The International Federation of Head and Neck Oncologic Societies

Current Concepts in Head and Neck Surgery and Oncology 2017

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Current Concepts in Head and Neck Surgery and Oncology 2017

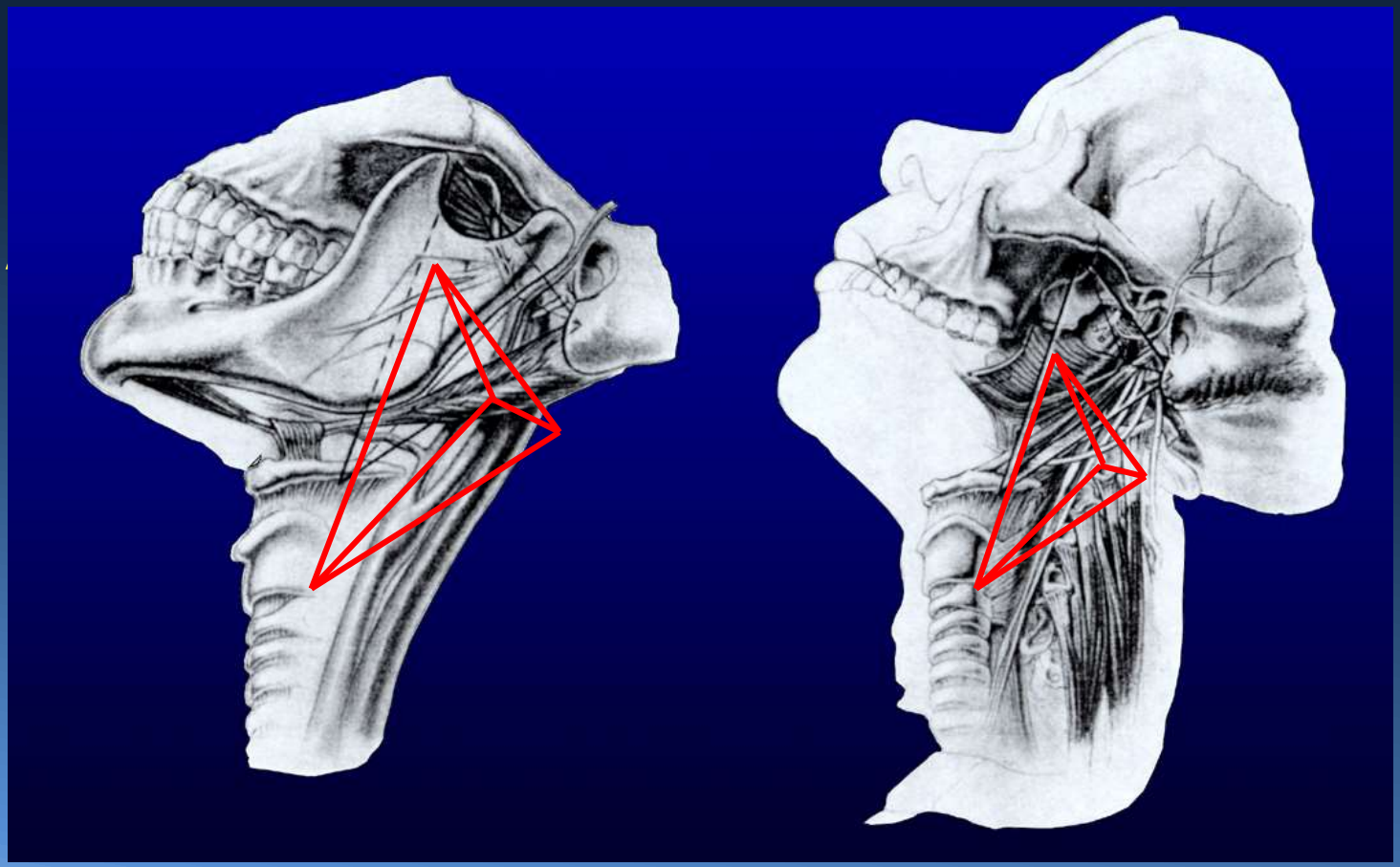
Parapharyngeal Space Tumours: Diagnosis and Management

Dr. Patrick Gullane

Management and approaches to tumors of the parapharyngeal space

- Purpose of the presentation
  - Review the anatomy of the parapharyngeal space
  - Review the investigations of parapharyngeal tumors
  - Review the pathology of parapharyngeal tumors
  - Review the surgical approaches to the parapharyngeal space

Parapharyngeal Space-Boundaries



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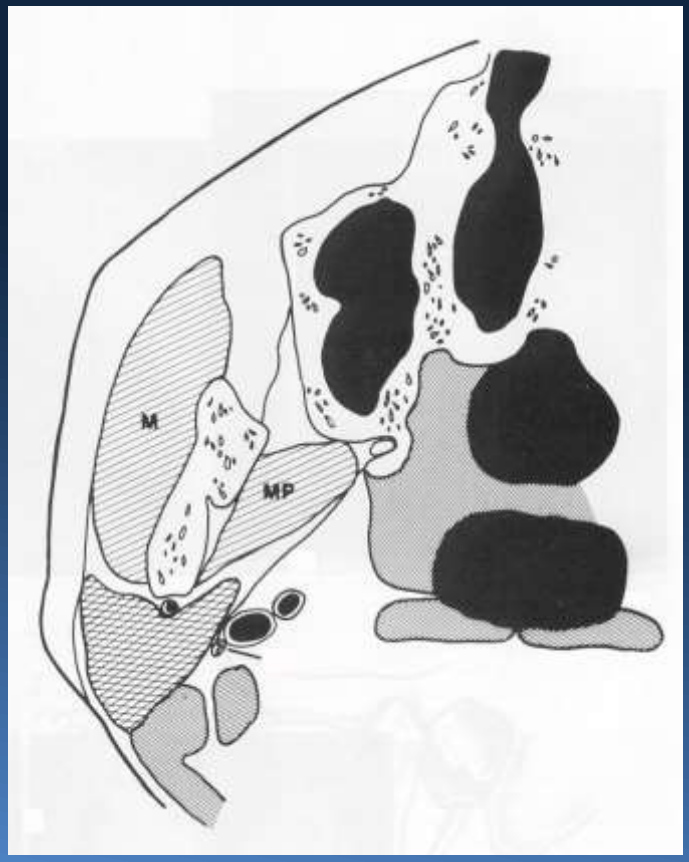
Parapharyngeal Space

Tensor Veli Palatini Tendon and Muscle

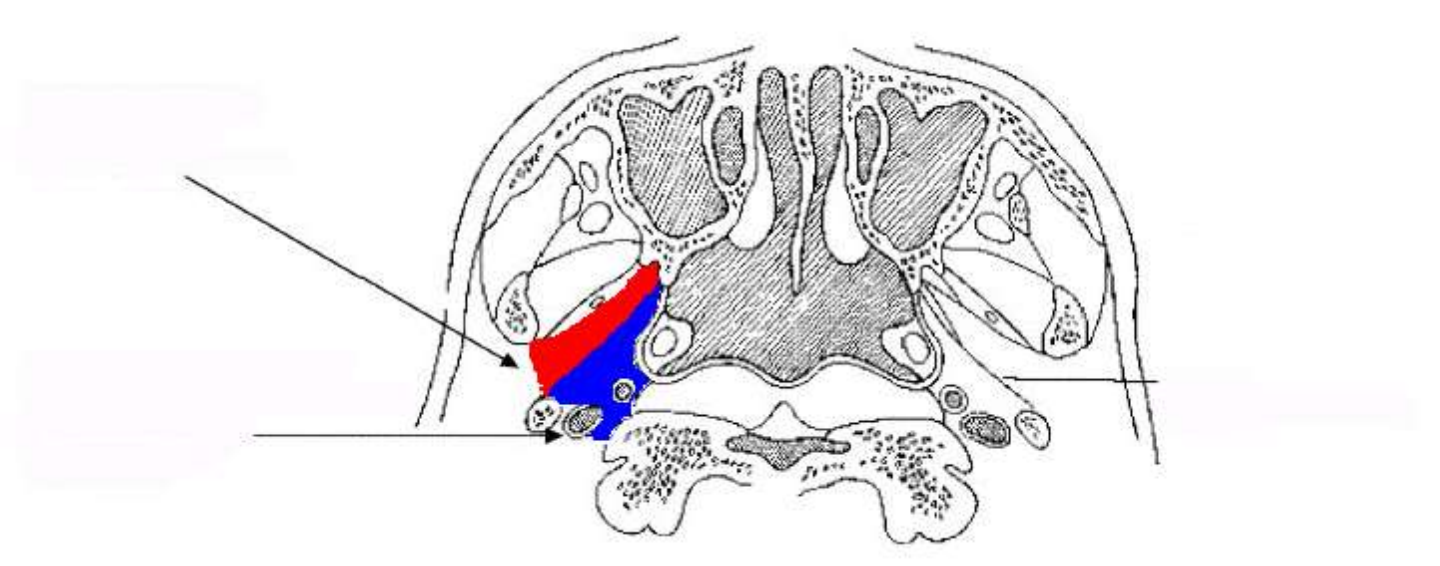


Curtin HD. Radiology 1987;163:195-204

Parapharyngeal Space

Prestyloid

Poststyloid



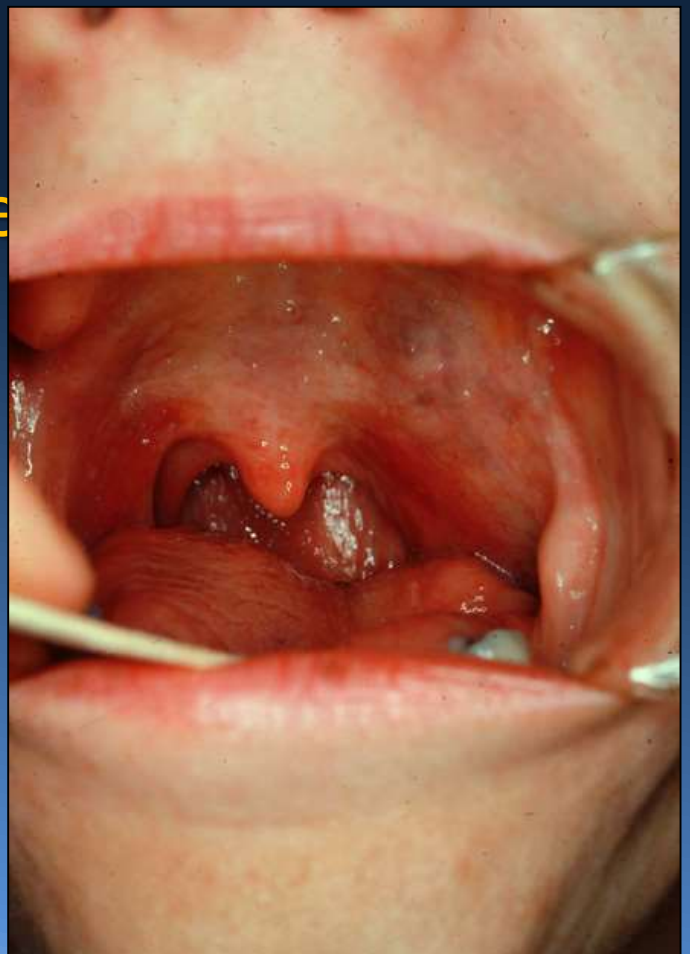
Parapharyngeal Space

- Prestyloid compartment contains
  fat, deep lobe parotid, minor salivary glands

- Poststyloid compartment contains
  carotid artery, internal jugular vein, CN IX – XII, sympathetic trunk, lymph nodes

Parapharyngeal Tumors

- Presenting features:
  - Neck mass
  - Oropharyngeal mass
  - Unilateral Eustachian tube
  - Dysphagia
  - Obstructive sleep apnea
  - Cranial nerve deficits
  - Horner syndrome
  - Pain
  - Trismus

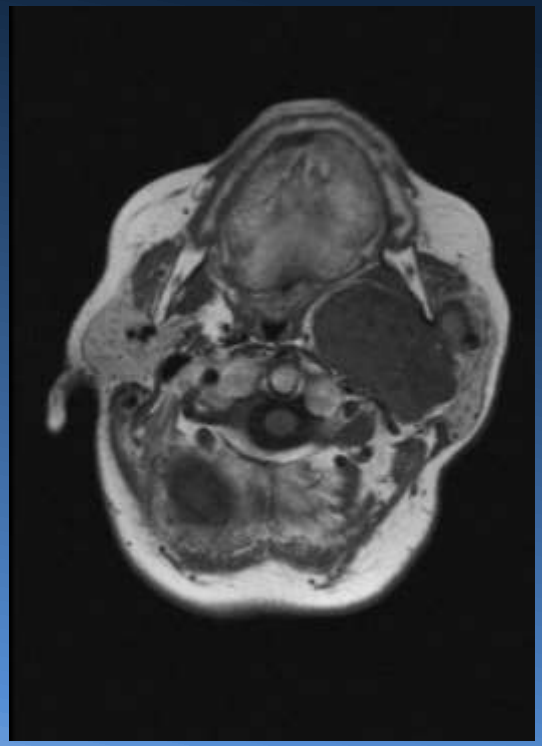


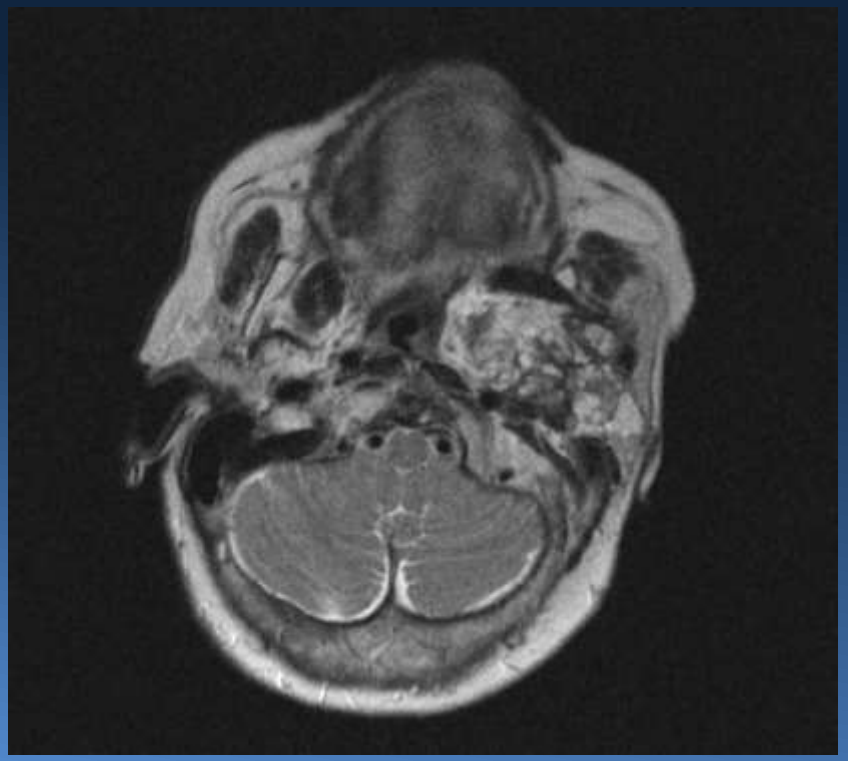
Parapharyngeal Tumors Evaluation

- Complete head and neck exam
- Imaging: MRI superior to CT
- Prestyloid or poststyloid?
- Relationship to the parotid gland (fat plane)?
- Relationship to the great vessels (anterior/posterior)?
- Soft tissue characteristics of the tumor?
- FNA after imaging!
- Transoral biopsy not recommended

