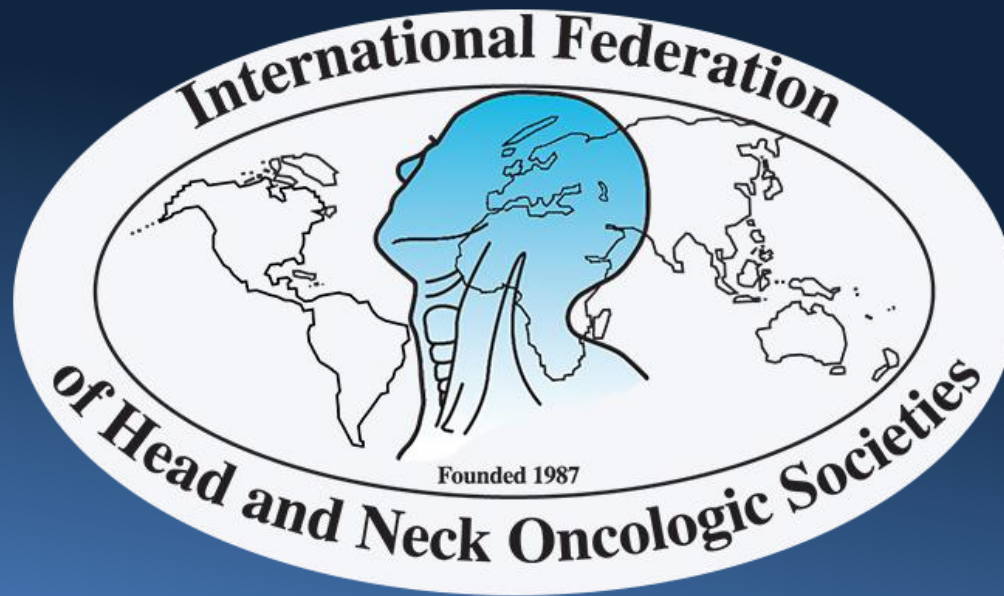




The International Federation of Head and Neck Oncologic Societies

Current Concepts in Head and Neck Surgery and Oncology 2018



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Salivary cancer management

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Epidemiology

- Relatively uncommon
 - 3% of head and neck neoplasms
 - 300 cases / year England and Wales
 - 2200 cases / year USA
 - ASIR 1 per 100,000
 - most common > 40 years
- Distribution
 - Parotid: 80% overall; 80% benign
 - Submandibular: 15% overall; 50% benign
 - Sublingual/Minor: 5% overall; 40% benign

WHO classification

Benign

- Pleomorphic adenoma
- Warthin tumor (adenolymphoma)
- Monomorphic adenomas:
 - Basal cell adenoma
 - Canalicular adenoma.
 - Oncocytoma
 - Sebaceous adenoma.
 - Sebaceous lymphadenoma
- Myoepithelioma
- Cystadenoma
- Sialoblastoma
- Cystadenoma
- Papillary cystadenoma
- Mucinous cystadenoma
- Keratocystoma
- Canalicular adenoma
- Sialadenoma papilliferum
- Sebaceous adenoma
- Lymphadenoma
- Benign Papilloma

Malignant

Low grade

- Acinic cell carcinoma.
- Basal cell adenocarcinoma.
- Clear cell carcinoma.
- Cystadenocarcinoma.
- Epithelial-myoepithelial carcinoma.
- Mucinous adenocarcinoma.
- Polymorphous low-grade adenocarcinoma
- Cribiform cystadenocarcinoma

Low grade, intermediate grade, and high grade

- Adenocarcinoma, NOS.
- Mucoepidermoid carcinoma*.
- Squamous cell carcinoma.

Intermediate grade and high grade

- Myoepithelial carcinoma.
- **High grade**
- Anaplastic small cell carcinoma.
- Carcinosarcoma.
- Large cell undifferentiated carcinoma.
- Small cell undifferentiated carcinoma.
- Salivary duct carcinoma
- Sebaceous carcinoma
- Sebaceous lymphadenocarcinoma
- Cystadenocarcinoma

Pleomorphic Adenoma

- Most common of all salivary gland neoplasms
 - 70% of parotid tumors
 - 50% of submandibular tumors
 - 45% of minor salivary gland tumors
 - 6% of sublingual tumors
- 4th-6th decades
- F:M = 3-4:1

Mucoepidermoid Carcinoma

- Most common salivary gland malignancy
- 5-9% of salivary neoplasms
- Parotid 45-70% of cases
- Palate 18%
- 3rd-8th decades, peak in 5th decade
- F>M
- Caucasian > African American

Mucoepidermoid Carcinoma

- Presentation
 - Low-grade: slow growing, painless mass
 - High-grade: rapidly enlarging, +/- pain

