사(Fig. 3C)는 FSE T2 상에서 12 mm 크기의 우측 내인두성 양성강화 병변을 관찰하였다. LINAC 방사선 수술을 시행하였다.

**고찰**

가

11) . Sel-  
 12) esnick 가 가 .  
 13) Shaia 3) 1220 0.8%가  
 1999 Chaimoff 13) 47.5%  
 Moffat 2) 10.2%  
 14) Park 5) 1.5 cm 33.3%가  
 88 가 19%

가 47.1%,  
 가 20.7% , Massick <sup>17)</sup>  
 . . . . . 0.9 cm 60.0 dB,  
 Ogawa <sup>15)</sup> 1.0~1.9 cm 67.0 dB, 2.0 cm 72.5  
 가 가  
 Moffat <sup>2)</sup> (internal labyrinthine artery) (Fig. 1). 가  
 가 <sup>16)17)</sup> 가 가 (100%)  
 2 가 (end artery) 75.0% , CP 54.6~80.0% (51.2~  
 가 (75.0%) CP(80.0%) 가 가  
 Massick <sup>17)</sup> 4 가 가 (2.9 cm)  
 가 18 CP가  
 가 가 (Fig. 2), Ogawa <sup>15)</sup>  
 가 가  
 Kentala <sup>20)</sup> 가  
 가 <sup>18)</sup> 가 , 가  
 가 15~20 mm 가 <sup>19)</sup> 가 가  
 87 가 가  
 2.9 cm, 2.5 cm, 18 8  
 2.0 cm, 가 2.0 cm, 1 , 1  
 1.3 cm, 1.4 cm , ,  
 가 가 (Fig. 3)  
 Ogawa <sup>15)</sup> 132 FSE  
 29 가 FSE  
 가 , 가  
 Park <sup>16)</sup> serviceable hearing level  
 50 dB( ), 50%( )

surgery, 1  
 , 17  
 , 1 LINAC radio-  
 .  
 ,  
 가  
 가  
 .  
**결 론**  
 , 20.7% .  
 1.4 cm , 가  
 가  
 가

중심 단어 :

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