Parapharyngeal Tumors

Originating from Deep Lobe Parotid





Parapharyngeal Tumors Pathology

- Benign 80%
- Malignant 20%
- Direct extension, metastasis, primary tumors

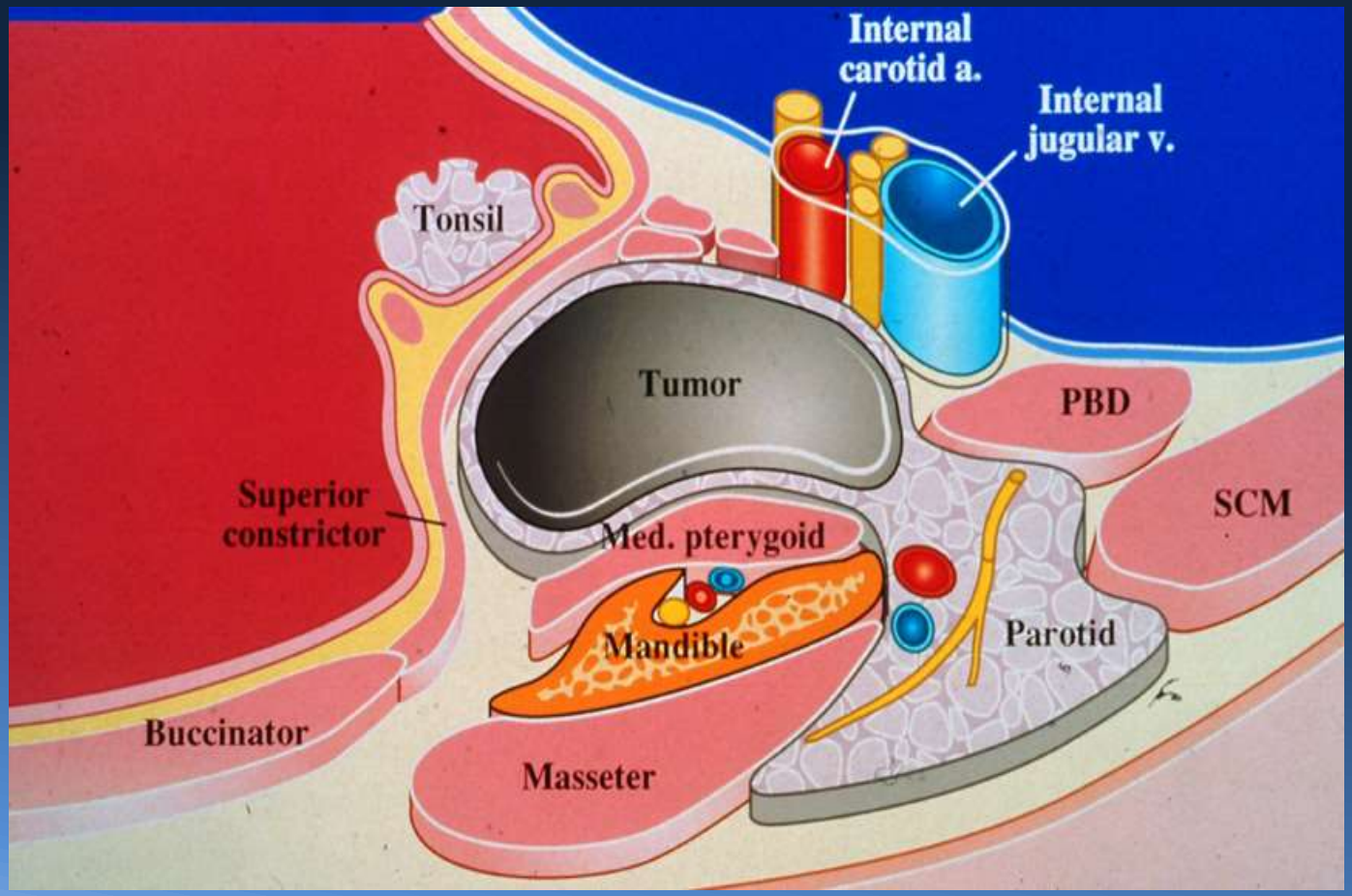
Parapharyngeal Tumors
Primary Tumors

- Three categories:
  - Salivary gland tumors
  - Neurogenic tumors
  - Miscellaneous tumors

Parapharyngeal Salivary Gland Tumors

- Most common PPS neoplasms
  - Prestyloid masses
    - Pleomorphic adenoma 80-90%
    - Mucoepidermoid most common malignant
    - Less than 5% parotid tumors involve the PPS

Parapharyngeal Tumors



Parapharyngeal Post-Styloid

- Poststyloid masses
  - Paraganglioma
    - Carotid body tumor
    - Vagal paraganglioma
  - Schwannoma

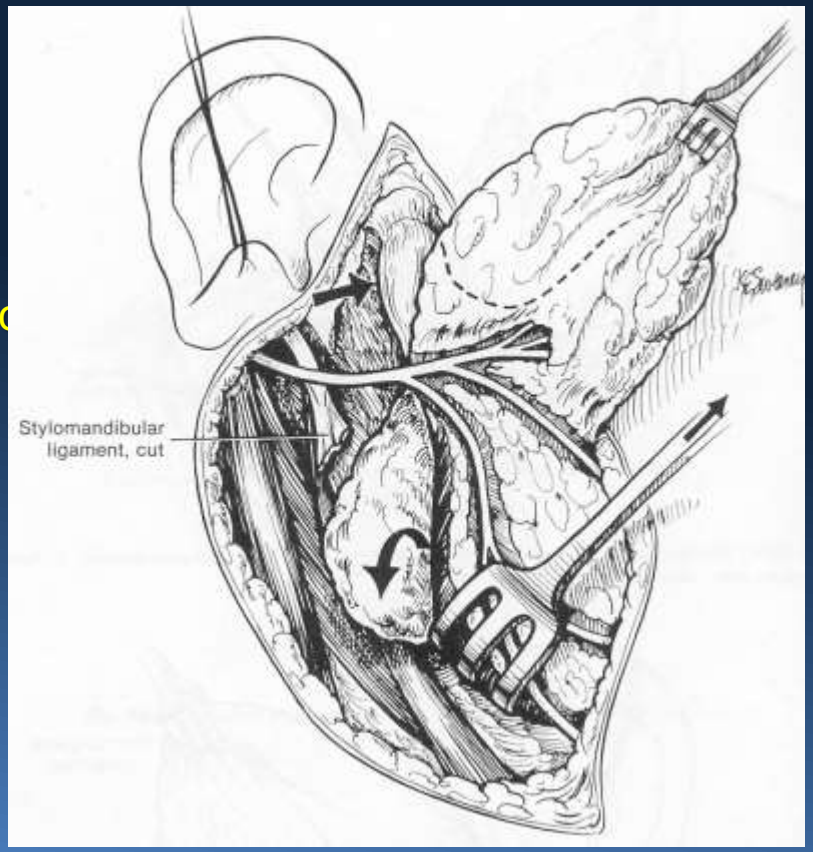
Parapharyngeal Miscellaneous Tumors

- Wide variety of tumors
- 20% of total PPS tumors
- Lymphoma, hemangioma, teratoma, lipoma, branchial cleft cyst, arteriovenous malformation, internal carotid artery aneurysm

Surgical Approaches to the Parapharyngeal Space

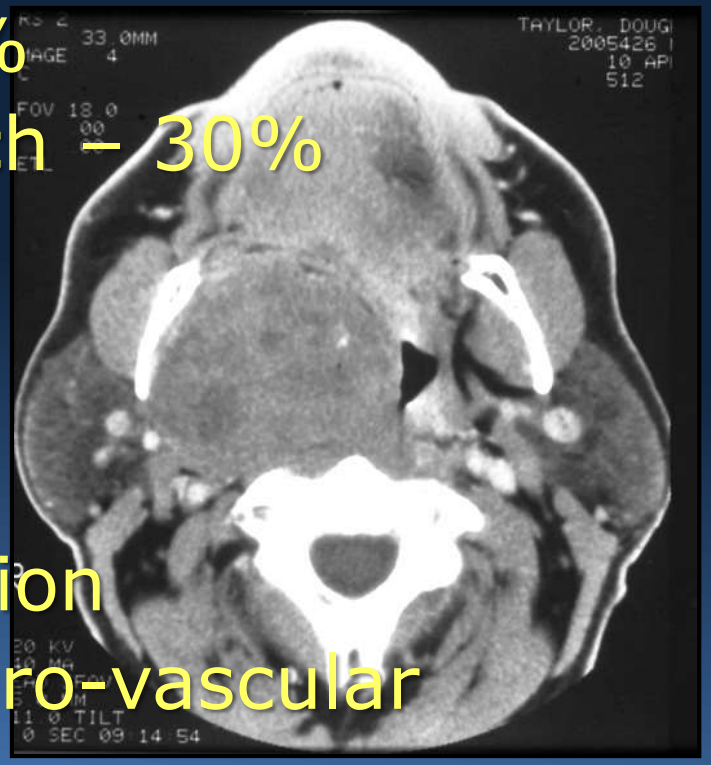
Surgical Approaches

- Lateral-Transcervical
  - Submandibular
  - Trans-Parotid
    - +/- Mandibular translocatio
    - +/-mandibular osteotomy
- Midline Mandibulotomy
- Lateral + Osteotomy
- Radical Resection
  - mandible
  - temporal bone
  - skull base



Surgical Approaches

- Transoral - never
- Cervical approach – 60%
- Cervical-Parotid approach – 30%
- Mandibulotomy – 10%



Goals

- Provide good exposure
- Complete tumour resection
- Preservation of vital neuro-vascular structures
- Minimize complications

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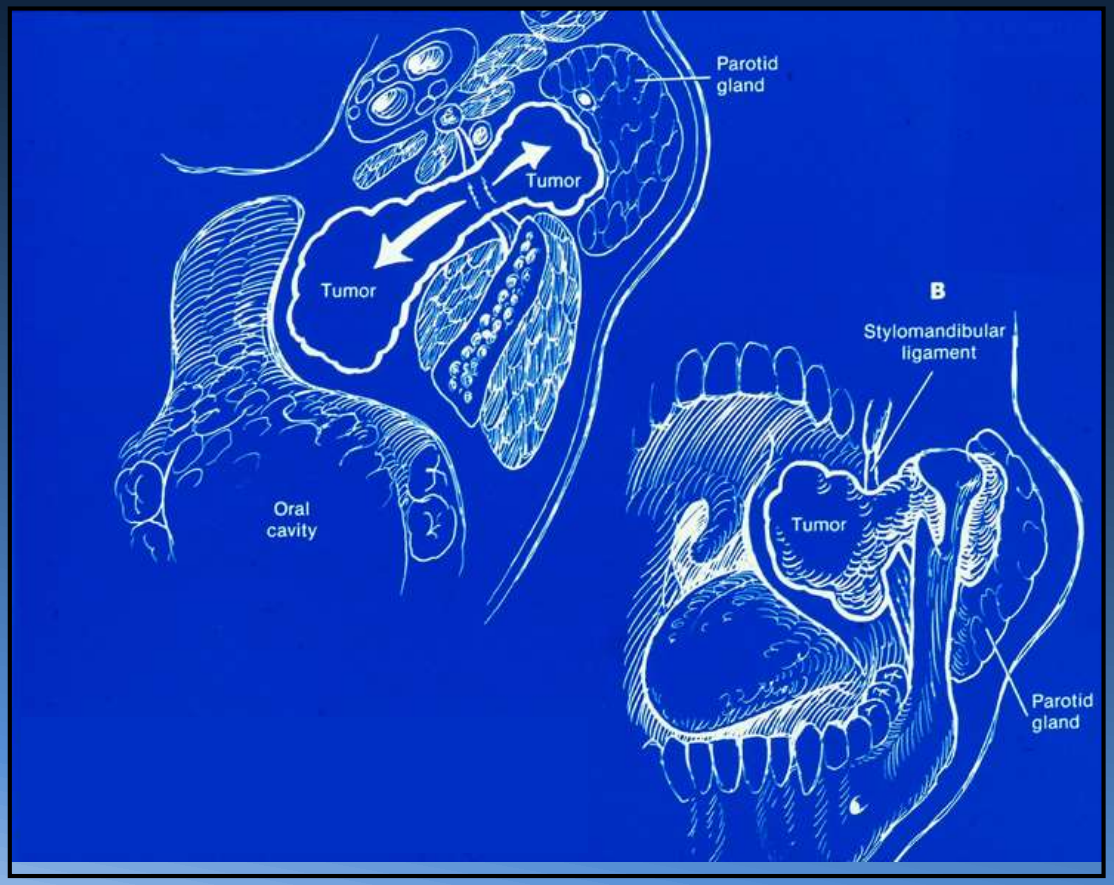
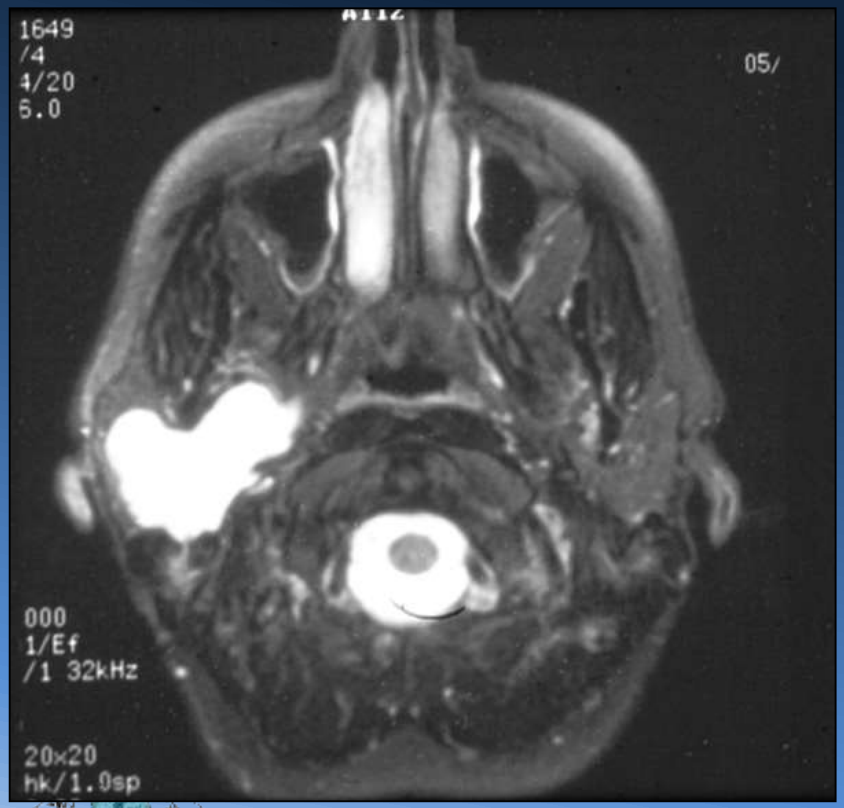
Surgical Approaches
Transoral

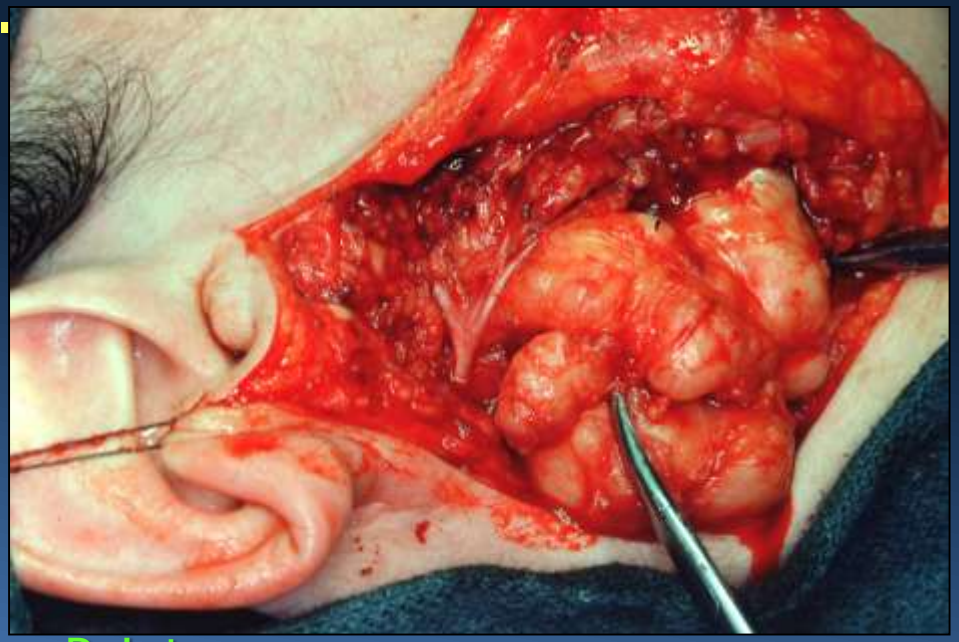
"Mentioned to be condemned!"