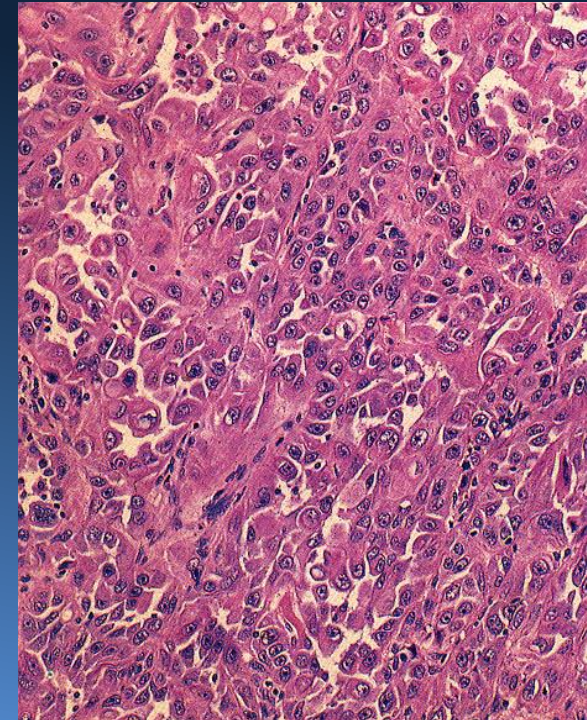
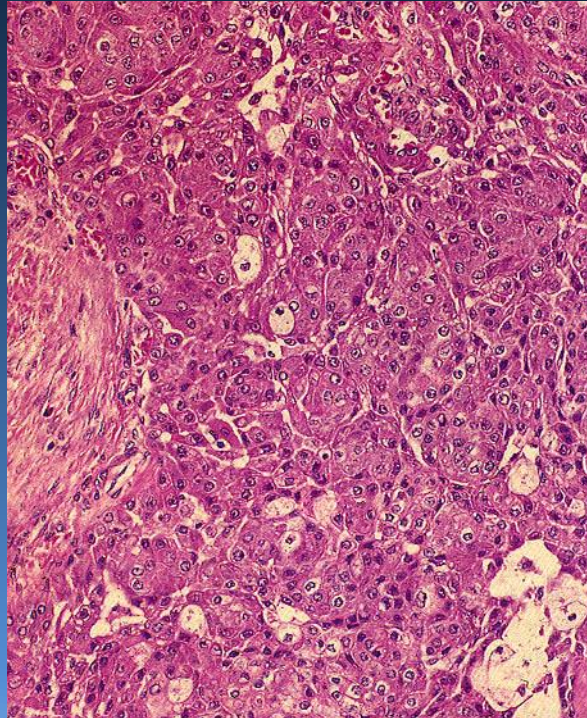
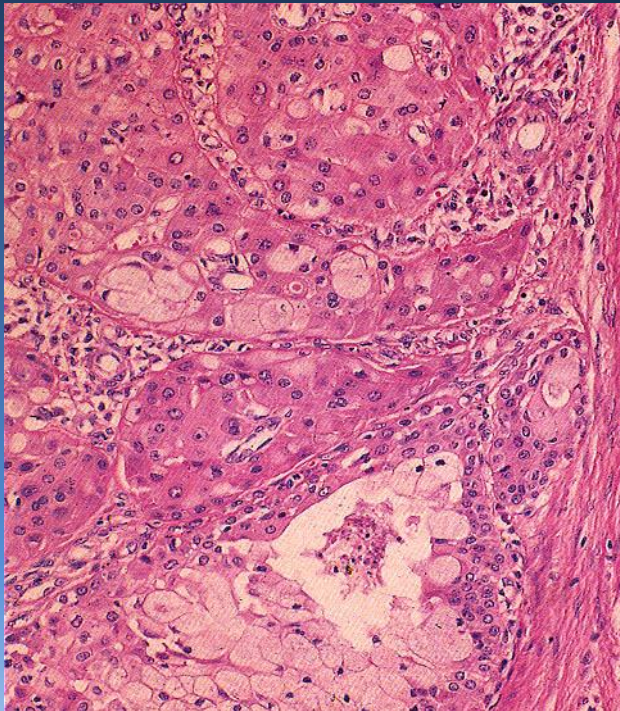


Mucoepidermoid Carcinoma

Low grade



High grade

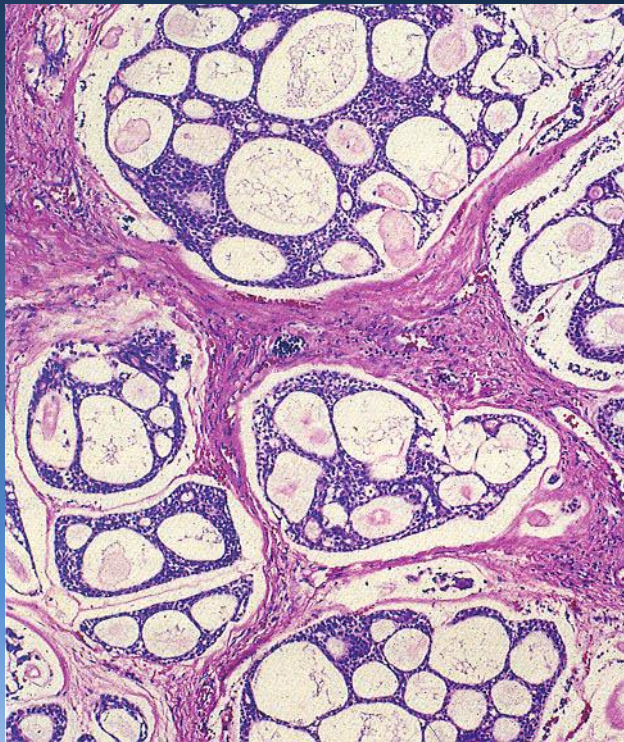


Adenoid Cystic Carcinoma

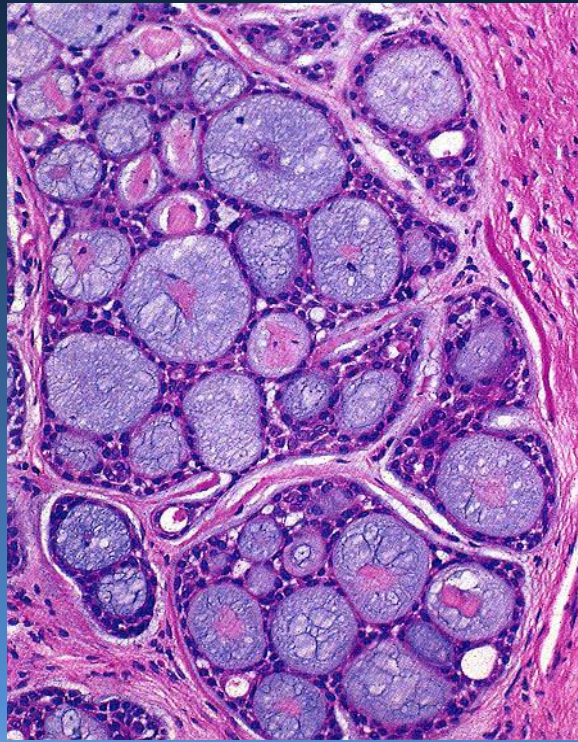
- Overall 2nd most common malignancy
- Most common in submandibular, sublingual and minor salivary glands
- M = F
- 5th decade
- Presentation
 - Asymptomatic enlarging mass
 - Pain, paresthesias, facial weakness/paralysis

