

原文題目(出處)：	Schwannoma in Head and Neck: Preoperative Image Study and Intracapsular Enucleation for Functional Nerve Preservation. Yonsei Med J 2010;51:938-42
原文作者姓名：	Si Hong Kim, Na Hyun Kim, Kyung Rok Kim, Ja Hyun Lee, and Hong-Shik Choi
通訊作者學校：	Department of Otorhinolaryngology, Institute of Logopedics & Phoniatics, Yonsei University College of Medicine, Gangnam Severance Hospital, Seoul, Korea
報告者姓名(組別)：	陳威齊(Intern F 組)
報告日期：	2011. 01. 10

內文：

## Introduction

### 1. Schwannoma

- Benign neural sheath tumor (slowly-growing)
- Occur as a single entity in many cases
- Occur in overall body
  - Head and neck: 25%-40%
    - ◆ Vagus nerve
    - ◆ Sympathetic nervous system

### 2. surgical resection (before) → intracapsular enucleation (recently)

- preservation of the neurological functions

### 3. in this study

- **preoperative imaging studies** in distinguishing the neurological origin of the Schwannomas of head and neck
- efficacy of **intracapsular enucleation** in preserving the nerve function

## Materials and Methods

### 1. **7 patients** who were suspected with schwannoma at Department of Otorhinolaryngology Gangnam Severance Hospital from **March 2003 to September 2009**

- 3 men / 4 women
- Ages ranged between 46~71
- All patient complained of a neck mass as a major symptom

- 6 patients had normal nerve function
  - 1 patient complained ptosis
2. CT and MRI were performed
    - To examine the **location** of the tumor
    - Correlation with the **carotid artery** and the **internal jugular vein**
  3. all patients underwent **intracapsular enucleation**
    - expose the tumor in the carotid sheath
    - a vertical incision on capsule parallel to the direction of nerve
    - confirm the nerve fibers surrounded the tumor
    - intracapsular enucleation
      - the tumor was carefully dissected from the capsule without any damages to the nerve fibers
  4. vagus nerve and the sympathetic nerve was evaluated preoperatively and postoperatively
    - **vocal cord** mobility with laryngoscope
    - symptoms of **Hornor' s syndrome**

## Result

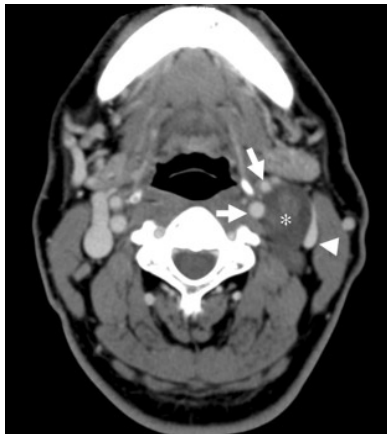


Fig.1

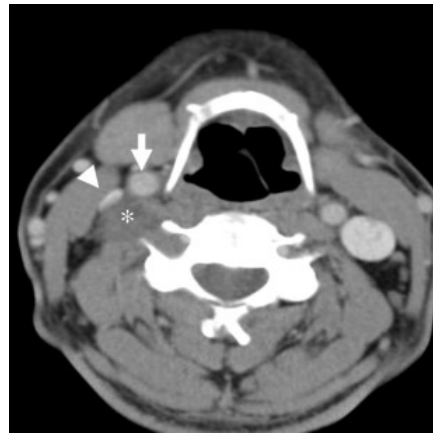
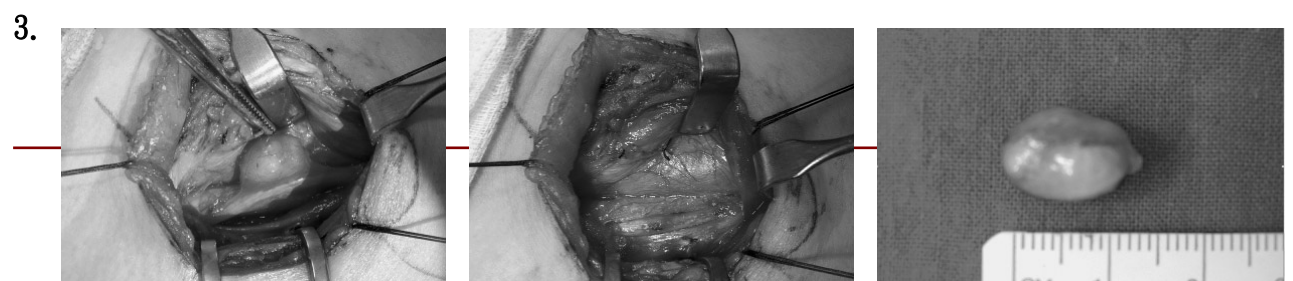
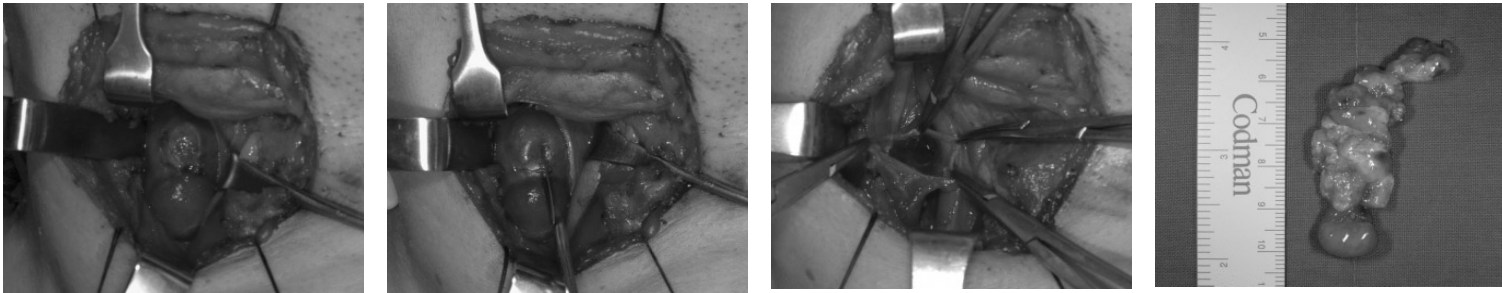