Surgical Approaches
Transparotid - Transcervical

- Deep lobe parotid gland tumours involving the parapharyngeal space.

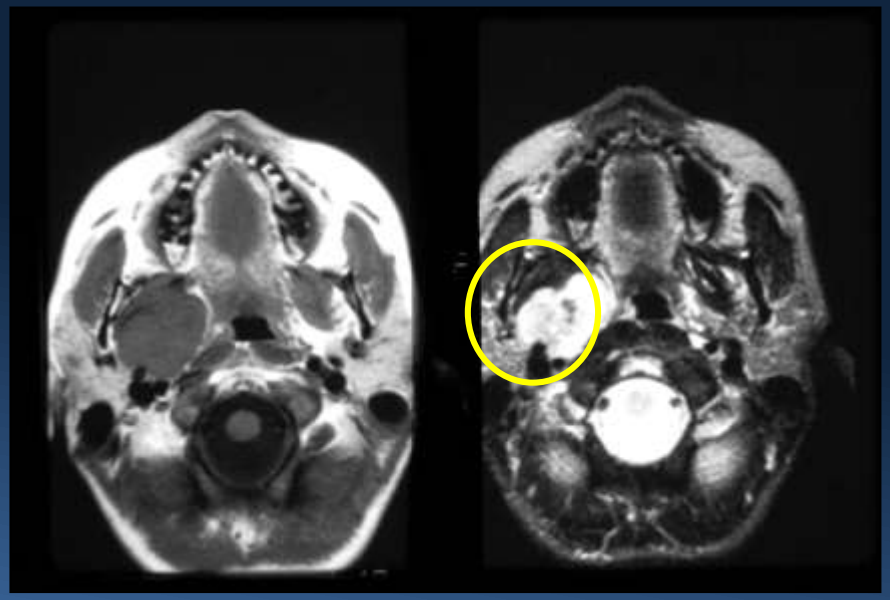


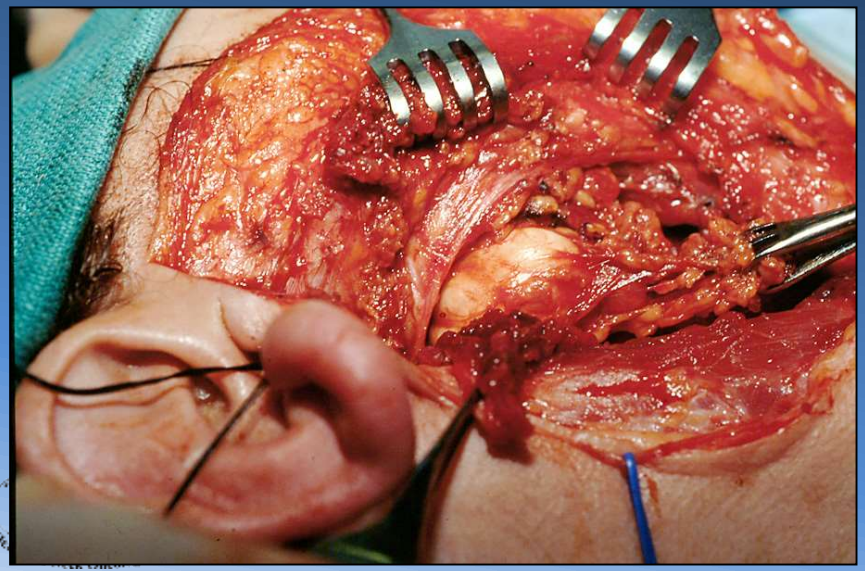


Key Points:

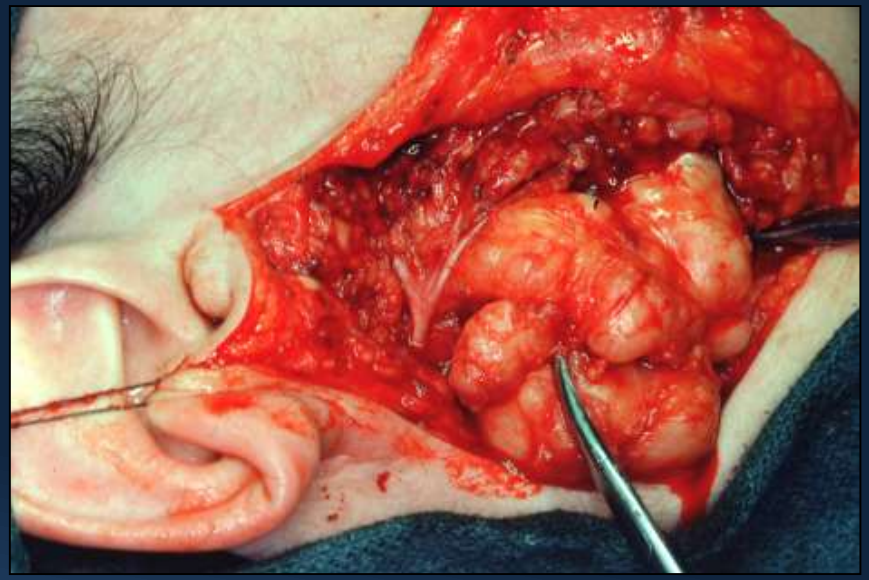
- Identify the facial nerve in all cases.
- Not always necessary to perform a superficial parotidectomy.
- Not necessary to remove the submandibular gland.

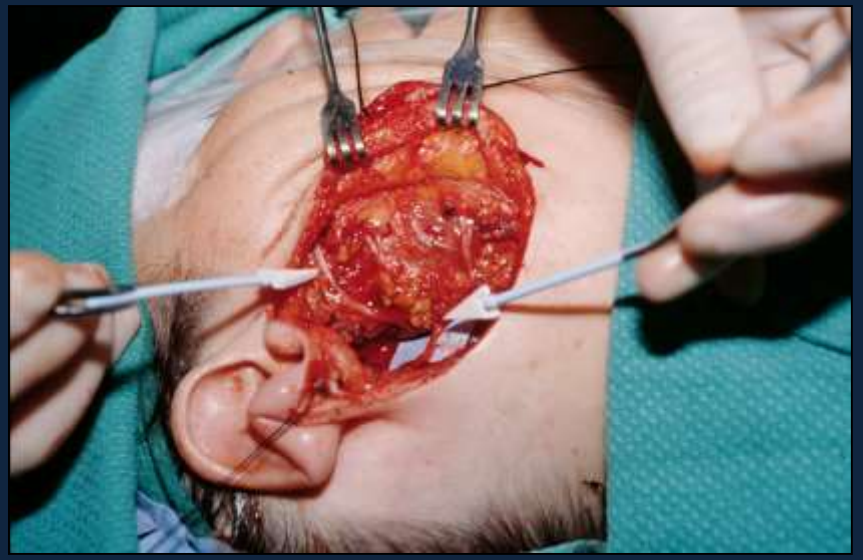
Surgical Approaches
Transparotid - Transcervical





Due to proximity of the tumour to the facial nerve its identification and superficial parotid gland mobilization is vital.





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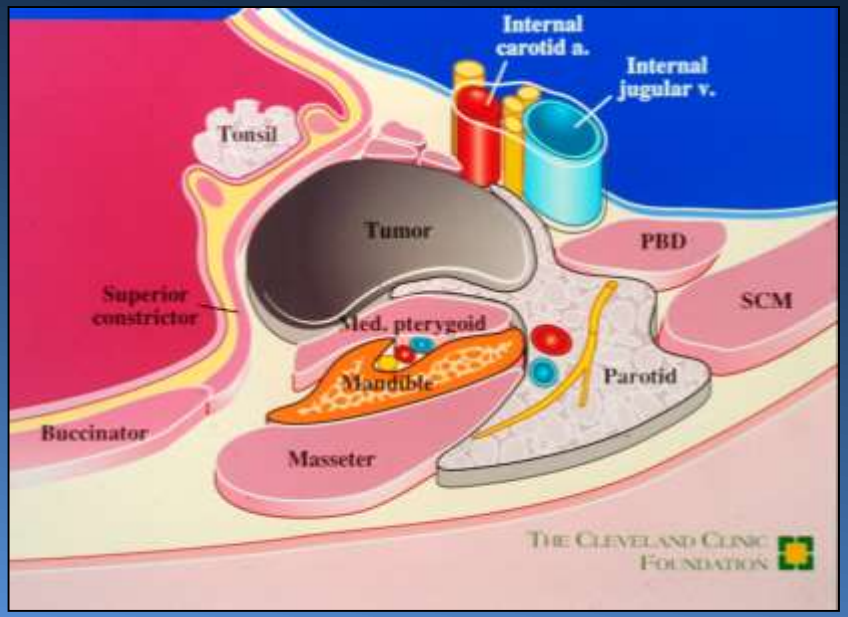
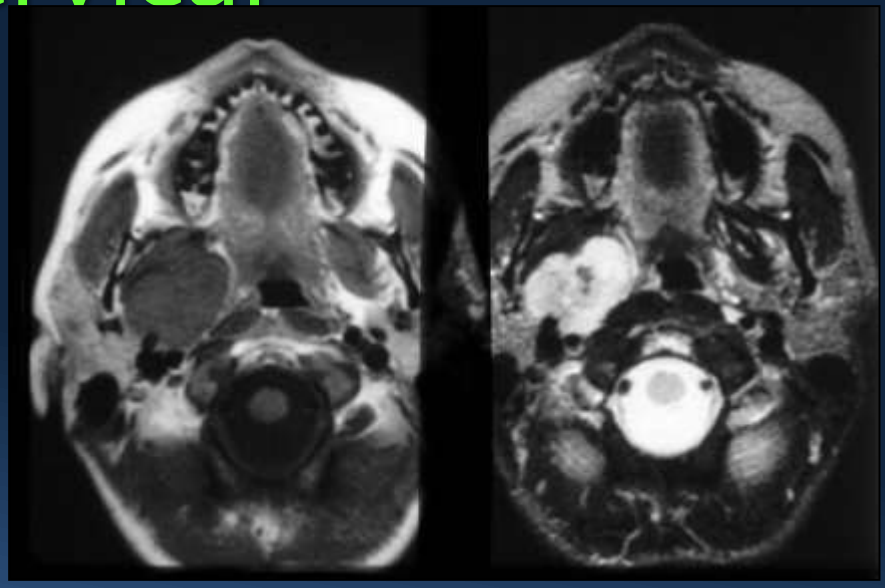
Surgical Approaches to Parapharyngeal Sp.

Transcervical

Indications

- Extraparotid salivary gland tumours within parapharyngeal space <10cm
- Neurogenic tumours
- Select vascular lesions





- Counsel patient and family

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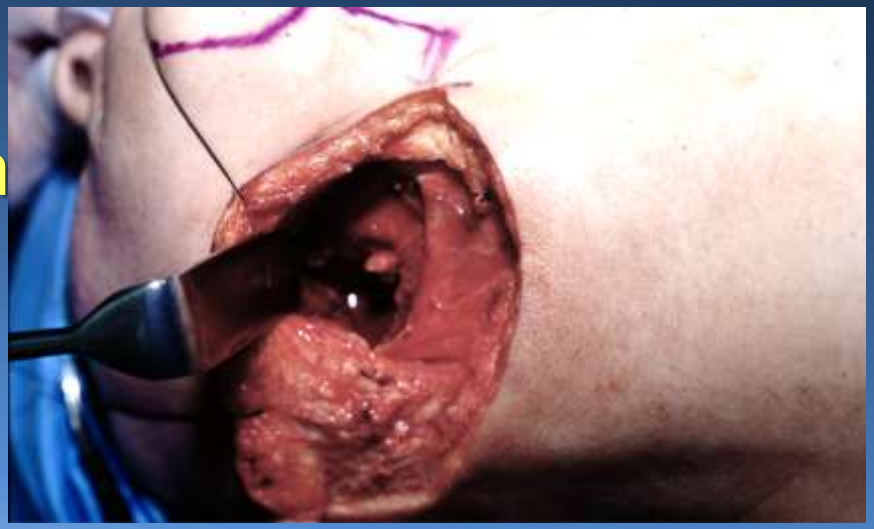
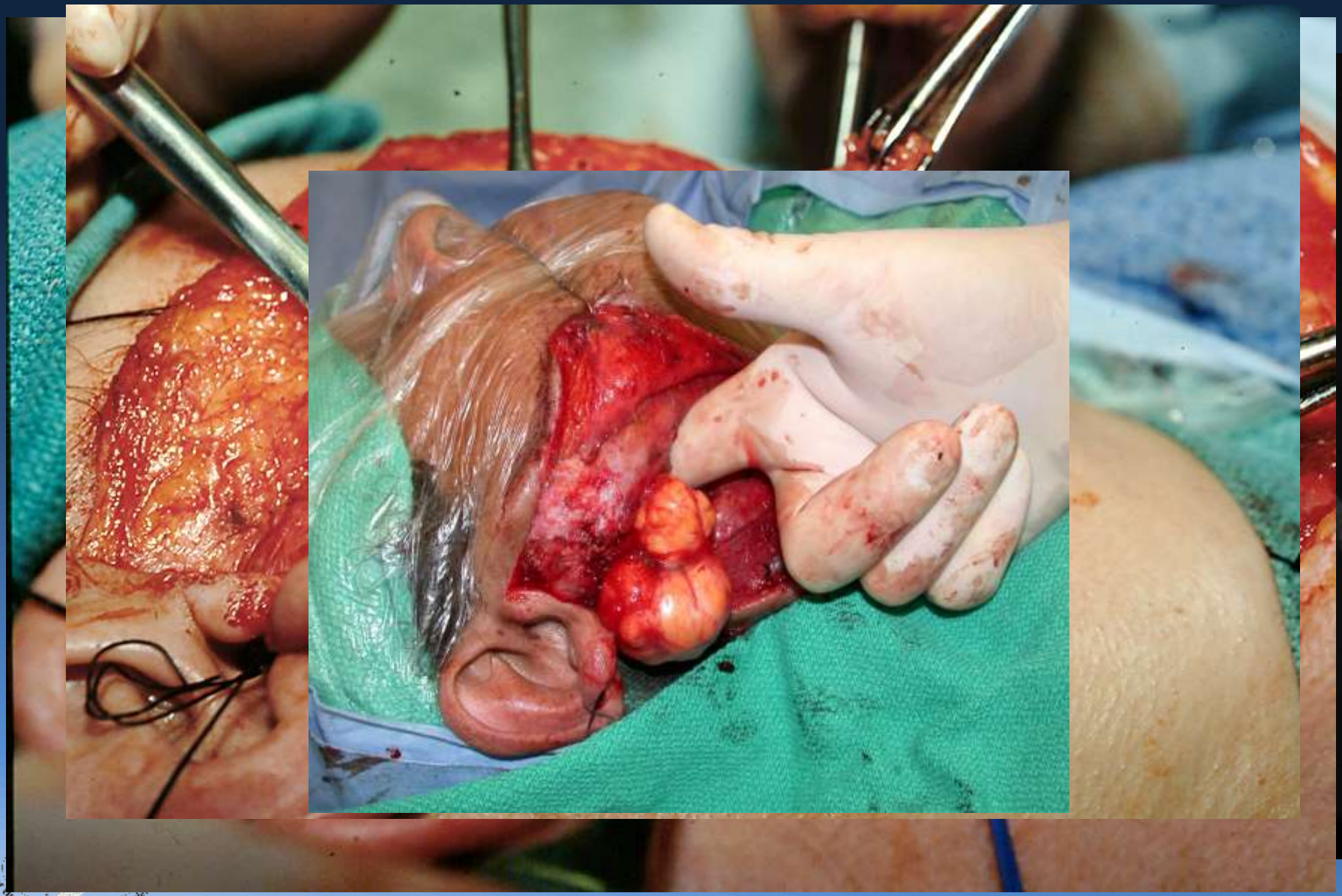
Procedure

