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MUNI MED

Oncology in ENT I

KOCHHK FNUSA

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Incidence

- Malignant tumors of head and neck represent in men approx. 6 %, in women approx. 2 % of all malignant tumors.
- In CR incidence of ca orofarynx and oral cavity 12,7/100 000 in man and 4,6 /100 000 in woman (2012); increasing trend.
- Incidence of larynx carcinoma was in CR 9,3/100 000 inhabitants in men and 1,1/100 000 inhabitants in women (2012).
- Incidence partially depends on geographical site (increase from North to South)

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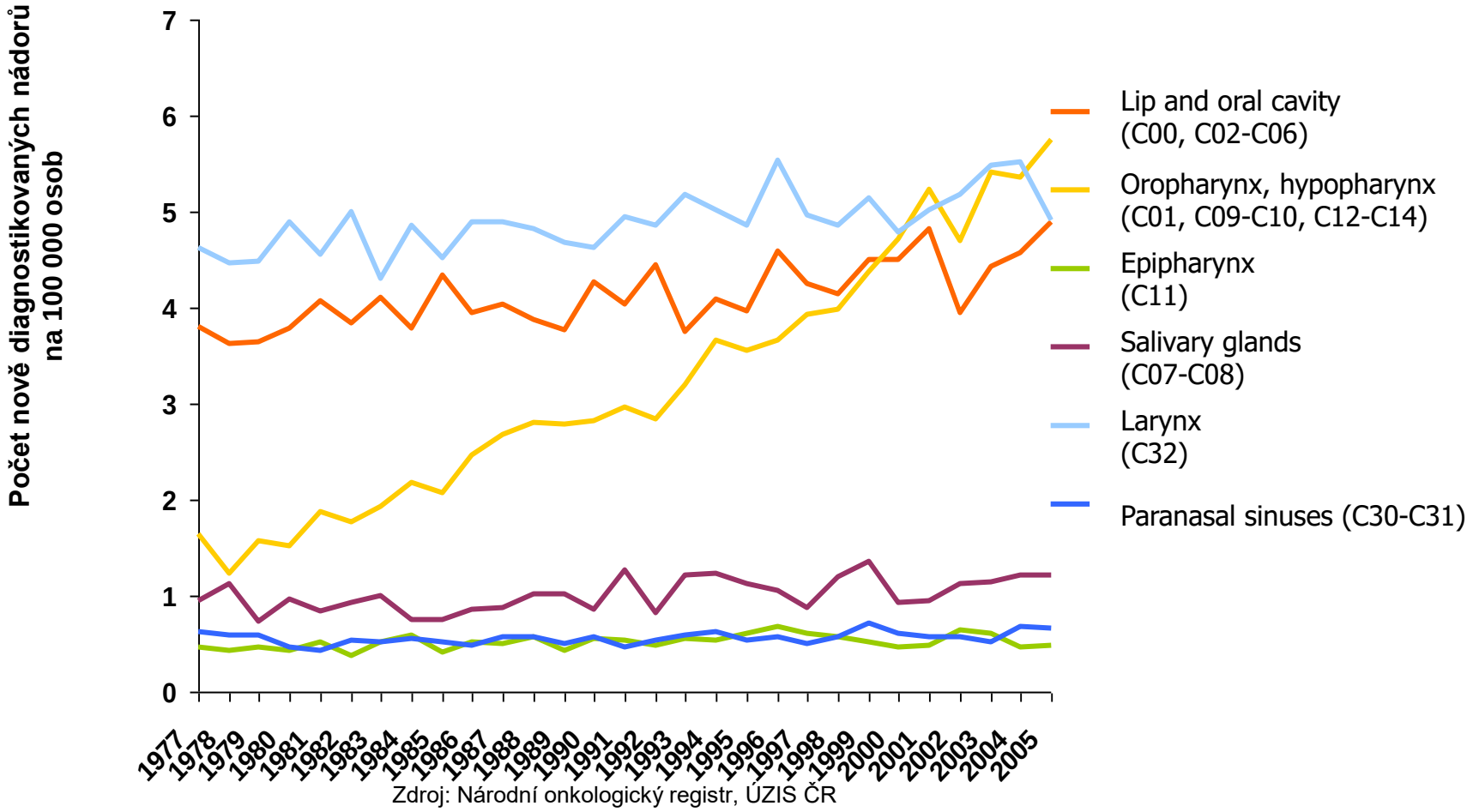
Development of head and neck cancer incidence in CR



Zdroj: Národní onkologický registr, ÚZIS ČR

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Therapeutic results of Head and Neck Cancer in relation to stage

Approximate 5-year survival

I. stage	91 %
II. stage	77 %
III. stage	61 %
IV. a	32 %
IV. b	25 %
IV. c	4 %

The prognosis of patients with the head and neck carcinomas is worsened due to frequent associated diseases. (hepatic cirrhosis, diseases of circulatory and breathing systems etc.).

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Aim of clinical diagnosis

Determine

- **Verification** of malignancy; **determination of character** (grading) **and size of primary tumor**, staging. The result is **TNM** classification.
- **determination of performance status of organism**, incl. psychological and social status.