Fig.2

1. preoperative imaging
  - 6 cases(Fig.1) : tumor located **between** the **carotid artery** and the **internal jugular vein**
  - 1 case(Fig.2) : tumor located **posteriorly** displaying the **carotid artery** and the **internal jugular vein anteriorly**
2. at the time of operation, we confirmed
  - schwannoma originated from the **vagus** nerve on the first 6 cases
  - schwannoma originated from the **sympathetic** nervous system on the last case



- Operative findings and specimen of a **vagal schwannoma** patient



- Operative findings and specimen of a **sympathetic schwannoma** patient

4.

Patient no.	Nerve	Preoperative status	Postoperative status
1	Vagus	Normal	Normal
2	Vagus	Normal	Vocal fold paralysis
3	Vagus	Normal	Normal
4	Vagus	Normal	Normal
5	Sympahtic trunk	Ptosis	Ptosis (no interval change)
6	Vagus	Normal	Normal
7	Vagus	Normal	Normal

- 6 vagal schwannoma
  - 5 cases maintained normal postoperative neurological function
- 1 sympathetic schwannoma
  - No aggravated neurological deficits except for the **ptosis** which was observed preoperative

### Discussion

#### 1. schwannoma in head and neck

- mostly from **vagus nerve** and **sympathetic nervous system**
- vagal schwannoma : sympathetic schwannoma = **2~3 : 1**
- tumor size gradually increased
  - compress the maternal nerve fibers which go over the tumor capsule
  - nerve paralysis may occur preoperative

- ◆ vagal schwannoma : dysphagia and hoarseness
  - ◆ sympathetic schwannoma : Horner' s syndrome
  - however, there are **no symptoms** in most cases
2. in making differential diagnosis of intracranial tumors, imaging studies play a key role. Particular in case in which schwannoma was suspected.
    - **CT** and **MRI** offer great help in identifying the tumor and its correlations with surrounding vascular structure, muscles, and nerves
  3. in 1996, **Furukawa**, et al. performed imaging studies on 9 schwannoma patients, and suggested their neurological origin prior to surgery
    - accurate diagnostic rate of 100%
  4. in 2007, **Saito** et al. made an accurate diagnostic at rate of 83% prior to surgery in 12 schwannoma patients
  5. in this study, with the criteria proposed by **Furukawa**, et al. imaging studies were performed on all 7 cases
    - accurate diagnostic rate of 100%
  6. schwannoma
    - previously, to prevent recurrence, **radical dissection** was performed
    - most are **encapsulated**, nerve fibers surrounded the surface of tumor
      - **intracapsular enucleation** can be performed to preserve the nerve fibers
  7. Valetino, et al.
    - Intracapsular enucleation while preserve the nerve fibers preserved its function by **more than 30%** when compared to tumor resection
  8. previous studies reported the preservation rate of the neurological functions following the **intracapsular enucleation** to be **30~80%**
  9. in this study, the neurological function was preserved in 6 out of 7 cases
    - in the case of patient #2, intracapsular enucleation was performed routinely, however, multiple schwannomas directly connected to the nerve fiber were observed intraoperative
  10. many controversies exist regarding the **recurrence rate** between the

total tumor resection including nerve fibers and the intracapsular enucleation

- Zbären, et al., there was **no** significant difference in recurrence rate
- In cases where **partial remove** of tumor was performed, the recurrence rate has been reported to rise
- In this study, the mean follow-up period after surgery was 3.42 years, and **no recurrence**
- However, further long-term regular follow-up imaging studies are needed

題號	題目
1	Which is wrong about schwannoma? (A) a benign neural neoplasm (B) slow-growing (C) usually is asymptomatic (D) hard palate is the most common location for oral schwannoma
答案 (D)	出處：Oral & Maxillofacial PATHOLOGY second edition P. 456~P. 457
題號	題目
2	Which is not histopathologic feature of schwannoma? (A) Antini A (B) Antoni B (C) Starry sky (D) Verocay body
答案 (C)	出處：Oral & Maxillofacial PATHOLOGY second edition P. 456~P. 457