- Subplatysmal flap
- Identify carotid and J.V.
- Divide facial artery
- Divide styloid process
- Divide posterior belly of digastric muscle
- Mobilize submandibula gland
- Finger palpation



6 months post-op

Cervical approach

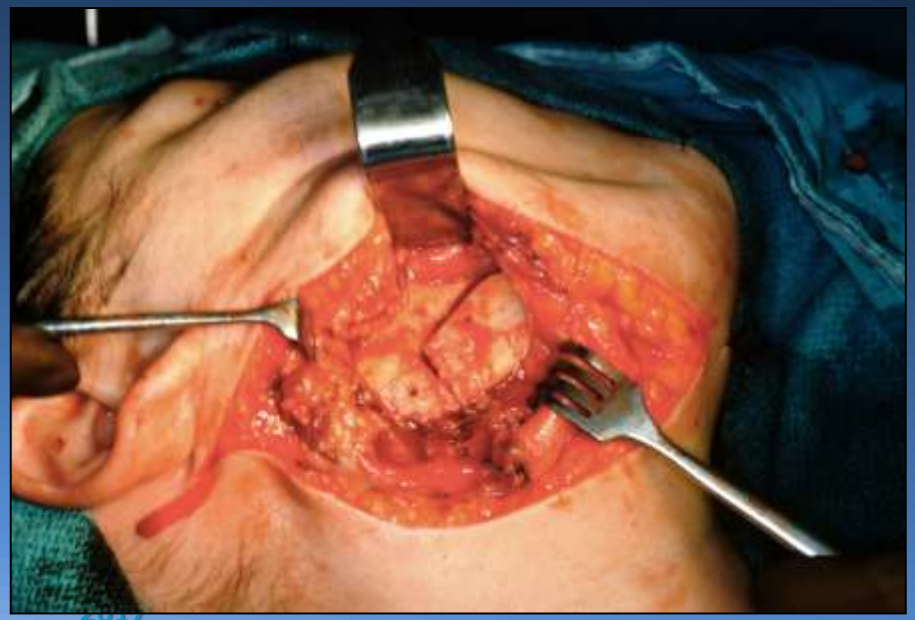


Cervical approach

Surgical Approaches
Mandibulotomy

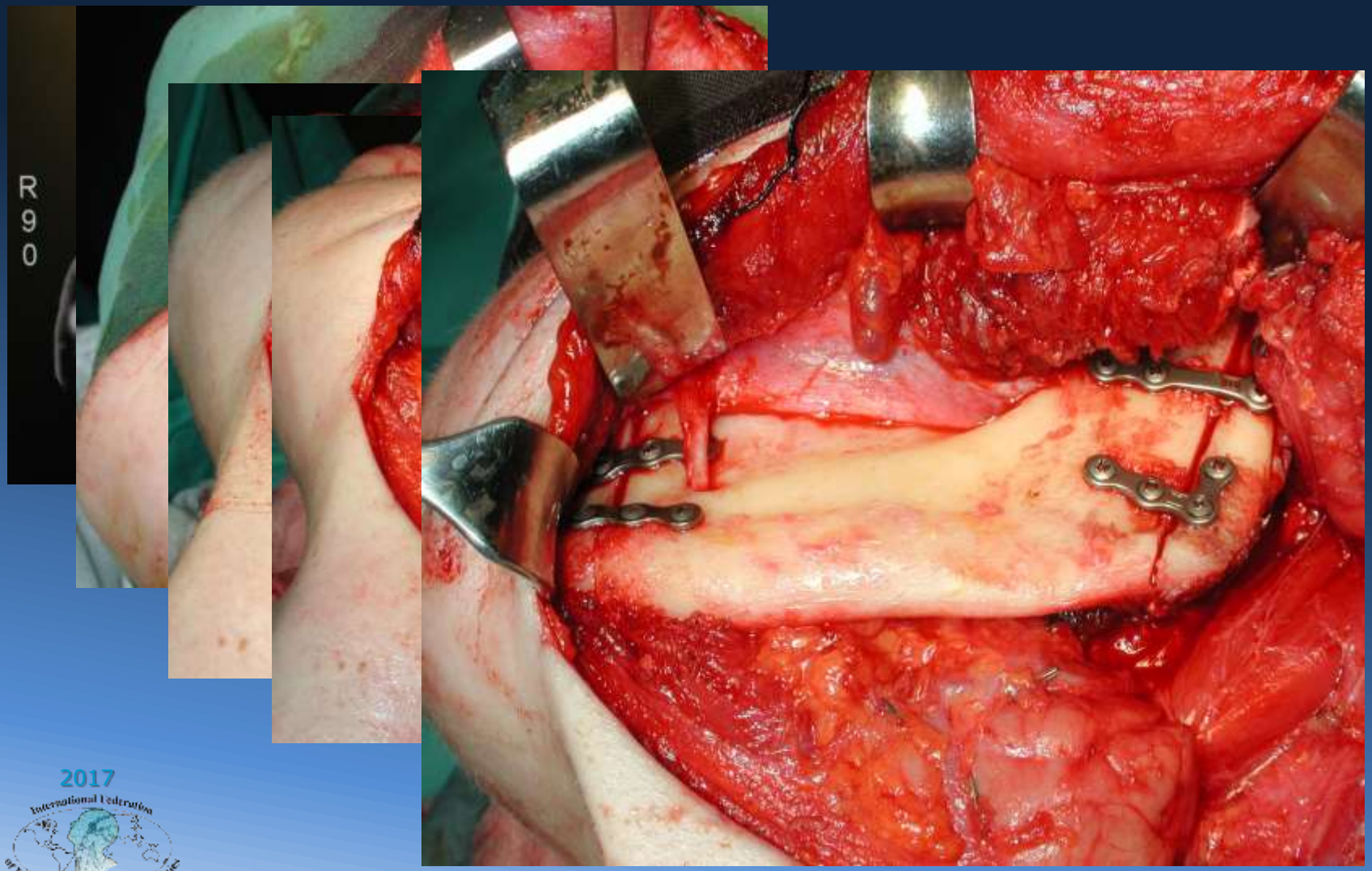
Types of Mandibulotomy:

- Lateral – rarely indicated
- Midline – most common



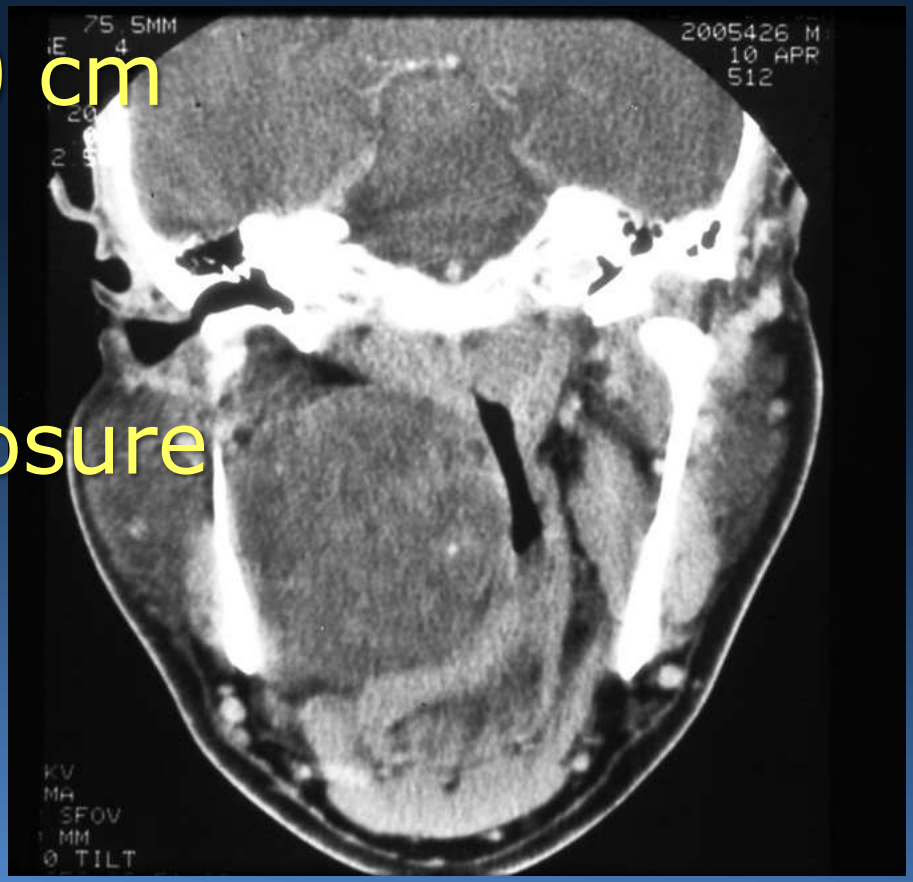
Avoid this approach as it has all the disadvantages and few advantages!

Cervical approach with lateral osteotomy



Mid –Line Mandibulotomy

- Large tumour > 10 cm
- Vascular tumour
- Malignant tumour
- Carotid artery exposure

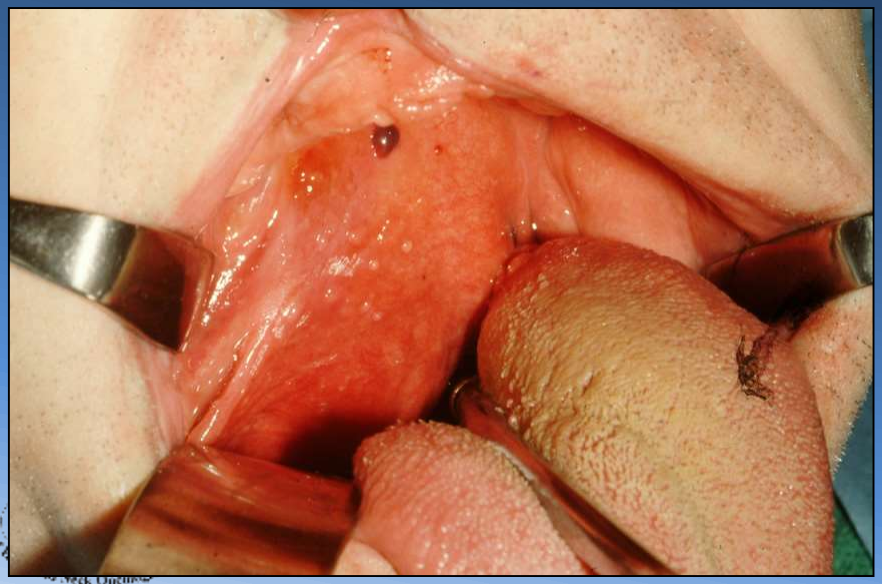


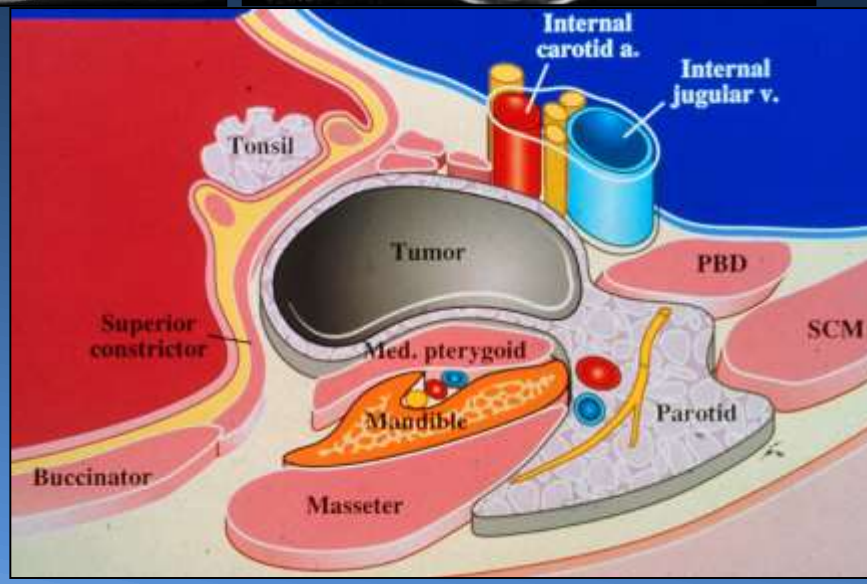
Mid-Line Mandibulotomy Technique

- 54 yr old male
- 3 year history of snoring
- 1 year history of increasing dysphagia
- Examination – firm mass right oropharynx with partial airway obstruction
- Transoral FNA – Pleomorphic adenoma