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Clinical diagnosis, assessment of prognosis

- Complete history of disease
- Clinical examination - inspection, palpation incl. endoscopy
- Histology of primary tumor, lymphatic drainage (FNAB, FNAC), cytology diagnosis (HPV)
- Diagnostic imaging – CT, MR of the neck, X-ray of chest, better CT, sonography of abdomen; contrast imaging of esophagus, ev. endoscopy in case of dysphagia; PET-CT, PET-MR
- Functional examination: swallowing, phonation, breathing,
- Stomatology examination; Nutritive screening
- Exclusion of duplex tumors: prostate in man, gynecology in woman
- Special examination, if necessary: psychologic examination, social status and support, prevention (smoking)

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History of disease - „Listen to patient, he is saying diagnosis“

HNSCC tumors (exception of glottic cancer) – some months without specific symptoms (as civilization disease – chron. pharyngitis, rhinosinusitiss, laryngitis), later:

- Feeling of foreign body in pharynx, burning, pain, especially one-sided in swallowing spreading into ears, foetor ex ore
- dysphagia, limited movability of tongue, worse pronunciation – mumbling due to tongue fixation
- anorexia, cachexia
- bleeding
- trismus
- Impaired nose breathing, epistaxis, external deformities in face
- hoarseness, cough, dyspnea
- tumor on external neck

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Aspection

Remove removable tooth prosthesis, consider pathological changes on mucous membrane, asymmetry changes in oropharynx

- non healing damage on mucous membrane
- hard tumor covered of mucous membrane, later disintegration into ulcer.
- exophytic tumors – patient frequently notices itself
- white and red stain persisting on palate, tongue, buccal mucosal membrane – necessary biopsy and watching.
- neck tumor

Palpation (+bimanual palpation)

- form and size in cm, site (localization), topographic description
- consistency - soft, elastic, fluctuant, firm or hard
- mobility - vertically or horizontally, fixed or adherent
- evaluation of borders of tumor

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Imaging methods

- CT, MR of the neck, X-ray of chest, better CT, sonography of abdomen
- PET-CT, PET-MR in advanced stages of pts. with assumption of curative treatment
- contrast imaging of esophagus, eventually endoscopy in case of dysphagia

Undesirable side affects – CT: Radiation, MR: Small amount of Gadolinium could be stored in brain

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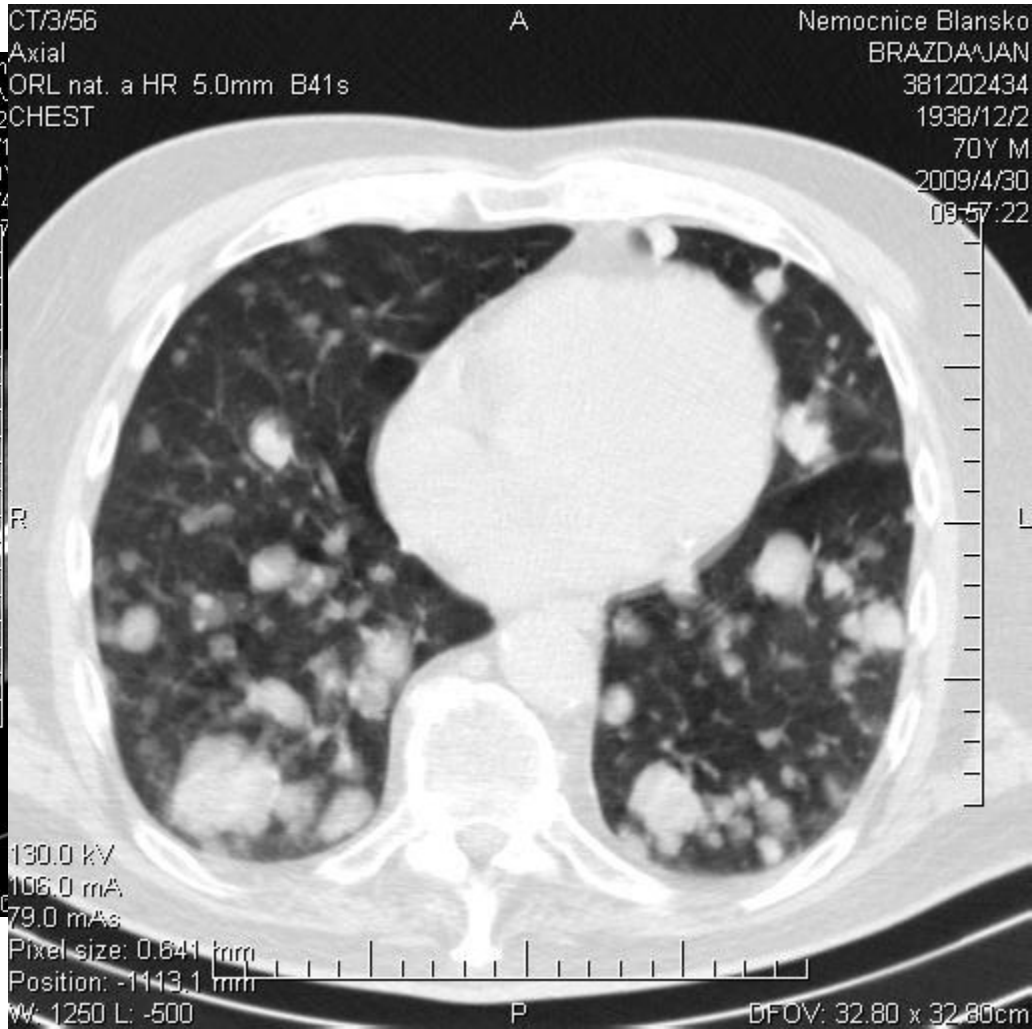
M-classification: M_0 no proof for distant. meta, M_1- exist proof for distant metastesis

thyroid gland cancer – metastases in ling M_1 (PUL)



