## **P107**

# The operation of lower cranial nerve tumors in our department





North American Skull Base Society

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### Introduction

>Lower cranial nerve tumors are rare, accounting for 2.9% of intracranial nerve tumors, but they can cause lower cranial nerve symptoms such as dysphagia, dysarthria, and dysphonia, as well as symptoms affecting ADL such as gait disturbance due to cerebellar compression, so care must be taken in selecting appropriate treatment and treatment modalities. >Radiation therapy has been widely reported as a treatment option, and surgical total removal of the tumor is curative. However, it is important to consider the approach based on the tumor progression and anatomy.

>Here, we report on surgical techniques and outcomes of lower cranial schwannoma in our institution.

## Cases presentation

Periods : 2019.8-2024.5

Patients : 9cases

Symptomatic cases: Surgery and radiation therapy were presented and surgical treatment was requested.

	case	R/L	age	sex	origin	LT*	pre-OP	$CA^{\overleftrightarrow}$	Approach		
	1	R	33	F	XII	D	XII		Transcondylar		
	2	R	70	F	XII	D	XII		Transcondylar	☆CA : cerebellar	
	3	L	79	Μ	XII	А	IX,X		Far lateral	ataxia	
Ι,	4	L	34	Μ	Glomus	D	VIII,IX,XII		Mastoidectomy	★LT : Location type	
	5	R	58	Μ	IX	А	VIII	+	Far lateral	A: intradural	
	6	R	45	Μ	XII	D	none		Transcondylar	B: jugular foramen	
	7	R	38	Μ	XII	D	XII		Transcondylar	C: extradural	
	8	R	74	Μ	Х	А	none		Far lateral	D: dumbbell	
	9	L	25	F	Х	D	V,VI,WI,X,XI	+	Mastoidectomy		

Asymptomatic cases (2 cases): Young patients requested surgery, with edematous changes in the brain stem.









### <u>Results and Cases</u>

	Mastoid ti	p	Posterior edge of mastoid SS Line Superior nu	TS uchal lin	e e		期へのない			
ca se	origin	L.T. ★	Intradural size/type (mm)	B.L.V (ml)	OP time (h:m)	pre- OP	CA	post- OP	Tumor ☆	Complication
1	XII	D	22.6 / solid	234	13:42	XII	-	XII	TR	No change
2	XII	D	19.7 /solid	150	12:59	XII	-	XII	TR	No change
3	XII	A	22.5 / cystic	200	10:24	IX,X	-	X XII	TR	Transient dysphagia
4	glomus	D	10.2 / solid	100	12:01	₩IJ,IX XII	-	VIII	STR	Transient cardiac arrest(OPE) Hearing worsing(75→100dB)
5	IX	Α	32.5 / cystic	30	6:40	VIII	+	VIII	CR	Hearing improving(72 $\rightarrow$ 62dB)
6	XII	D	12.6 / solid	365	12:52	None	-	XII	STR	Transient facial palsy
7	XII	D	19.3/ cystic	240	11:41	XII	-	XII	TR	No change
8	Х	A	26.3 / cystic	50	8:31	None	-	IX X	CR	Dysphagia
9	Х	D	33.5 / solid	180	14:06	V , VI ₩, X ₩	+	₩ X	CR	Remain dysphagia Improved Ataxia and diplopia Hearing no change(21→29dB)
7	★Location type(L.T.) A: intradural, B: jugular foramen, C: extradural, D: dumbbell									
7	☆TR: total removal, STR: subtotal removal, CR: capsule remain									emain

## Case.9 Rt. CN X schwannoma

Intracranial part  $\rightarrow$  lateral suboccipital approach Extracranial part  $\rightarrow$  high cervical approach





#### Case.7 Rt. CN XII schwannoma

Intracranial part  $\rightarrow$  lateral suboccipital approach Extracranial part  $\rightarrow$  Transcondylar approach







Medial wall of JB



## Discussion

We decide the approach depending on the direction of tumor progression.  $\bullet$  Only intracranial tumors  $\rightarrow$  Lateral suboccipital approach

- ◆ Large tumors
- $\rightarrow$  Far lateral approach

(open the foramen magnum)

### **★**Jugular foramen tumor

- > Progression from the jugular foramen into the petrous bone  $\rightarrow$  Infralabyrinthine mastoidectomy
- Progression along the venous sinus to the extracranial space
  - $\rightarrow$  High cervical approach (Remove rectus capitis lateralis)

#### **★**Hypoglossal nerve schwannoma

- $\rightarrow$  Transcondylar approach (Preserve the joint) Intra hypoglossal canal
- $\rightarrow$  Extra hypoglossal canal  $\rightarrow$  High cervical approach
- ✓ For extra-dural tumors, we performed intracapsular removal.



CNX/XI

Jugulai

bulb

Jugular bulb

Emissery





>There is no fixed approach to surgery for tumors around the jugular foramen or hypoglossal canal. Based on the basic approach, it is important to consider additional approaches depending on the direction of tumor progression and the tumor size of the intra/extra dura.

CNX/XI

Sigmoid sinus

> It is important to aim for total removal, and we strive to remove the tumor while taking into consideration the capsule, especially for extra-dural tumor components.



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