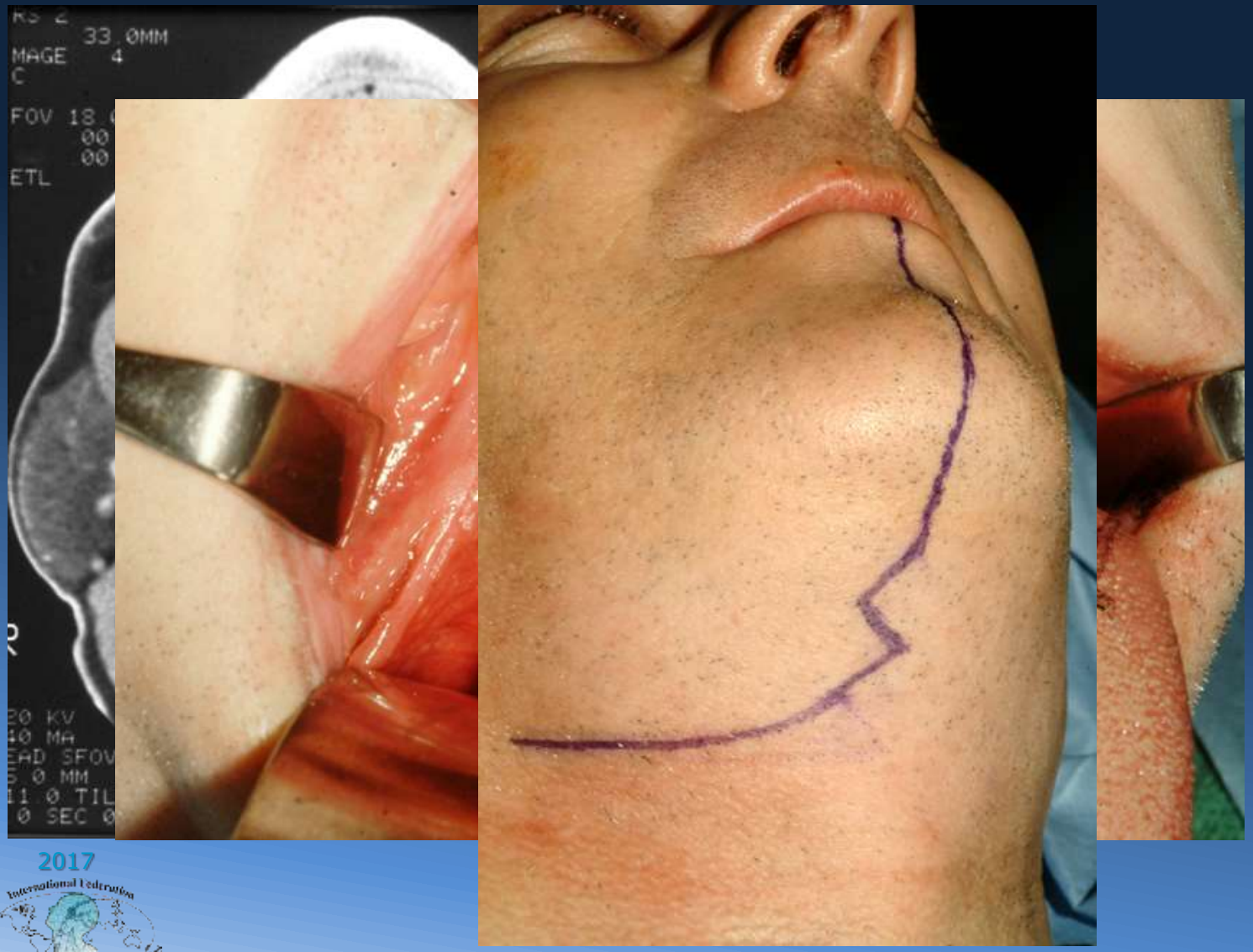
Mid-Line Mandibulotomy Technique

Tumour size
10 x 13cm

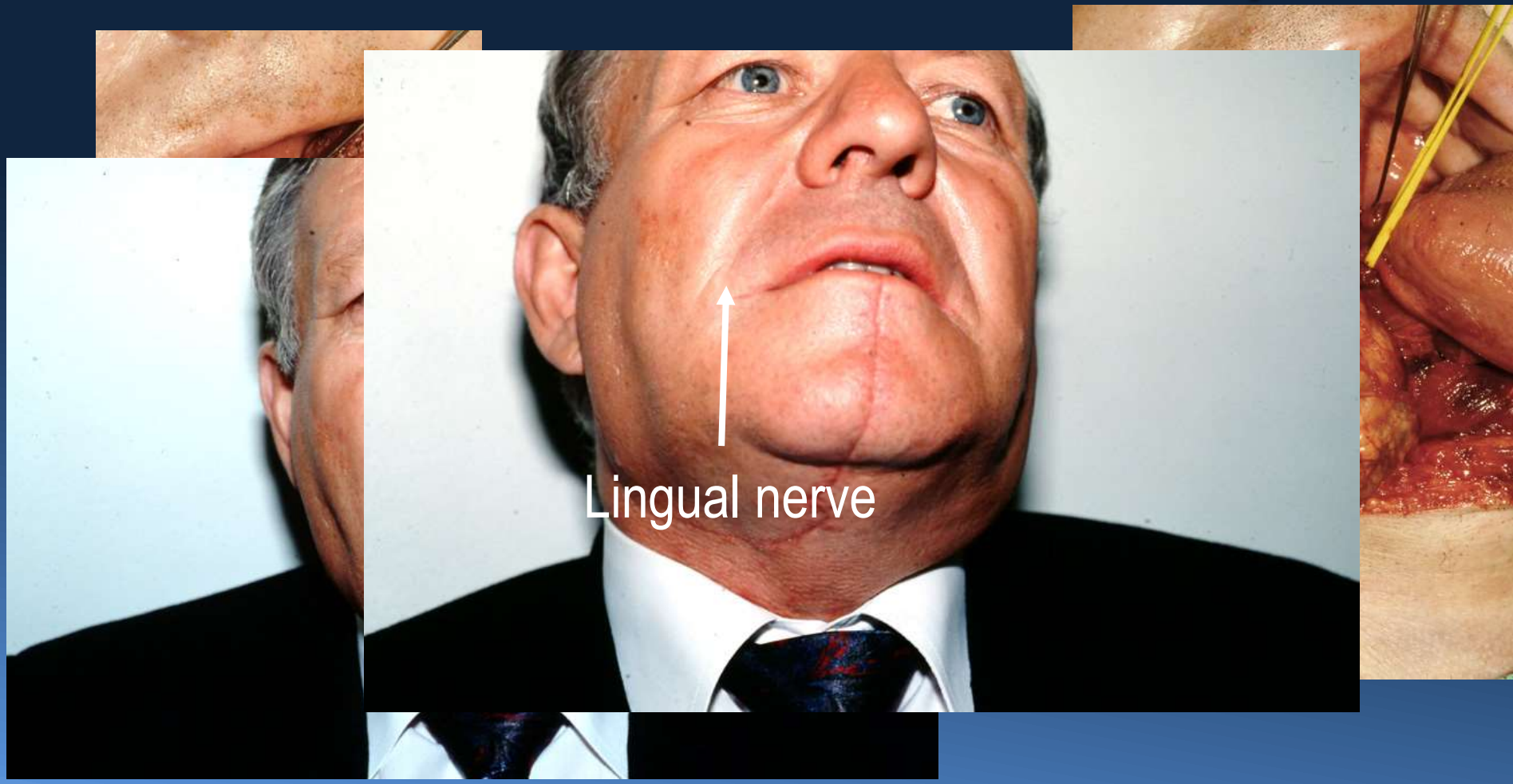




Midline Mandibulotomy



Midline Mandibulotomy

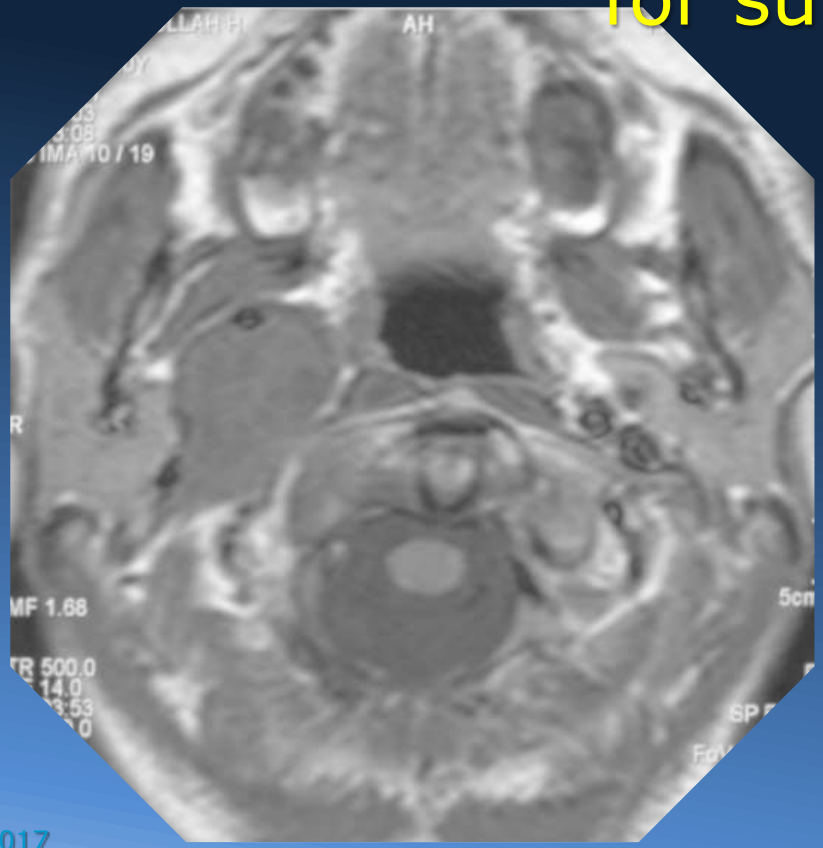


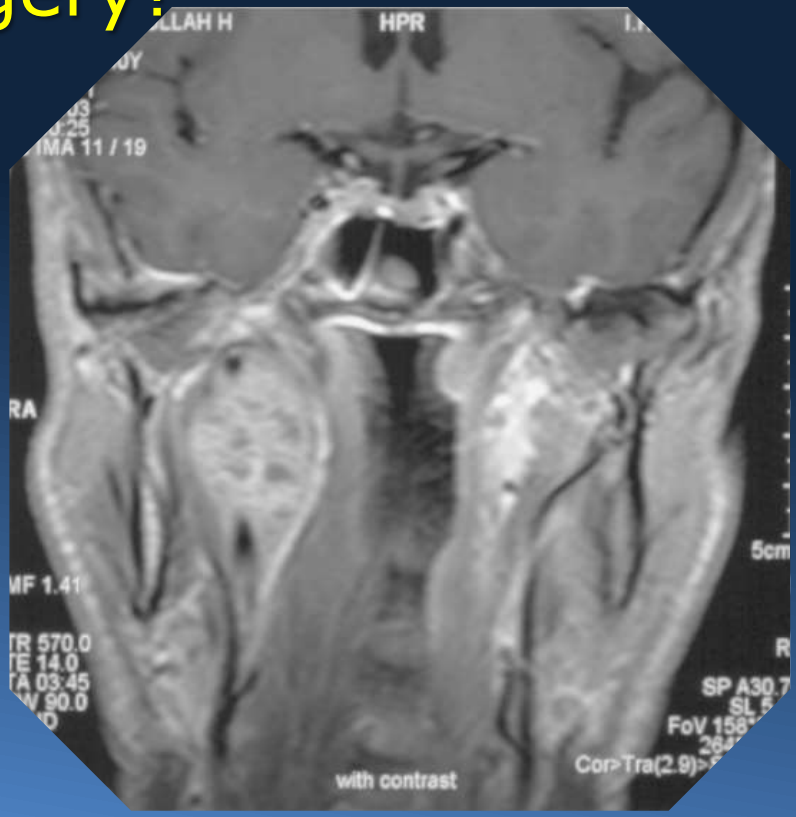
Mid-Line Mandibulotomy Technique

- 34 yr old male
- 2 year history of increasing dysphagia with hoarseness.
- Examination – mass right oropharynx and right upper neck.
- Direct laryngoscopy – paralysis right vocal cord.

Parapharyngeal Tumors

Schwannoma-What are the indications for surgery?





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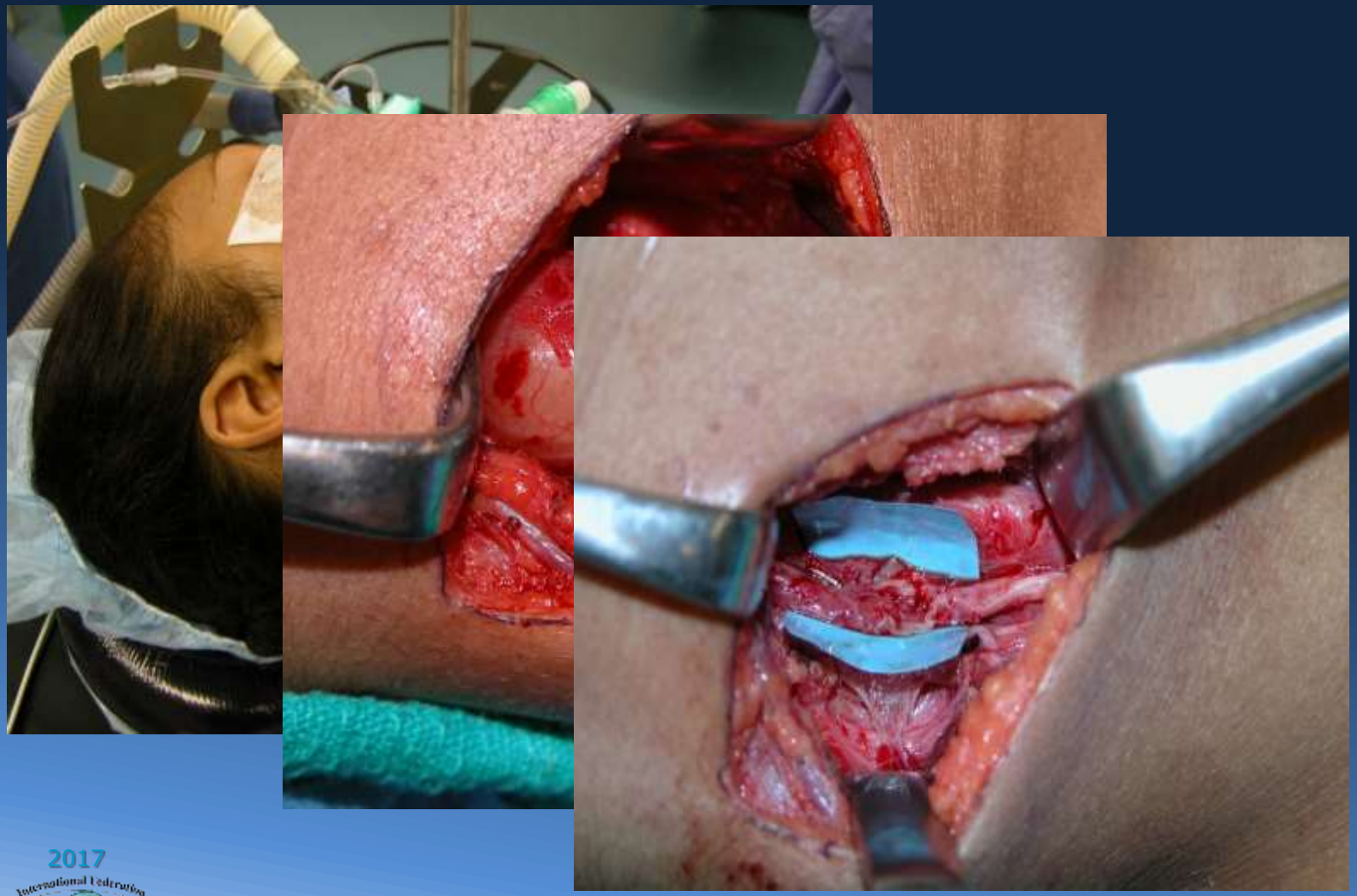
Vagal Schwannoma