Adenoid Cystic Carcinoma

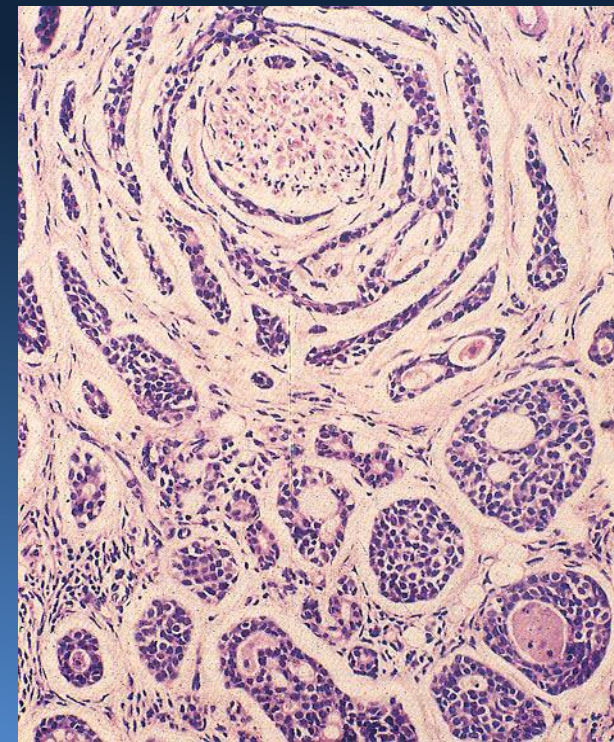
Cribriform



Tubular



Solid



Carcinoma ex PSA

Two types: vastly different prognoses

Widely invasive Carcinoma Ex Pleomorphic adenoma

Early Carcinoma Ex Pleomorphic adenoma

Presentation

Indicators of malignancy

- Short History
- Rapid Growth
- Pain
- Paraesthesia, nerve palsy (late sign)
- Skin tethering, fixation
- Regional Lymphadenopathy
- Bony involvement (uncommon)
- History of cutaneous malignancy

Diagnosis - FNAC

	Parotid	SMG
Sens	75%	91.3%
Spec	95%	94%
PPV	84.9%	91.35
NPV	91.2%	94.4%

Feinstein AJ, et al. Otol HNS, 2016

Does FNAC change management?

- Overall changed management in 35% cases
 - Lymphomas and inflammatory masses → no surgery
 - If benign in elderly → conservative
 - Better pre-op counselling

Heller, Amer J Surgery, 1992

Cytology/Histology

- FNA
 - Be aware of your cytologists diagnostic rates
 - Implications of high specificity for malignancy (>90%)
 - Consider clinical-cytological dissonance
- Consider USG core biopsy
- Open biopsy OK for minor salivary gland

Imaging

Indications

- Whenever malignancy is suspected
- Deep lobe extension
- Larger tumours
- Minor salivary gland tumours
- Lymphadenopathy

Imaging

- USS
 - Nature of lesion, vascular pattern, associated lymphadenopathy and guided FNA
 - High specificity (operator dependent): 80%
 - As good as FNA for identifying malignancy
- CT/MR
 - CT good for bone invasion
 - MRI better for soft tissue delineation, nerve involvement

T staging

- Tx Primary tumour cannot be assessed
- T0 No evidence of primary tumour
- T1 Tumour ≤ 2 cm in greatest dimension without
- extraparenchymal extension
- T2 Tumour > 2 cm but ≤ 4 cm in greatest dimension without
- extraparenchymal extension
- T3 Tumour > 4 cm and/or tumour having extraparenchymal
- Extension
- T4a Tumour invades skin, mandible, ear canal and/or facial
- nerve
- T4b Tumour invades skull base and/or pterygoid plates and/or
- encases carotid artery

Treatment Modalities

- Surgery
- Adjuvant Radiotherapy
- Primary Radiotherapy
 - unfit for surgery
 - palliation for unresectable disease
 - recurrent disease
- Chemotherapy: no clear role at present

Androgen
deprivation
therapy

Patient considerations

- Elderly
- Co-morbidities
- Expectations
- Adjuvant/primary RT
- Aggressive disease
- Poor prognosis

Principles of management

- Resect with negative margins
- Preserve the functioning facial nerve where possible
- Therapeutic neck dissection in N+ disease
- Elective neck dissection in selected N0 patients
- Adjuvant radiotherapy in higher- risk patients
- No routine role for chemotherapy

Pre-op counselling

- Numb ear
- Lower lip paresis
- Other branch paresis
- Scar
- Frey's syndrome
- Depression at op site

Operative steps

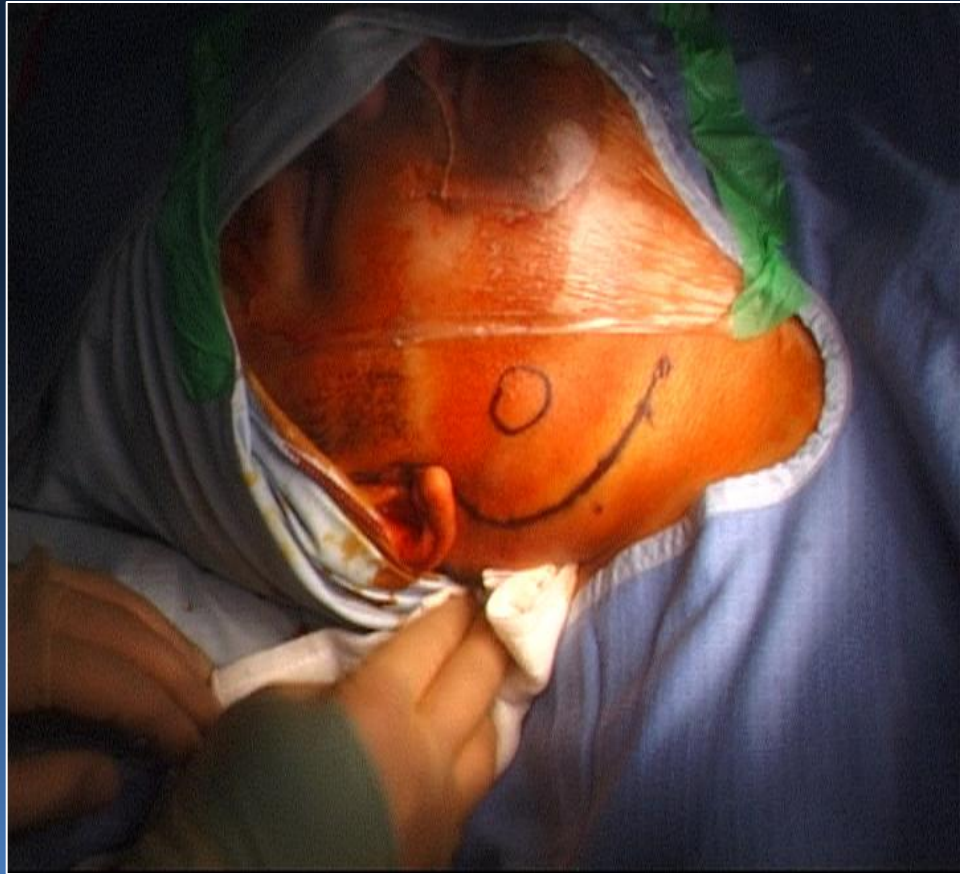
- Set-up
- Incision and great auricular nerve
- Flap elevation
- Posterior border
- Identification of nerve
- Tracing the nerve
- Closure