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Endoscopic evaluation („optic biopsy“)

- **Horizontal** – NBI, SPIES (Storz Professional Image Enhancement System – changes of color spectrum of tissues)
- **Vertical** - *Optical coherence tomography (OKT),* - radiation similar to infrared light penetrating 1-3 mm into depth; images issues in vertical section

Narrow Band Imaging

White light

NBI filter

NBI light

415 nm 540 nm

NBI image

Color adjustment

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Classification of intraepithelial capillary vascular loops

The highest changes of vascular microarchitecture, the most significant probability of malignancy.

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Narrow band imaging

Indication

- screening – early diagnosis
- Follow up after oncology treatment
- During evaluation or surgery for aimed biopsy

Limitations

- stagnation of saliva, mucous
- hyperkeratosis
- Influence of age, gender, lifestyle
- False positivity – laryngeal papillomatosis

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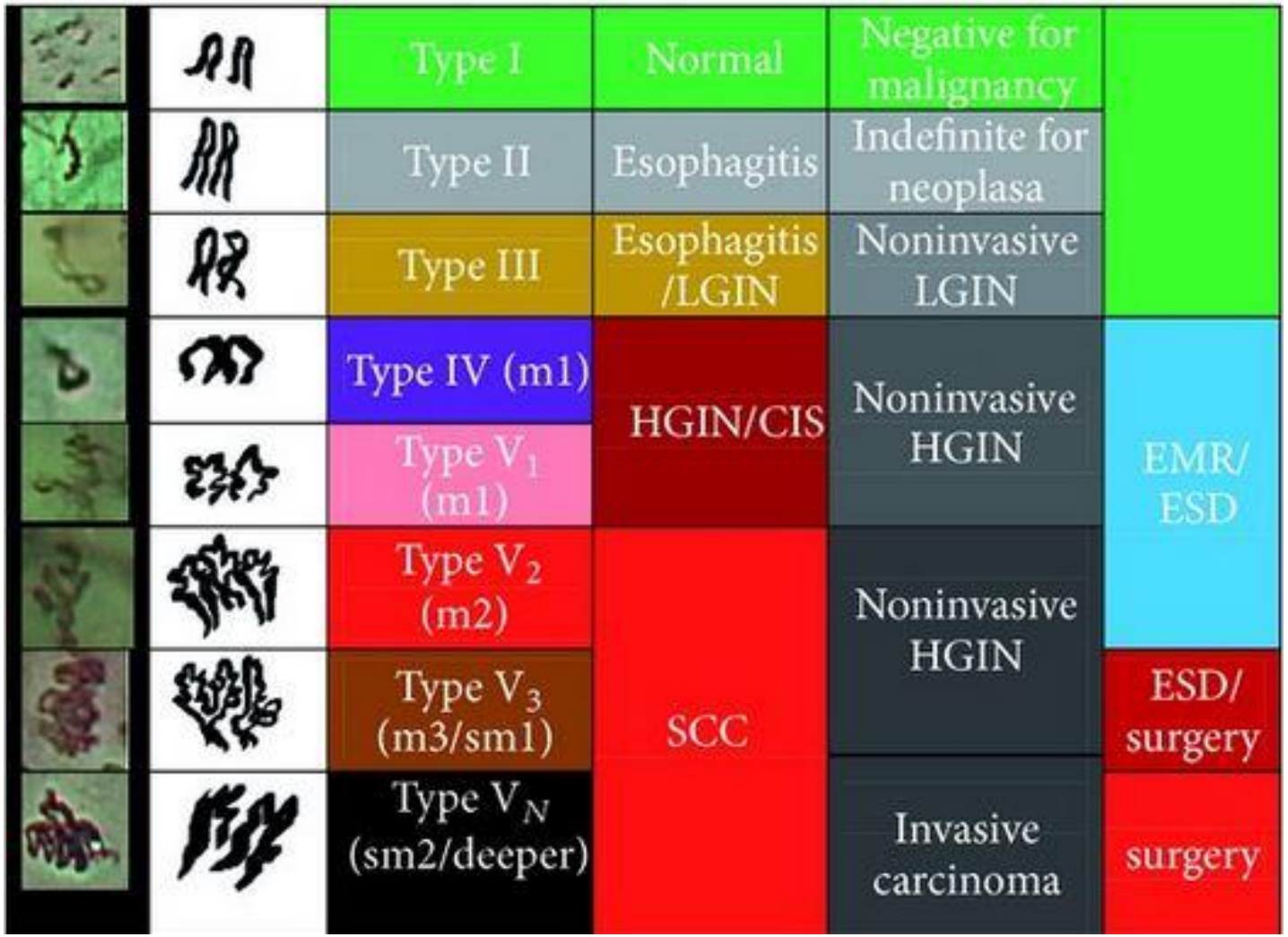
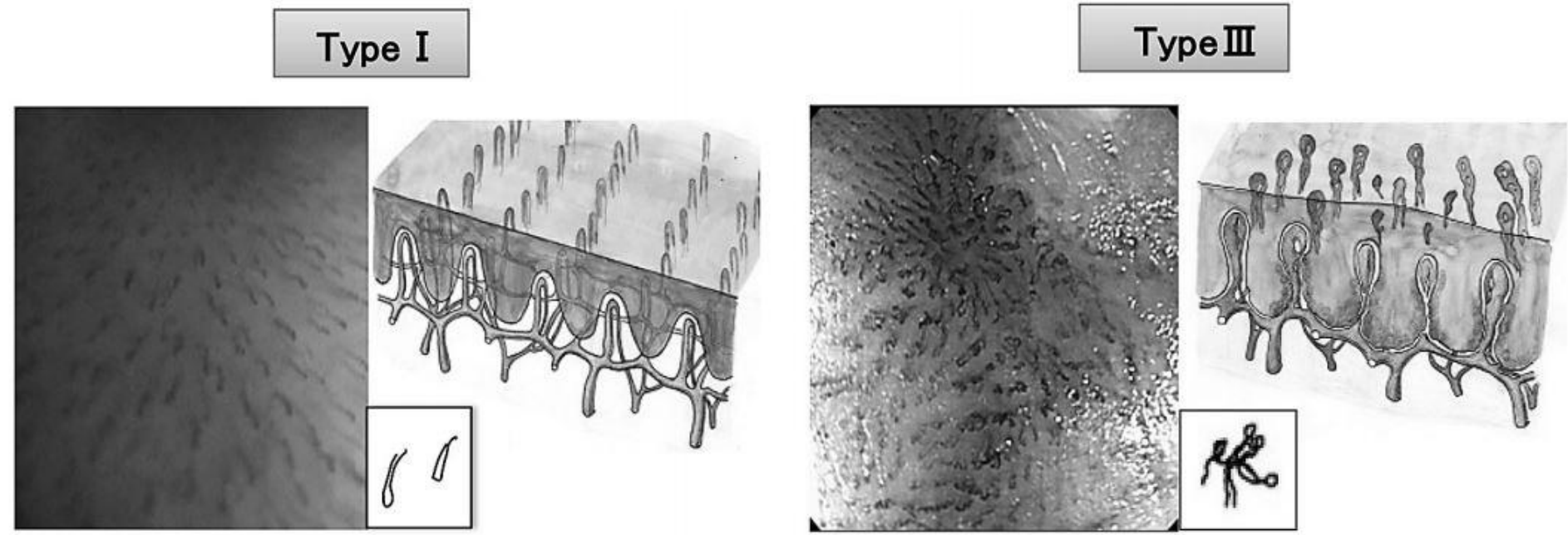
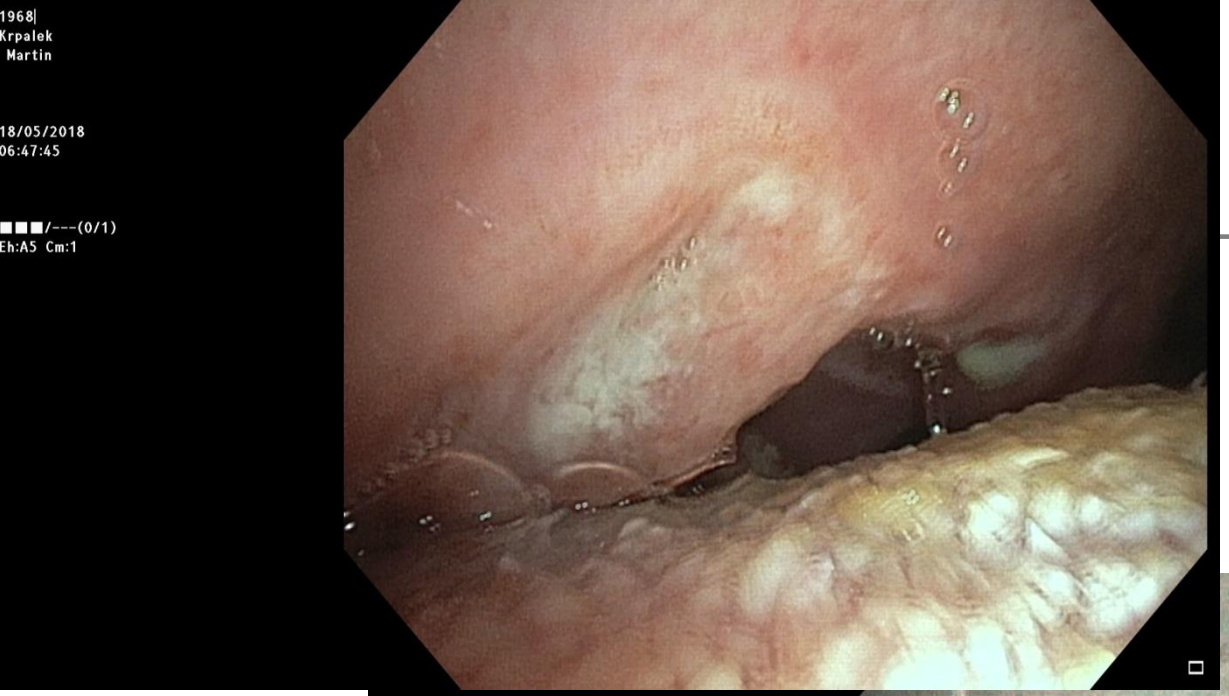
Classification of intraepithelial capillary vascular loops in esophageal tumors. Inoue – progressive loss of vascular microarchitecture