Investigations:

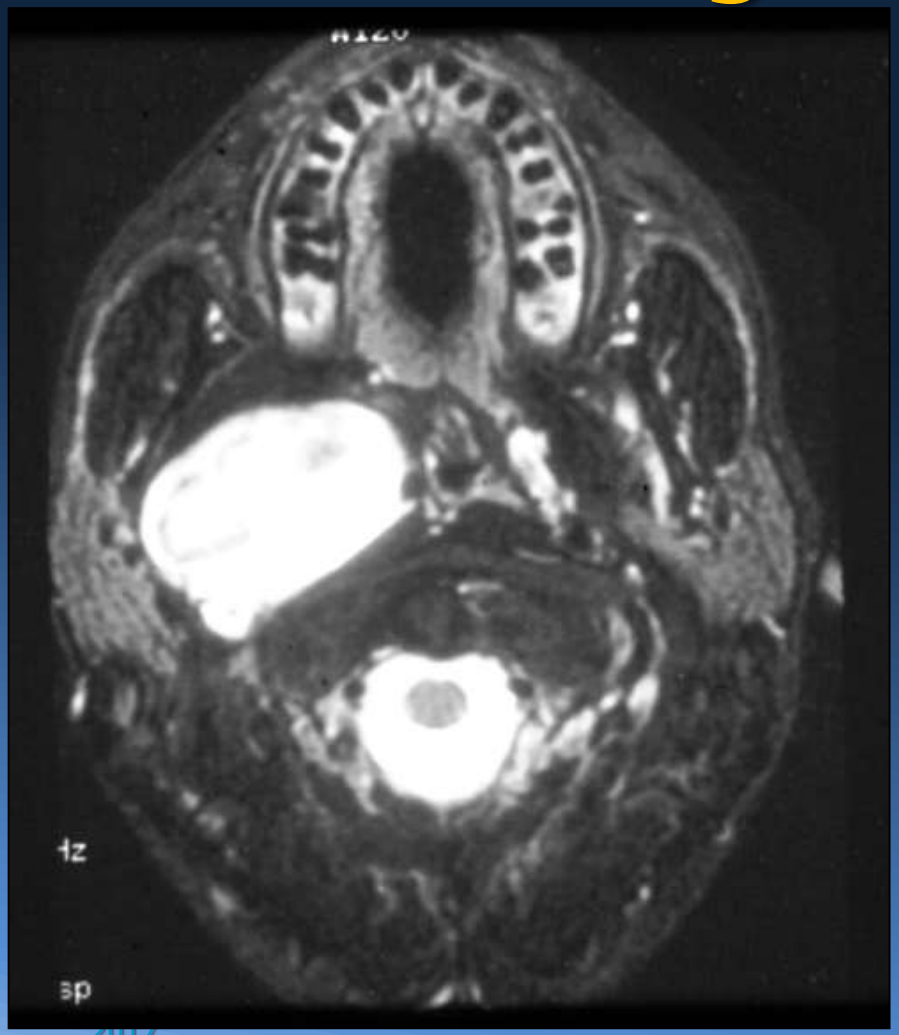
- CT scan
- MRI scan
- FNA Biopsy
  ?Schwannoma

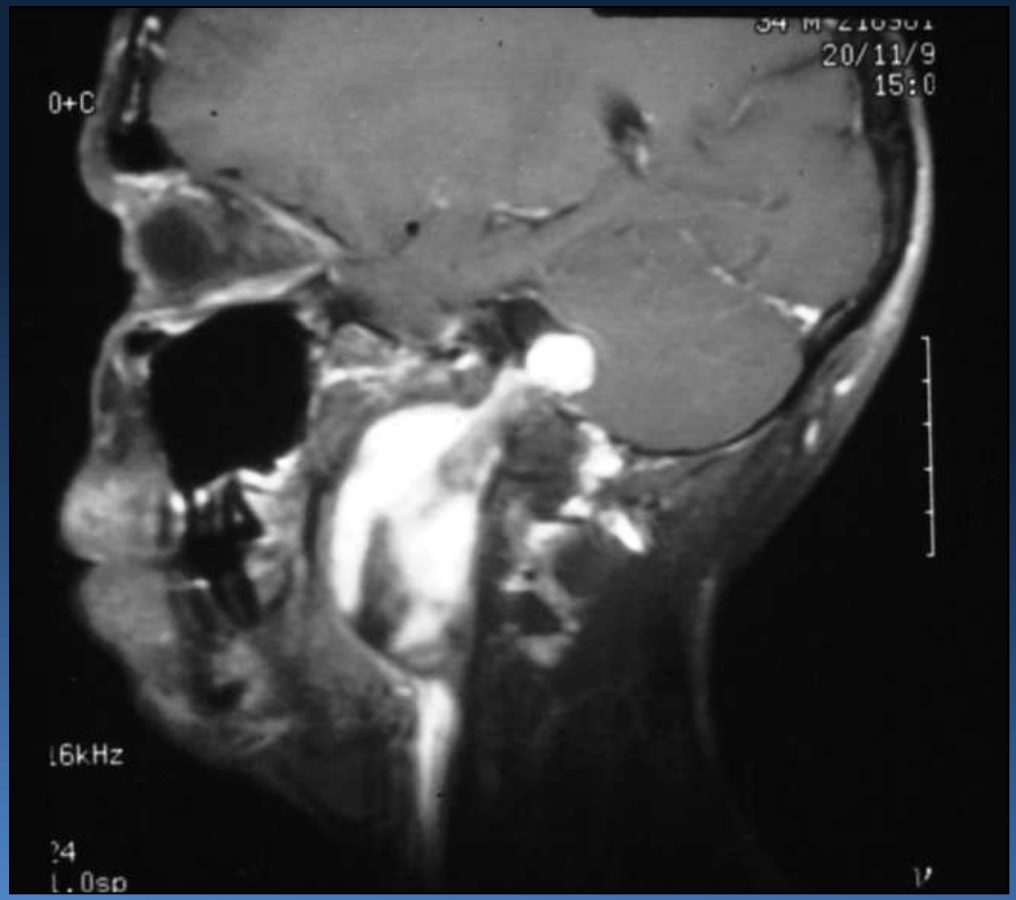
What approach is best used?

Is a two stage procedure necessary?

Craniotomy initially?

Neurogenic Tumours

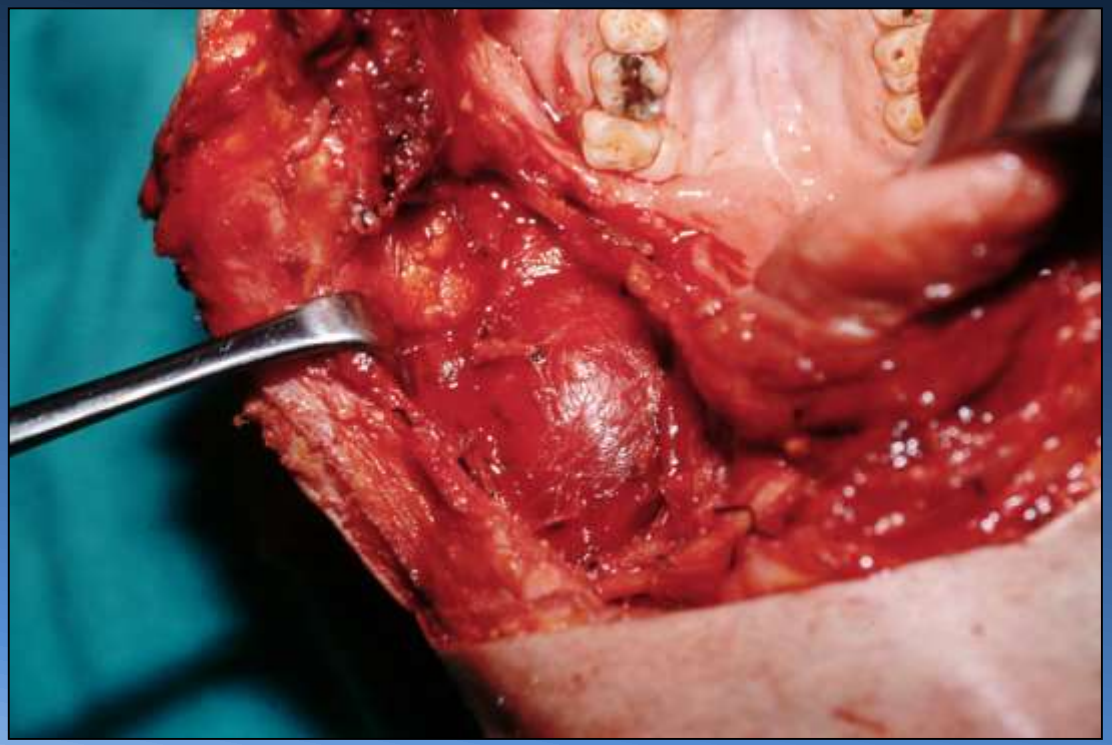




Schwannoma invading the skull base

Management

- Midline Mandibulotomy
- Resection Vagal Schwannoma including intracranial extension from below
- Right vocal cord augmentation at 6 weeks



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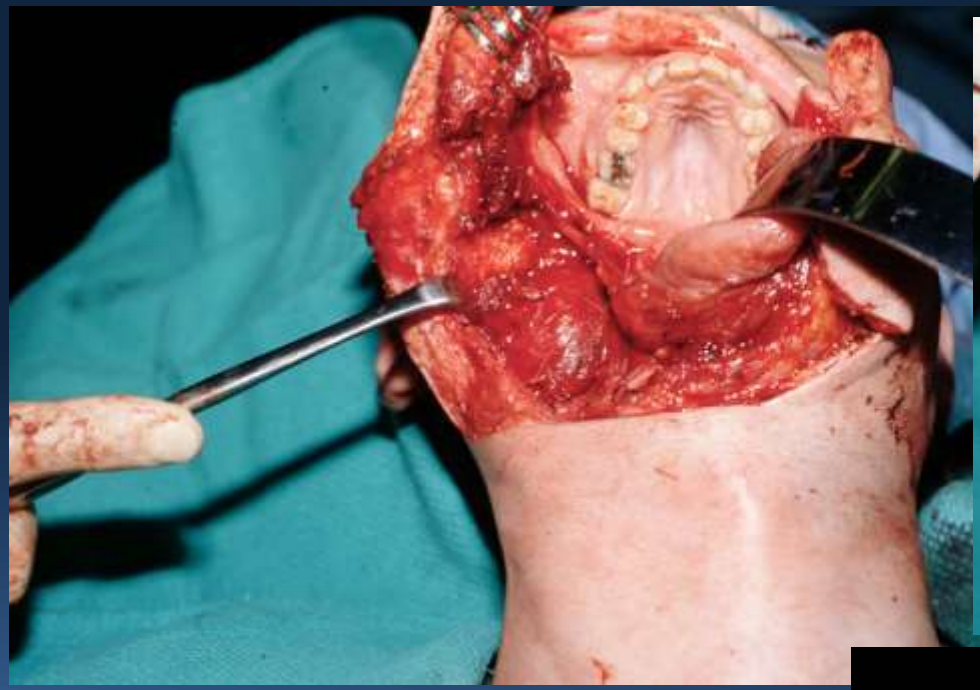
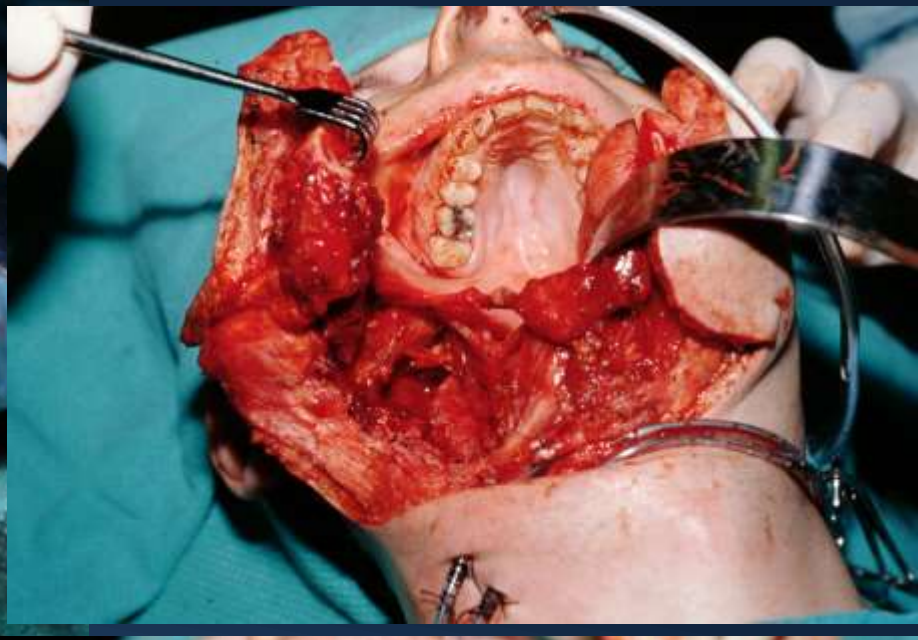
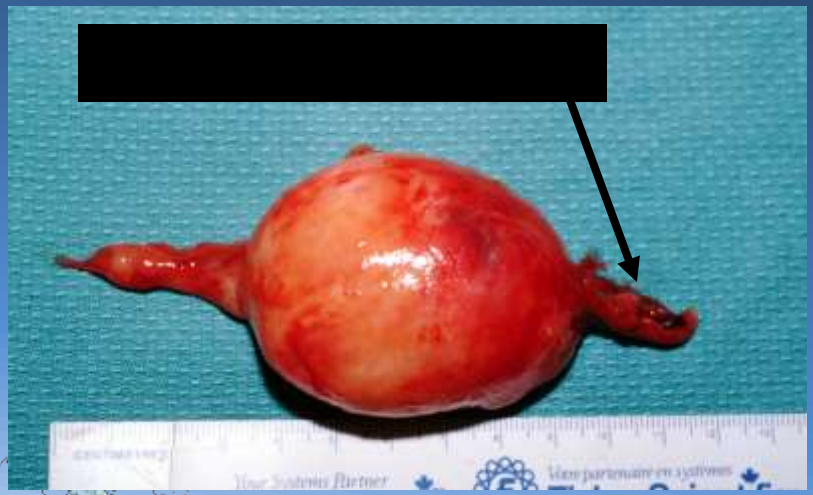
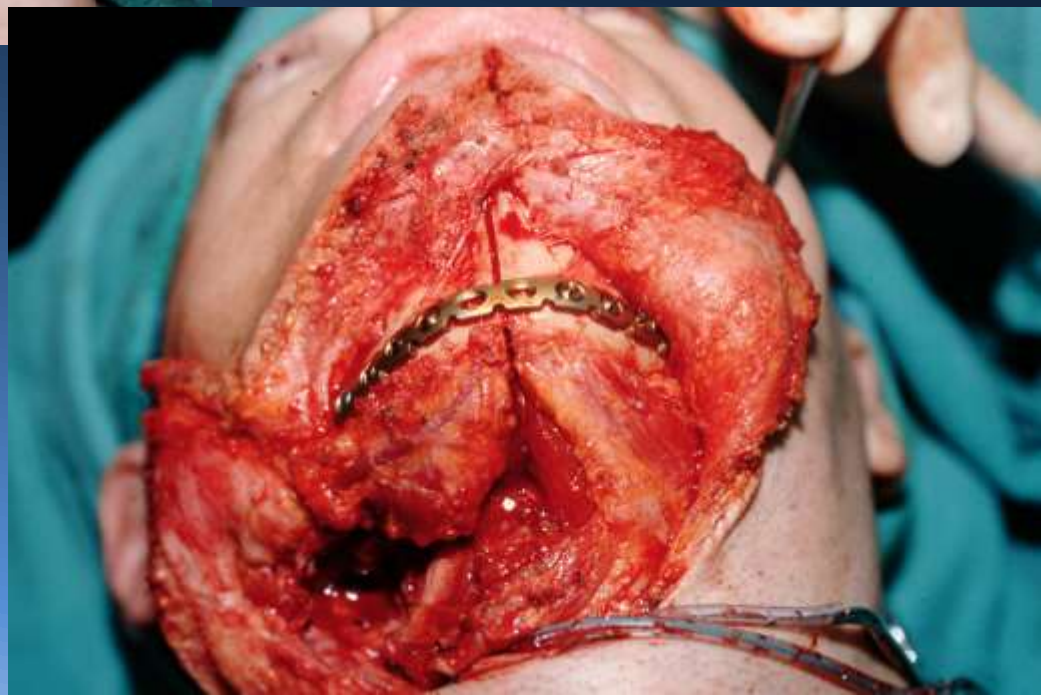
Mandibulotomy Approach