Equipment

- GA no paralysis
- Adequate theatre time
- Facial nerve monitor
- Instruments
 - Fine curved mosquito forceps
 - Bipolar diathermy

Set - up

- Facial nerve monitor
- Positioning
 - Head ring
 - Shoulder pad
- Mark and infiltrate incision
- Cotton wool in ear canal
- Prep
- Draping
 - Expose forehead , eye and mouth
 - Clear adhesive drape



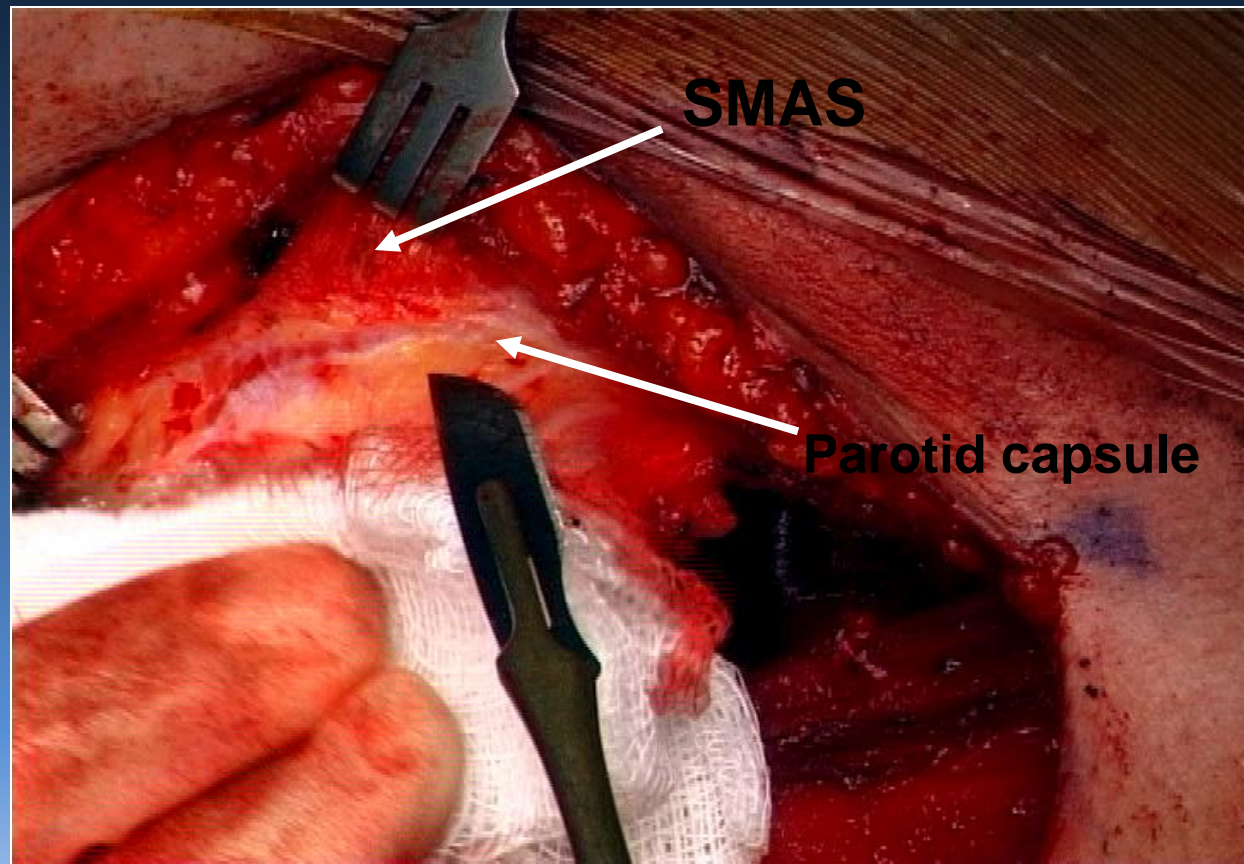
Set-up

- Incision marking
 - Two finger breadths from mandibular border
 - Posterior part of flap not too long or thin