Classification of SCC oral cavity. (Shibahara et al. 2013)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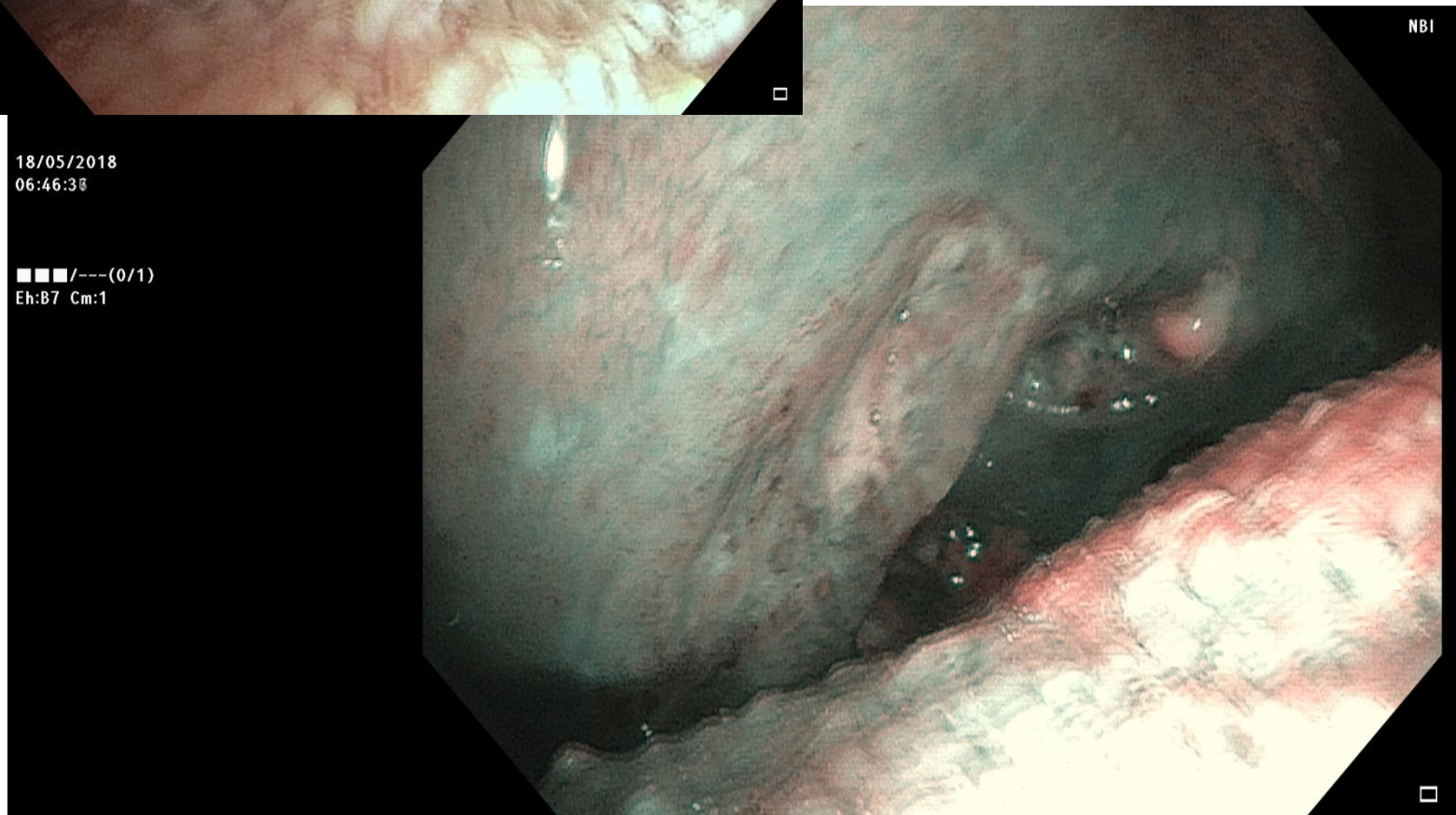
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Quality of life (QOL)

- Endeavor to safe and improve. QOL is possibly limiting factor for oncologic treatment.
- Measurement of QOL – Karnofski scale, ECOG performance status
- Measurement of QOL after oncologic treatment - psychometric questionnaires (Quality Of Life Questionnaire), for inst. QLQ-C30, QLQ-N&N37 a QLQ-H&N35

ECOG performance status

Grade	Description of patient
0	Fully active, able to carry on all predisease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light housework, office work
2	Ambulatory and capable of all self-care but unable to carry out any work activities; up and about more than 50% of waking hours
3	Capable of only limited self-care; confined to bed or chair more than 50% of waking hours
4	Completely disabled; cannot carry on any self-care; totally confined to bed or chair
5	Dead