1 year post op

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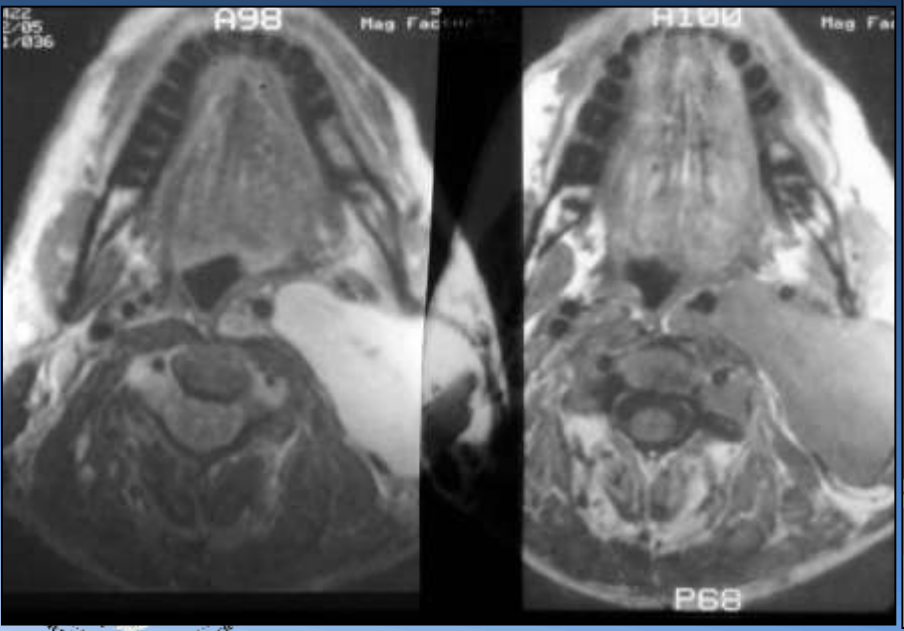
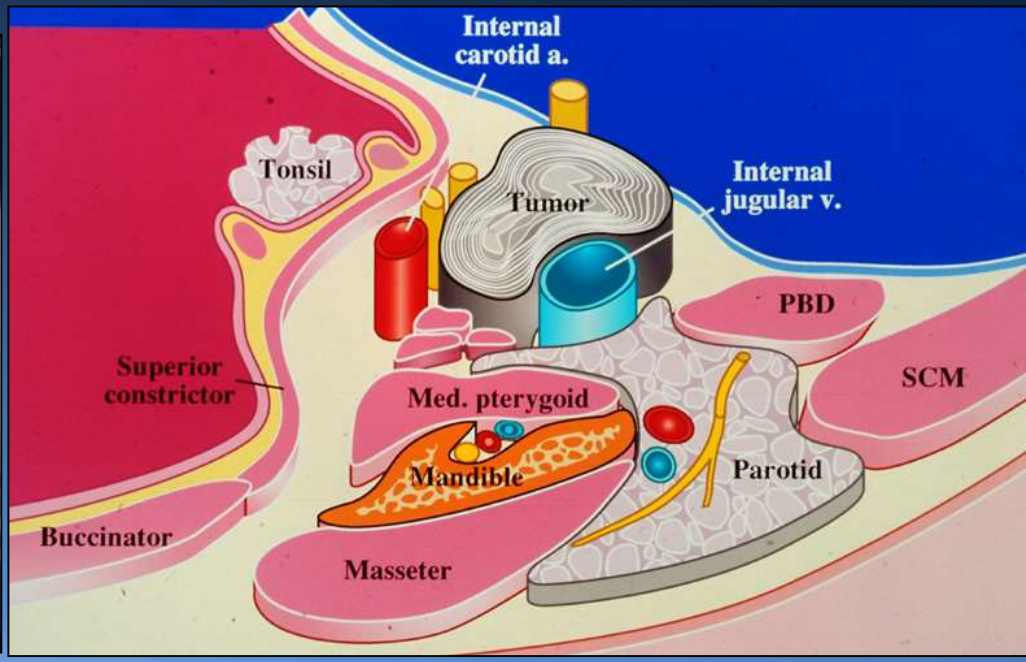
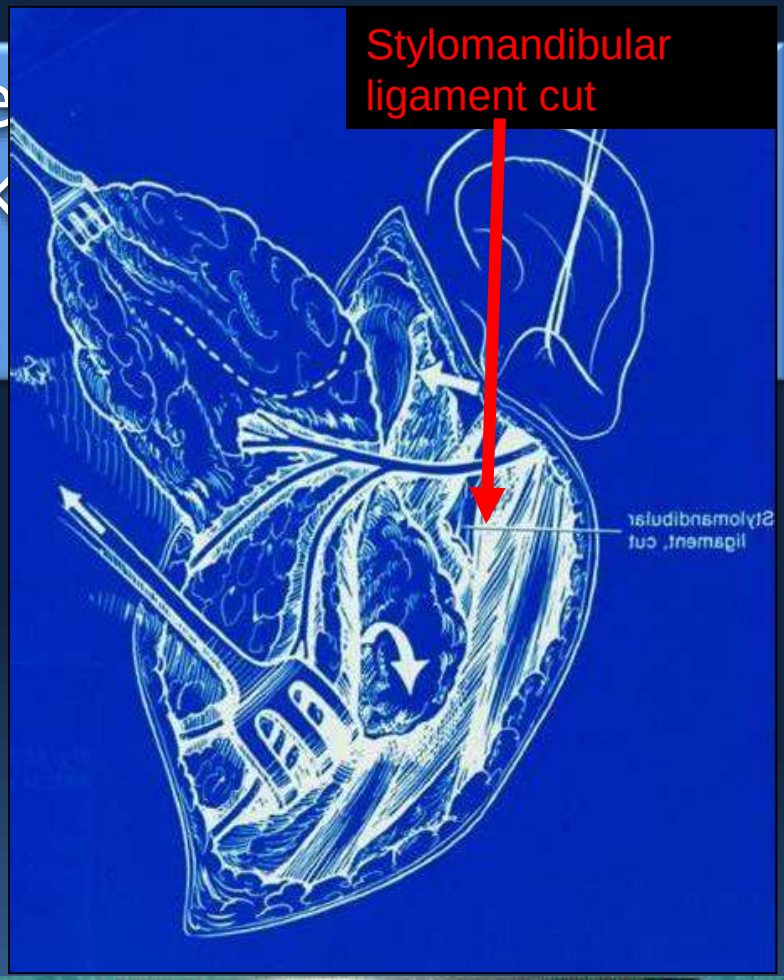
- 29 yr old – mass left neck and parapharyngeal space to skull base
- Von Recklinghausens disease
- MRI scan showed no intracranial extension
- FNA aspirate suspicious for neurogenic tumour

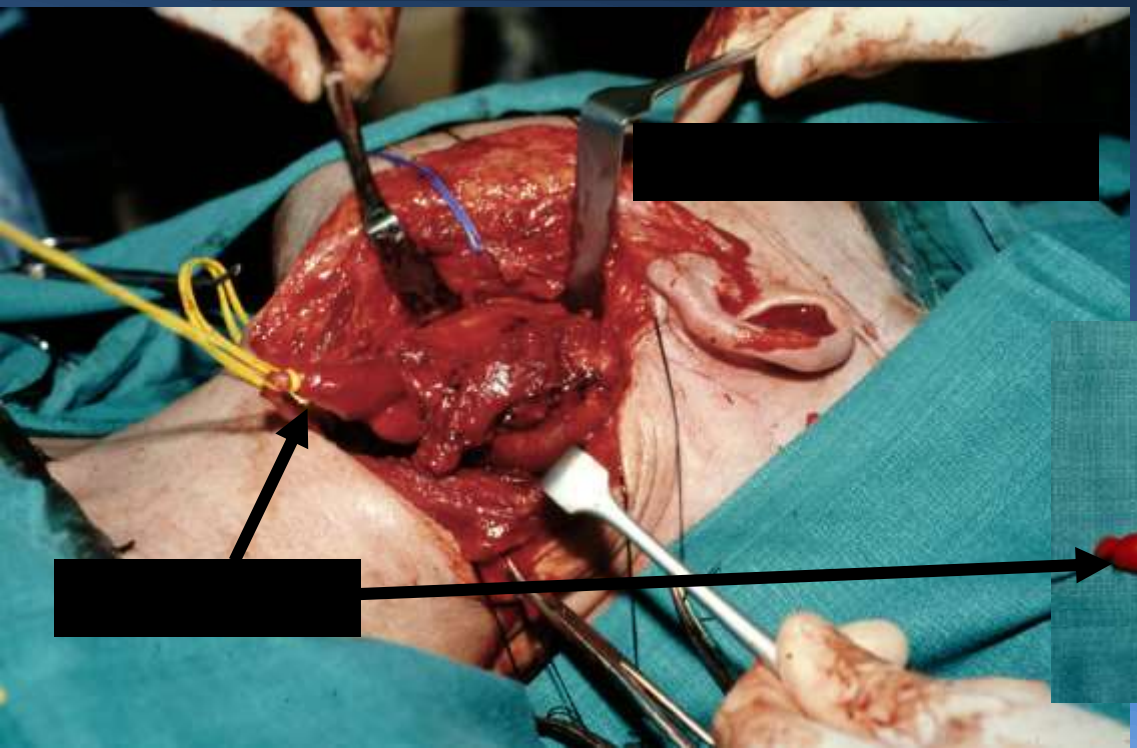
Surgical approach?