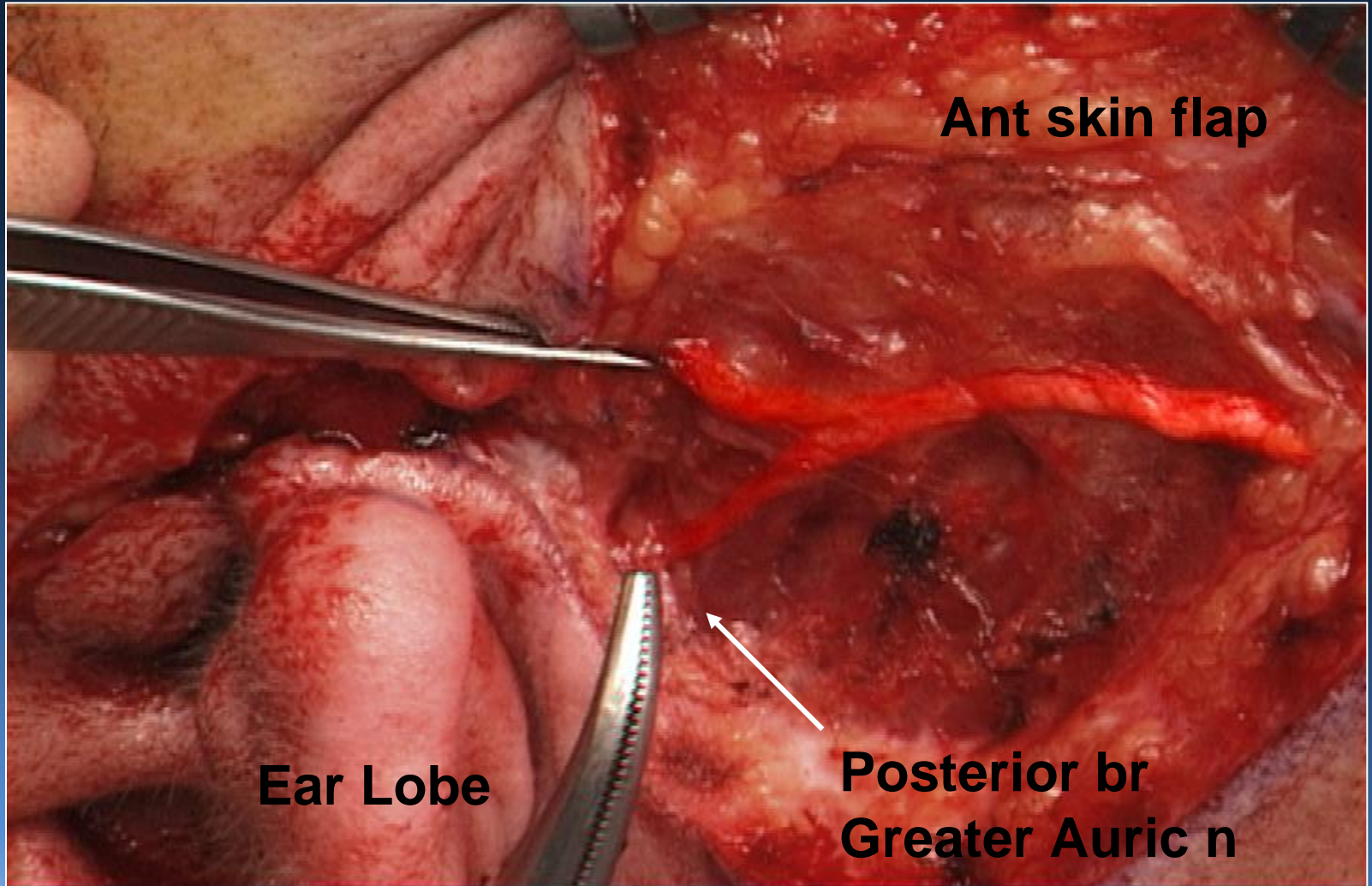


Flap elevation

- Level : between SMAS and parotid capsule
- Key: good traction – counter-traction
- Aim : white line