Source: Eastern Clinical Oncology Group

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Karnofski scale

Score, %	State of Health
100	Healthy, no symptoms or signs of disease
90	Capable of normal activity, few symptoms or signs of disease
80	Normal activity with some difficulty, some symptoms or signs
70	Caring for self, not capable of normal activity or work
60	Requiring some help, can take care of most personal requirements
50	Requires help often, requires frequent medical care
40	Disabled, requires special care and help
30	Severely disabled, hospital admission indicated but no risk of death
20	Very ill, urgently requiring admission, requires supportive measures or treatment

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Possibility of improvement of therapeutical results

- **preventive programs** aimed on risk groups (smoking, alcohol, etc.)
- **earlier detection** – increased oncologic „vigilance“ of family doctors and specialists
- **new methods of treatment** – new chemotherapeutics - new drugs, new protocols, immunotherapy, gene therapy, irradiation - new regimens, new methods in surgery
- suitable **individual adaptation of current therapeutical procedures** **prognostic** factors should be found – for instance evaluation of proliferation, apoptosis, DNA ploidy

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Prognostic factors

- In relation to **patient** (Age, tobacco use, alcohol abuse, the whole status of organism, Immunology)
- In relation to **treatment** (tumors responding better to neoadjuvant treatment have better prognosis and they are suitable for treatment damaging genome (chemo, radiotherapy)
- In relation to **disease**

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Prognostic factors in relation to disease

- primary localization
- **TNM stage -** TNM classification of malignant tumors, International Union Against Cancer (UICC)
- serum tumor markers (CEA, SCCA, TPA, CYFRA-21-1)
- **Histologic differentiation** („grading“ according to Broder)
- **Predictive biomarkers**

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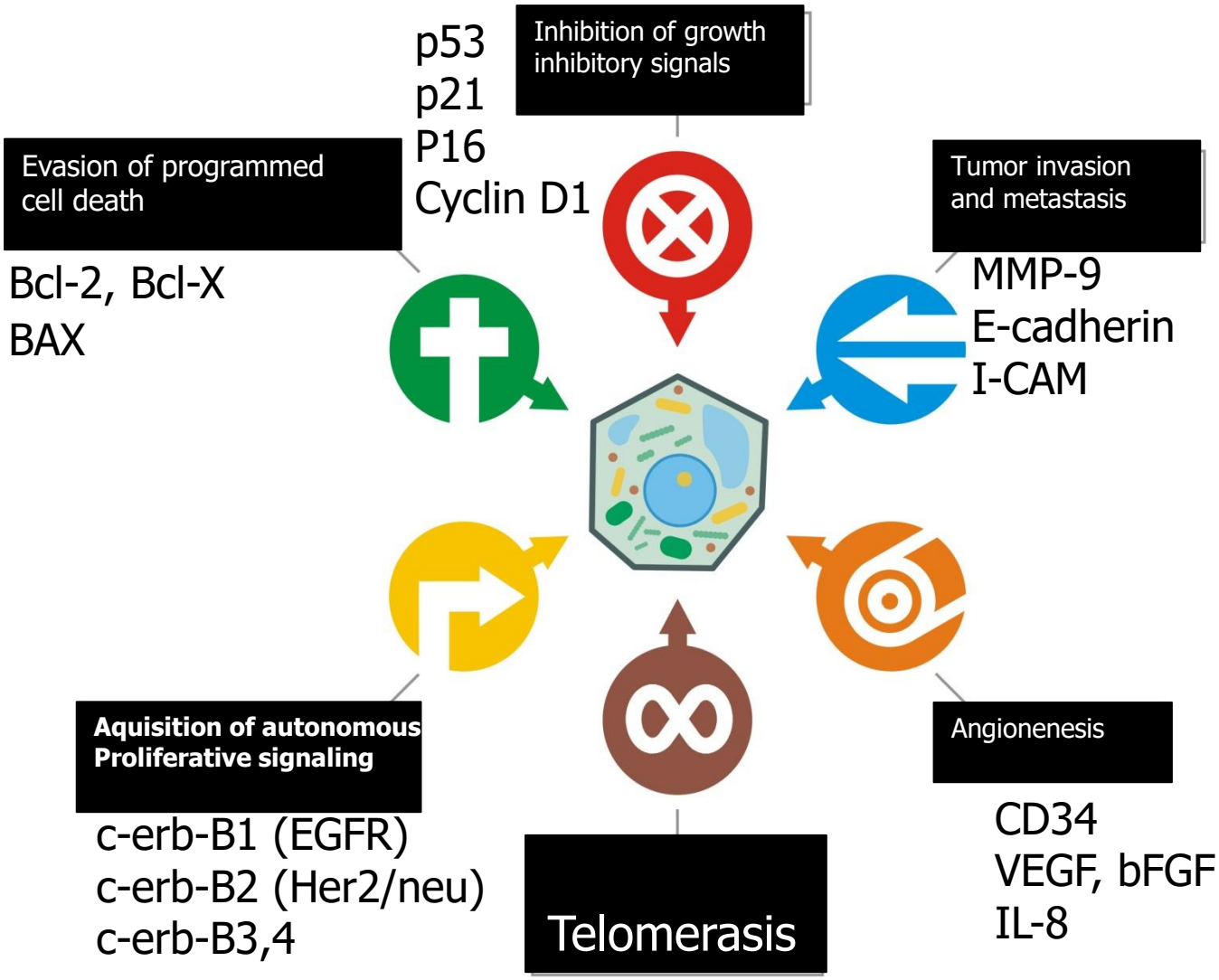
Biomarkers

Help to identify high-risk patients who may benefit from a more aggressive treatment approach.