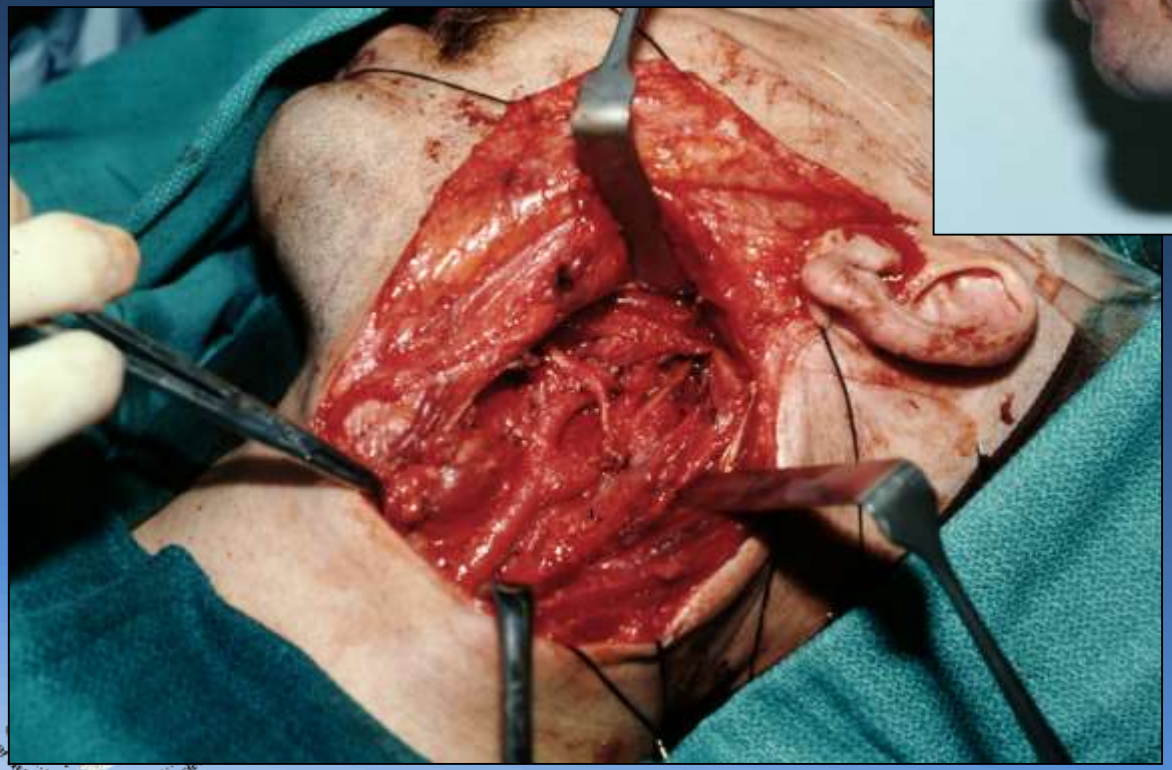


Lateral Cervical Approach



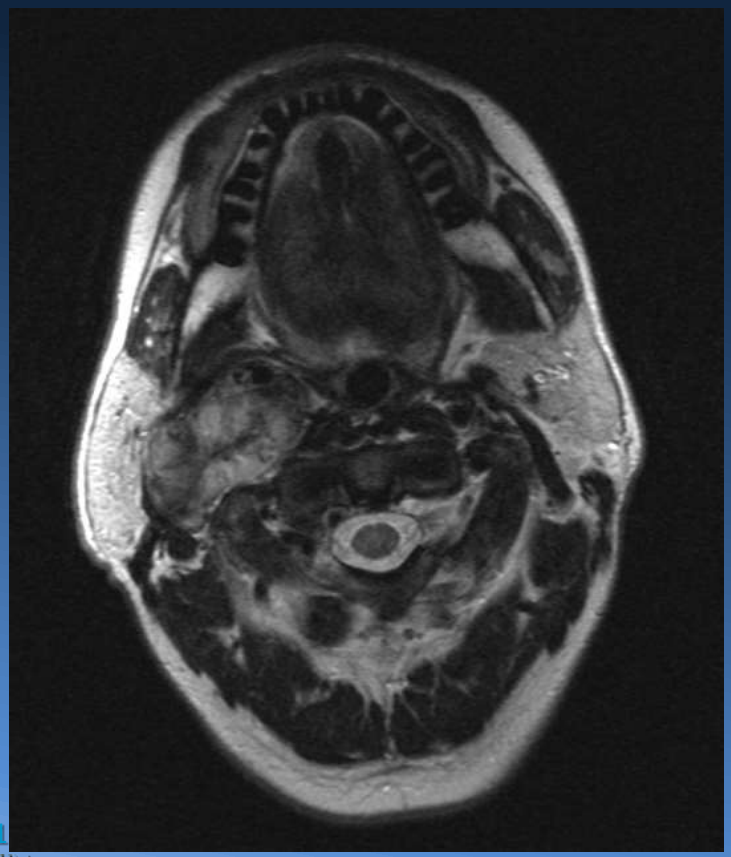


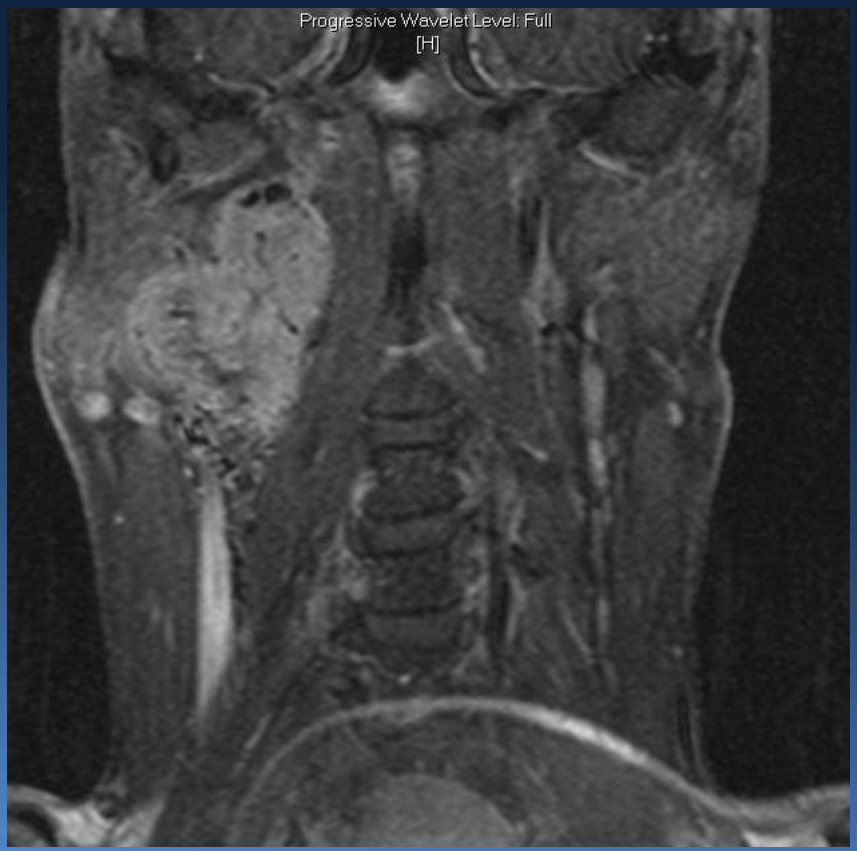
2 years post op



Parapharyngeal Tumors

Vagal Paraganglioma



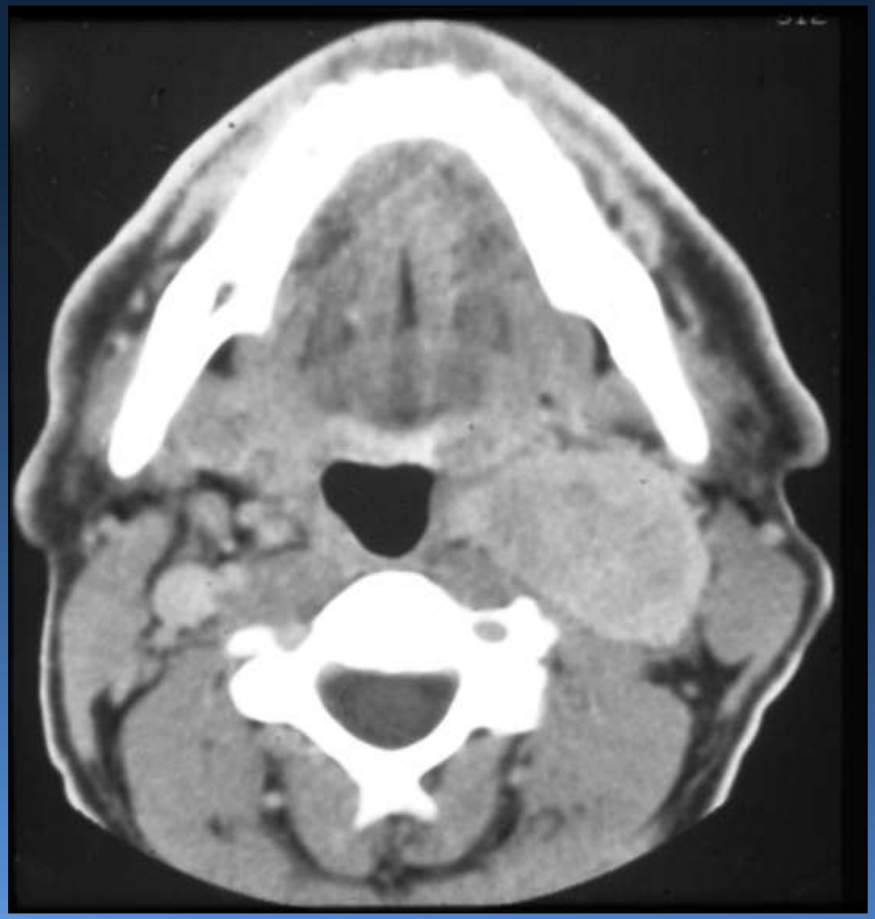


Neurogenic/Vascular Tumours: 20-25%

- Neurilemoma
- Neurofibroma
- Glomus vagale
  - 10% multifocal
- Carotid body tumour

bi-lateral glomus vagale tumours

Vascular Tumours

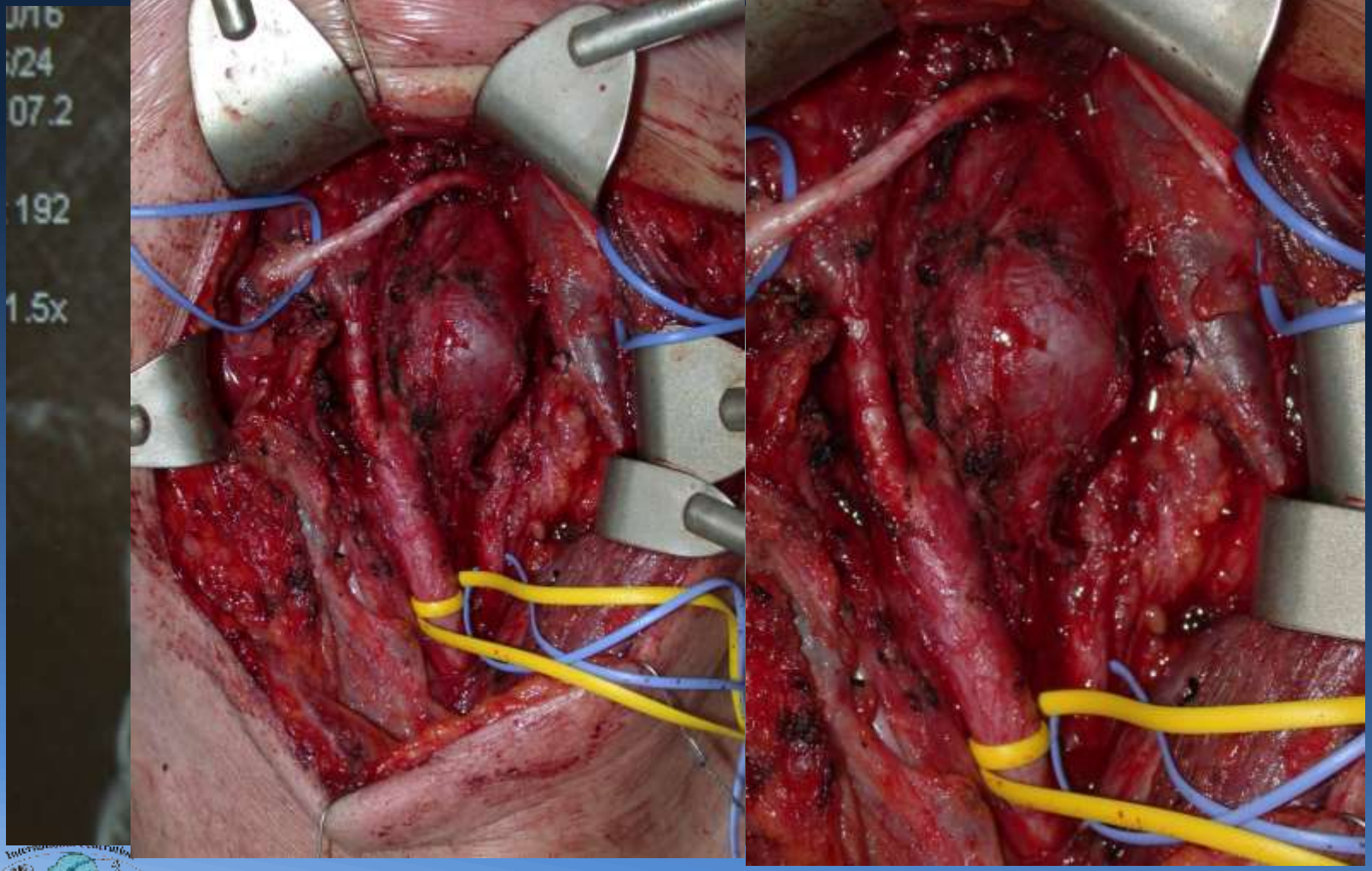


Carotid body invading the parapharyngeal space

Parapharyngeal Tumors Management of Vagal Paraganglioma

- Size of tumor (< or > 4 cm)
- Young vs. old patients
- Single vs. multiple nerve sacrifice
- Growth vs stable disease
- Surgery, radiotherapy or observation
- Radiotherapy stops/slows growth

Surgical Management of G Vagale



Parapharyngeal Tumors

Arguments for Observation

- Paragangliomas grow 1.0-1.5 mm per year
- Benign
- Added morbidity and mortality low if untreated

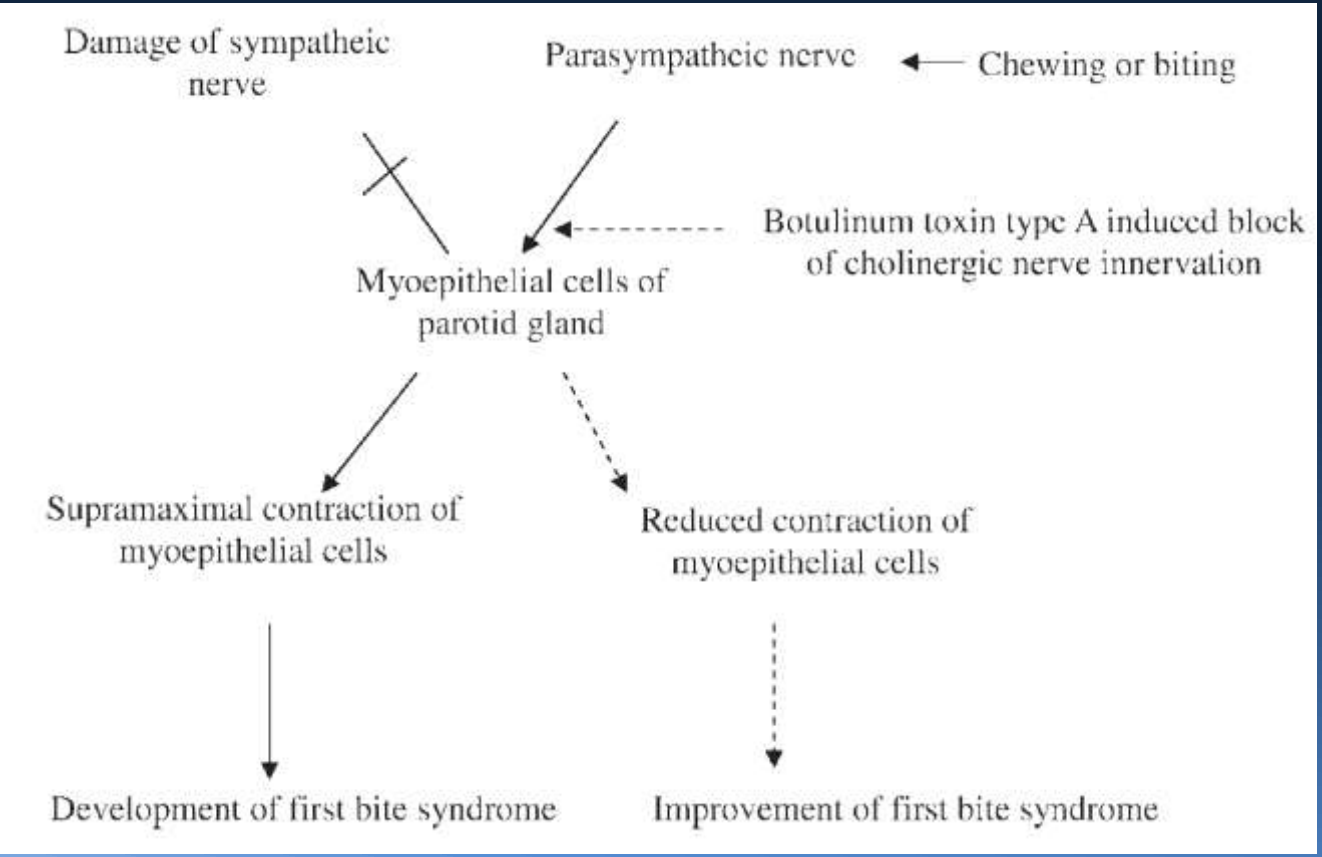
Parapharyngeal Tumors Complications

Complication	No. patients (%)*
First bite syndrome†	18 (12.2)
Facial nerve weakness	6 (4.1)
Trismus/temporomandibular joint pain	6 (4.1)
Palatal weakness	4 (2.7)
Cerebrospinal fluid lead	3 (2.0)
Pneumonia	2 (1.2)
Vocal cord paralysis	2 (1.2)
Seroma/hematoma	2 (1.2)
Orocutaneous fistula	1 (0.7)
Endocarditis	1 (0.7)

Cohen SM *et al*. Head Neck 2005;27:669-75

Parapharyngeal Tumors

First Bite Syndrome



Caveats

- Cervical approach tumor spill
  - What do you do?
    - Irrigation
    - Post-op Radiotherapy
- Carotid Artery Injury
  - Test Occlusions?
    - Xenon Washout Technique
    - Vascular reconstructive surgery
- Recurrent disease?

Summary Parapharyngeal Space

- Understand the anatomy
- Visualize the facial nerve if at risk
- Majority of patients managed by cervical approach

Parapharyngeal Tumors

- Challenging lesions
- Rare
- Complex anatomy
- Variety of pathologic entities
- Clear understanding of management strategies

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COURAGE LIVES HERE

International Federation of Head and Neck Oncologic Societies
Founded 1987