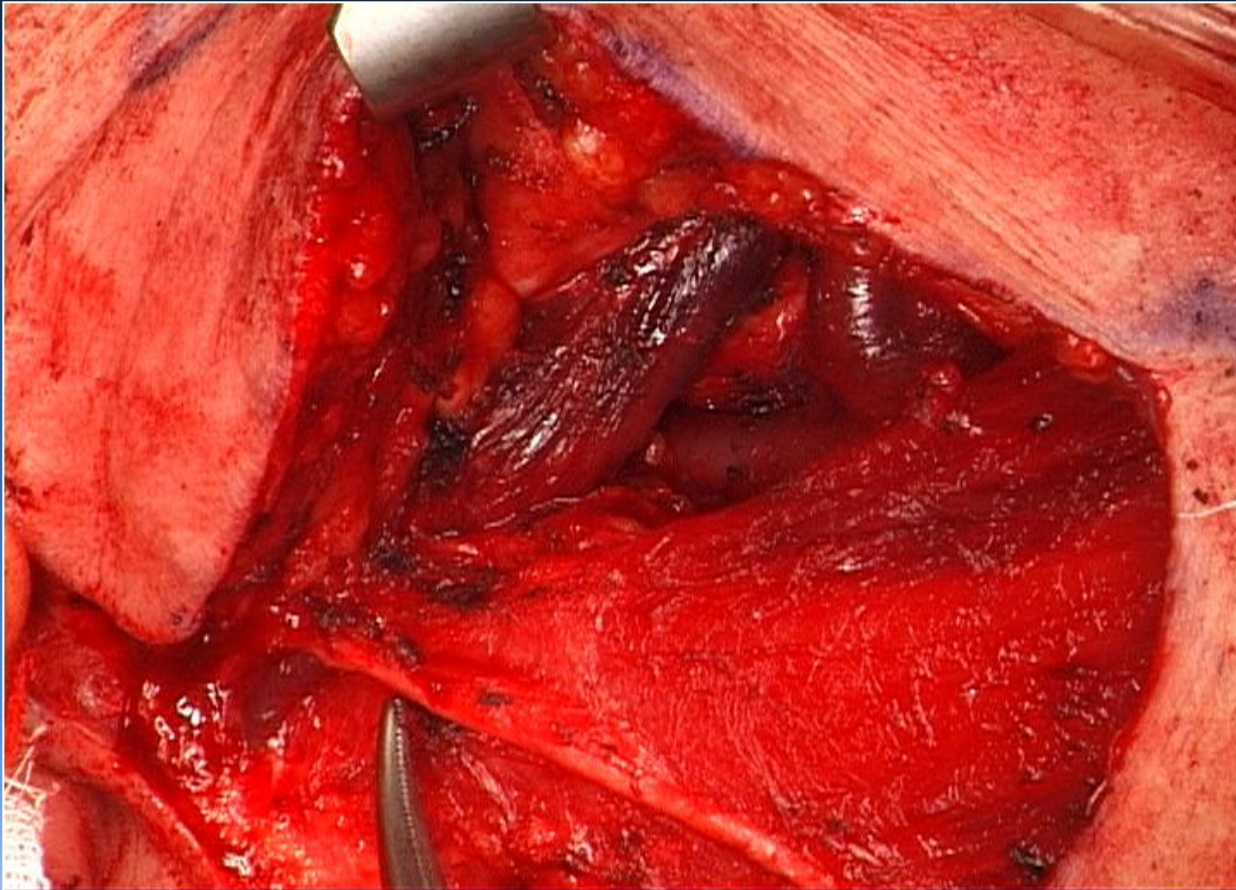


Greater auricular nerve



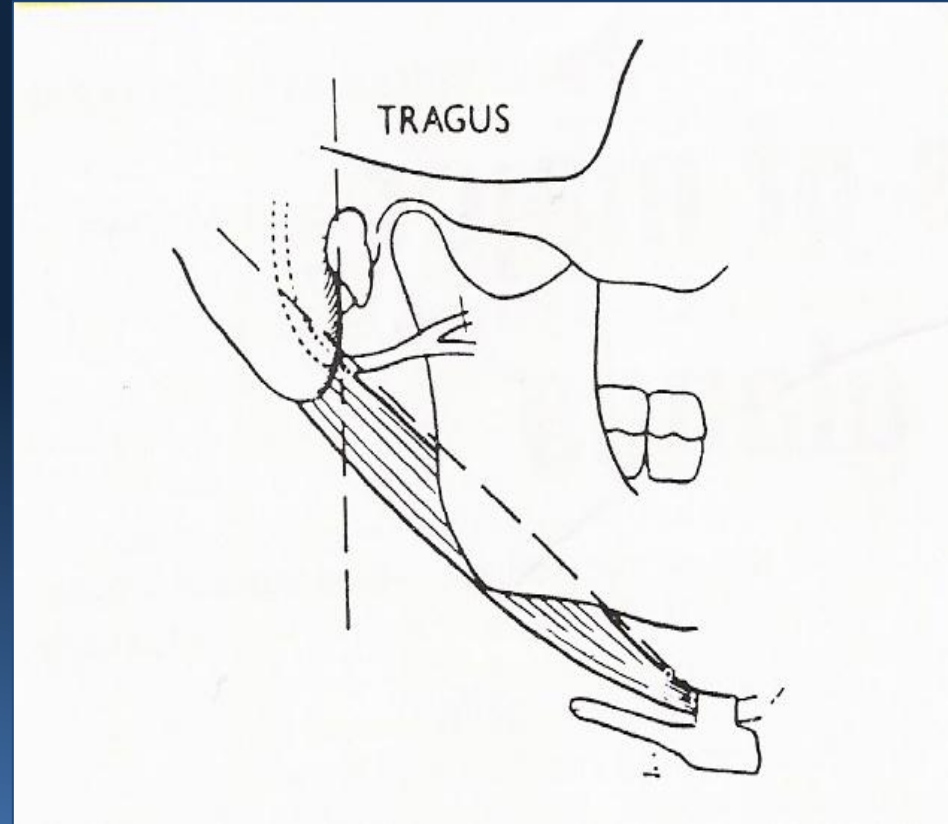
Posterior border elevation

- Separate parotid from sternomastoid, then posterior belly digastric



Anterograde dissection

- **Landmarks:**
- Posterior belly of digastric
- Face of mastoid tip
- Tympano-squamous suture
- Tragal pointer
 - 1cm medial and inferior