Help to identify patients who are resistant to radiotherapy or chemotherapy, potentially avoiding the morbidity of ineffective therapies.

May serve as targets for biologic therapies.



Hanahan D, Weinberg RA: The Hallmarks of cancer. Cell 100:57-70, 2000. (8496 citations)

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Targeted therapy, Precise therapy

- Higher expression of EGFR in 70-100 % HNSCC
- Blocking of signal pathway
- Activation of ADCC (**A**ntibody-**D**ependent **C**ellular **C**ytotoxicity)
- Activation on complement depended cytotoxicity
- Dependence of outcome on genetic alterations

Precise therapy include mainly genomic aspects in diagnosis and treatment.

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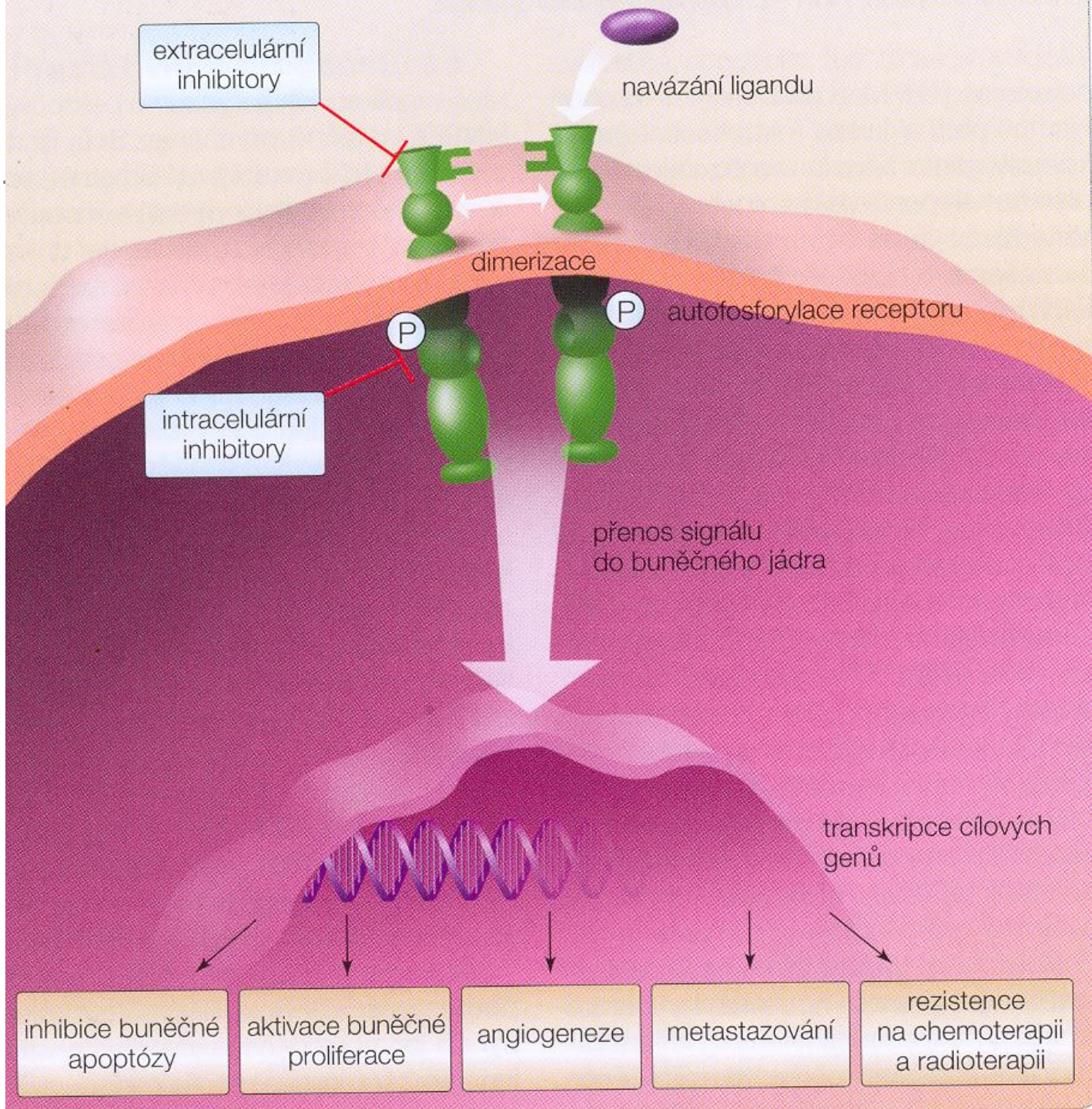
Signal pathway of EGFR in carcino-genesis