From Stell & Maran's Head and neck surgery, 4th ed

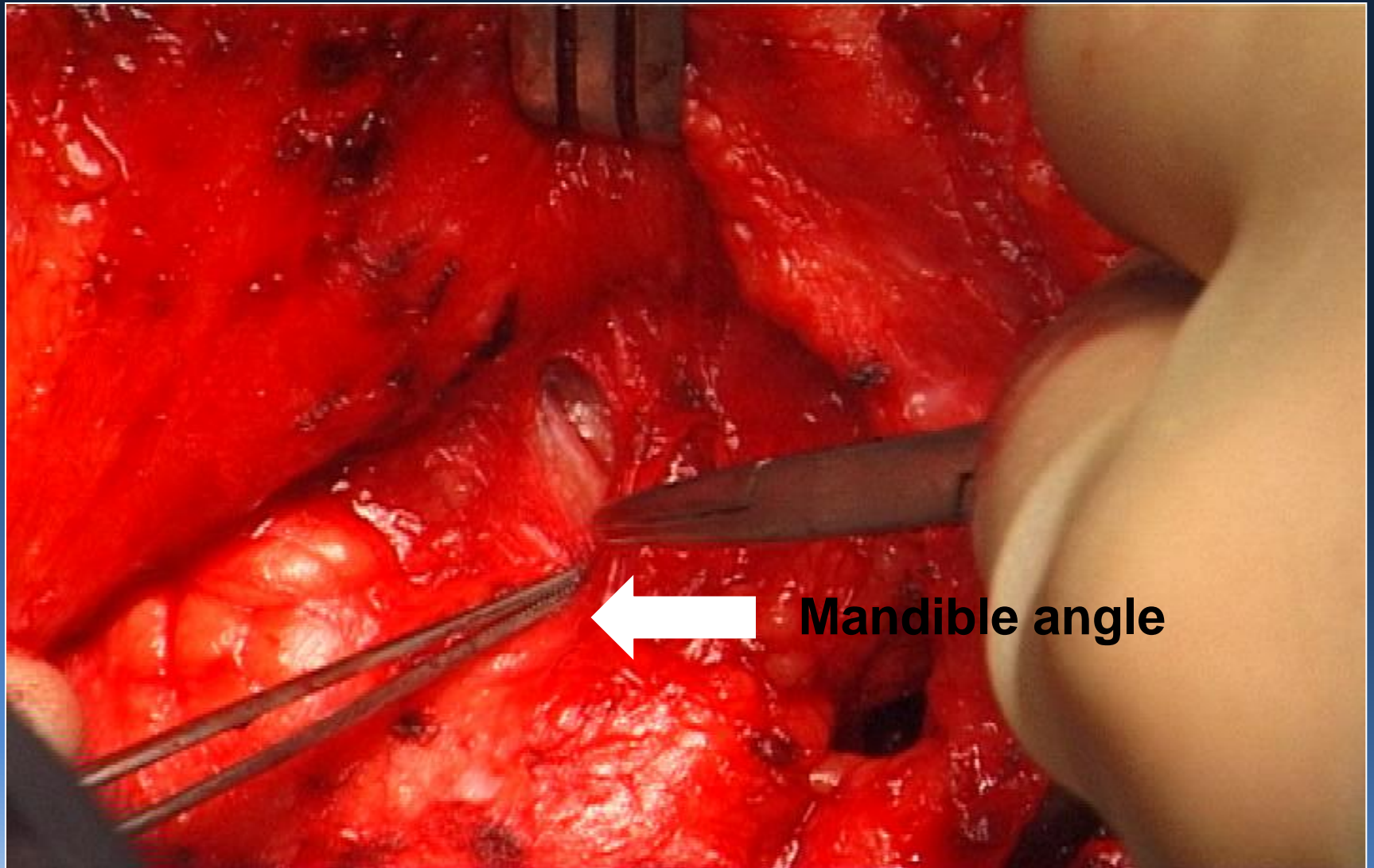
Anterograde dissection

- Retract on parotid
- Bipolar tissue at cartilaginous EAC
 - Down to level of tragal pointer
- Progressive release of tissue using mosquito forceps
- Use broad front
- Beware post auricular artery branch on facial nerve trunk
- Use of the Lahey swab technique
 - Nerve in tissue between it and posterior belly of digastric

Identify the nerve: retrograde

- Marginal mandibular nerve : most consistent.
 - At angle of mandible, runs 2cm below border then back up crossing facial artery 2cm ant to angle
- Buccal branch
 - 1cm below and parallel to zygomatic arch
- Temporal branch
 - Bisects line from tragus to lateral canthus

Identify the nerve: retrograde



Trace the nerve

- Technique:
 - Insert mosquito over nerve
 - Lift mosquito up
 - Open jaws and see nerve
 - Bipolar and cut above mosquito
- Retract overlying tissue using two mosquitos
- Beware tip of mosquito angling down
- May need to trace several branches

Facial nerve management

- Philosophy
 - Preserve unless
 - Involved directly with tumour
 - Not functioning pre-op
- Resection of nerve
 - margins
 - nerve reconstruction
 - facial symmetrisation

Nerve integrity monitor



Postoperative issues

- Nerve paresis
- Sialocoele / salivary fistula
- First bite syndrome
- Frey's

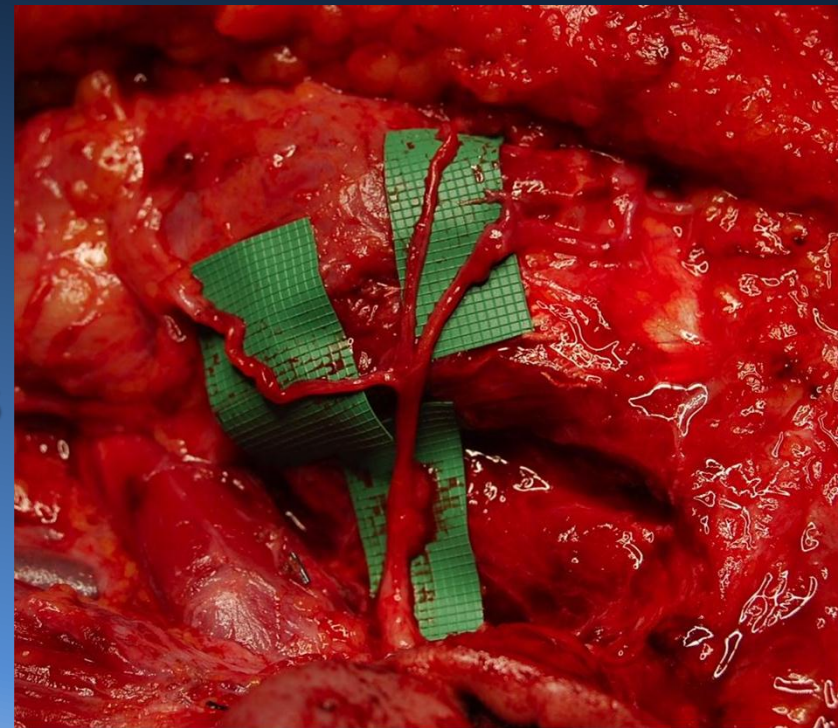


Philosophy

- Always consider primary facial reanimation, even during long cancer operations
 - Cooperative surgical colleagues
 - Cooperative anaesthetist and scrub team!
- Age and co-morbidities not a barrier to reanimation
- Radiotherapy can affect the outcome and appearance
 - Scarring → reduced active range of tendon excursion both short and long-term
 - Tendon /muscle contracture
 - Worse trismus than non-RT patients
 - Volume loss in cheek → asymmetry correctable with lipomodelling

Options

- Direct nerve suture
- Interpositional nerve graft
 - Sural nerve
 - Great auricular nerve
- Nerve substitution
 - Hypoglossal
 - Masseteric
 - Cross-facial nerve grafts
 - Babysitter procedure



Rehabilitation

- Tarsorrhaphy
- Medial canthoplasty
- Brow lift
- Gold weight
- Static sling
- Eye care

Closure

- Haemostasis
 - Normalise BP
 - Valsalva
- Irrigation
- Drain
 - Hairline
 - Secure with loose suture to SCM
- Vicryl to SMAS
- Clips and 5/0 nylon to skin

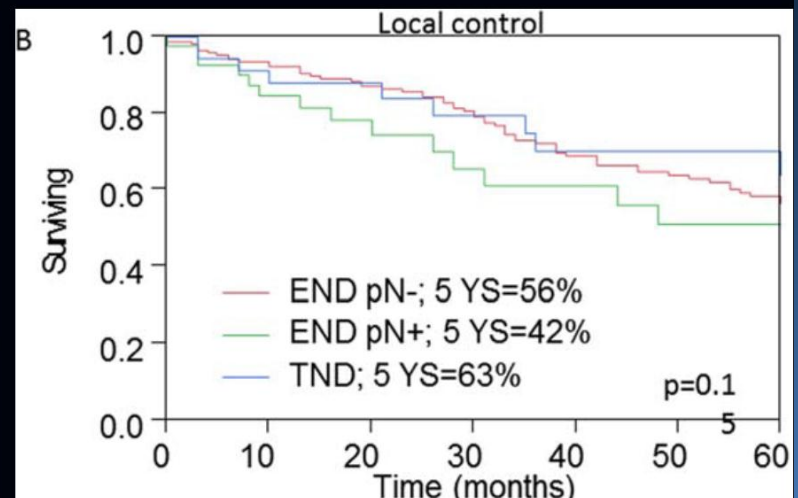
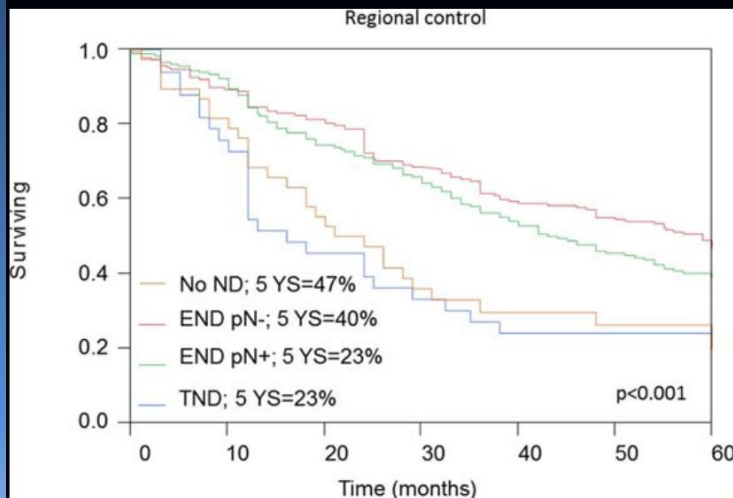
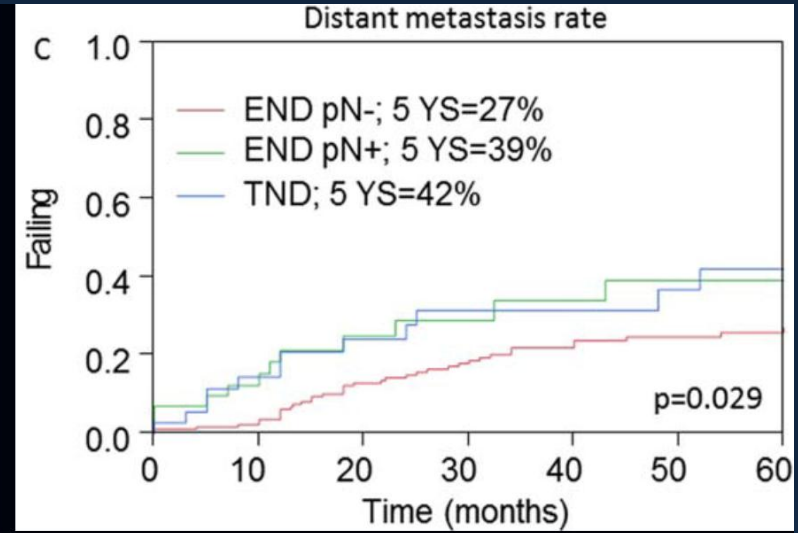
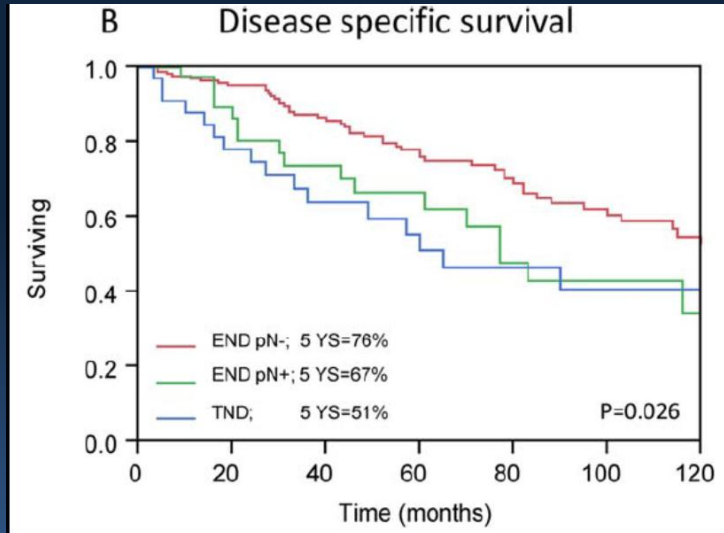
Post-op care

- Drain removed next day
- Sutures and clips removed at 5 days

Neck management: parotid

- N0 neck
 - 13% to 39% metastatic rate
 - all cases of malignant parotid tumours except low grade tumours
 - SND (II, III and Va) for patients with:
 - large (T3/4) and/or
 - clinically high-grade tumours
- N+ neck
 - Neck dissection based on extent (usually II-V)

Efficacy of END vs TND



Neck management: SMG

- N0 neck
 - all except low grade small tumours
 - SND (I-III) for patients with high-stage and/or clinically high-grade tumours
- N+ neck
 - Neck dissection based on extent (usually I-V)

Adjuvant RT

- Indications
 - high-grade histology
 - Tumours (>4 cm)
 - residual neck disease
 - Incomplete/close margins, peri-neural invasion, extracapsular spread, bony invasion
 - Lymph node mets
 - Recurrent disease
- No RT
 - small, completely excised, low-grade tumours

Adjuvant RT

- No clear cut survival advantage
- Locoregional control benefit in patients with adverse features

Tullio et al , JOMS, 2001

Minor salivary gland tumours

- Seen at any head and neck site
- Presentation variable
- 9-23% of salivary tumours
- 40%-50% of palatal / buccal are malignant
- Sublingual rare (<1%, but >70% are malignant)



Management

- Wide local excision if possible
- Radical excision and reconstruction for larger tumours
- Neck Dissection as $\approx 20\%$ occult metastasis
- Adjuvant RT based on histology and stage

Unresectable or recurrent disease

- Consider RT +/- chemotherapy
- Consider carbon ion therapy

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Patients

Collaborators



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Clinical trials and
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Quality of life



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