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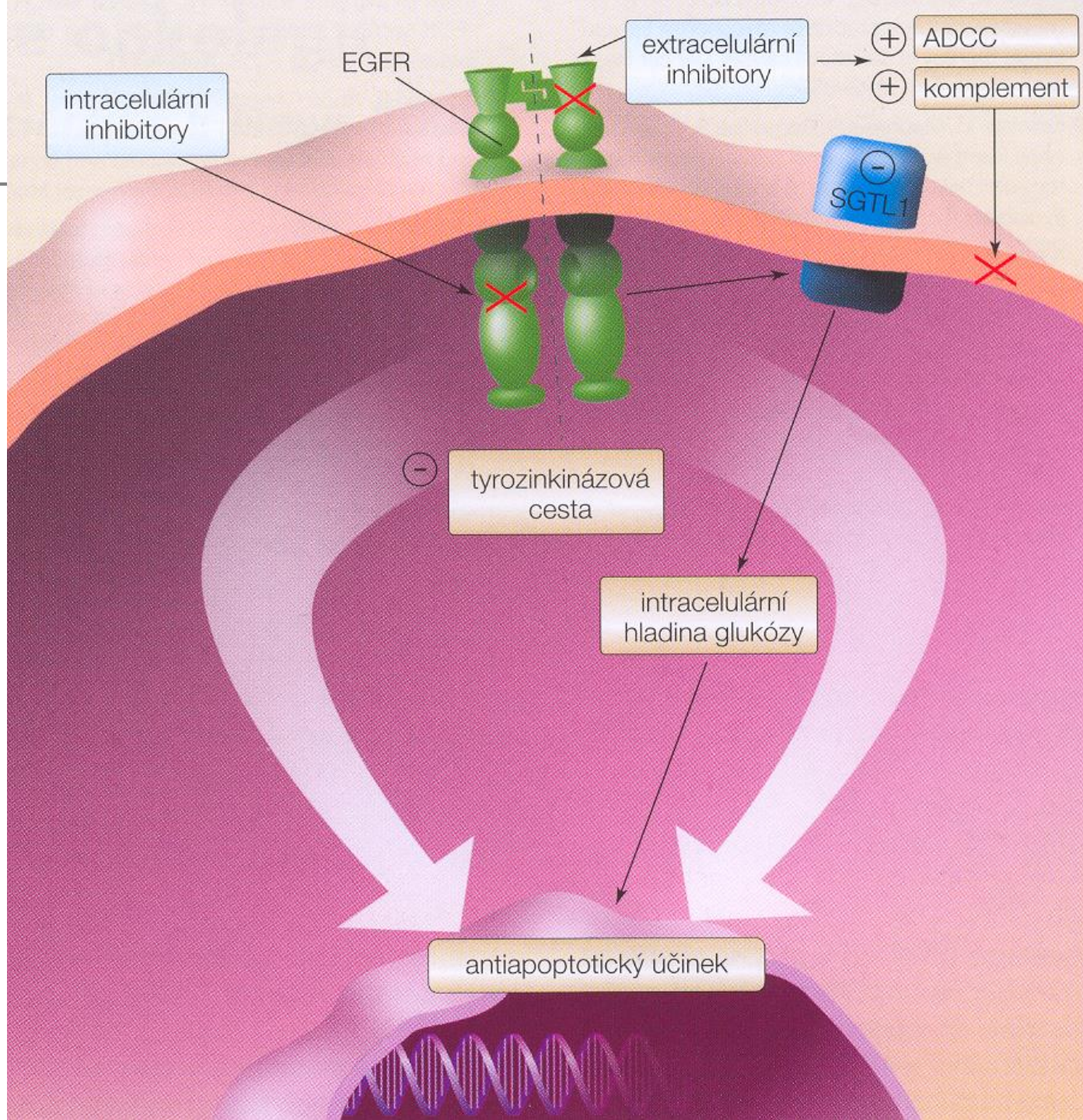
Mechanism of efect inhibitors EGFR



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- More targeted antitumor therapy and lower undesirable effect than CHT
- EGFR receptors not present in hematopoietic tissue, but are present in skin, liver and GIT.
- Consequence of this are **undesirable effect**: diarrhea, rash, hypomagnesemia

Rash, 14 days after end of therapy (RT+Cetuximab)

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Addition of p-16/HPV status to evaluation of existing markers could be very helpful in prediction of treatment outcome in oropharyngeal cancer.

Prevalence of HPV positivity is given about 60% in Czech population.

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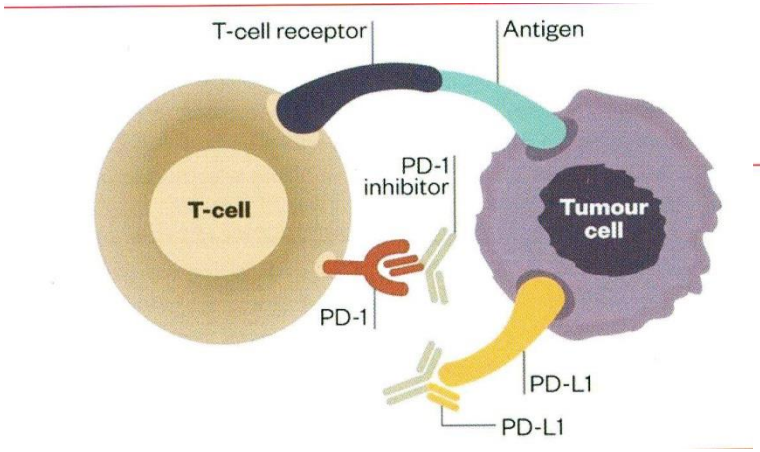
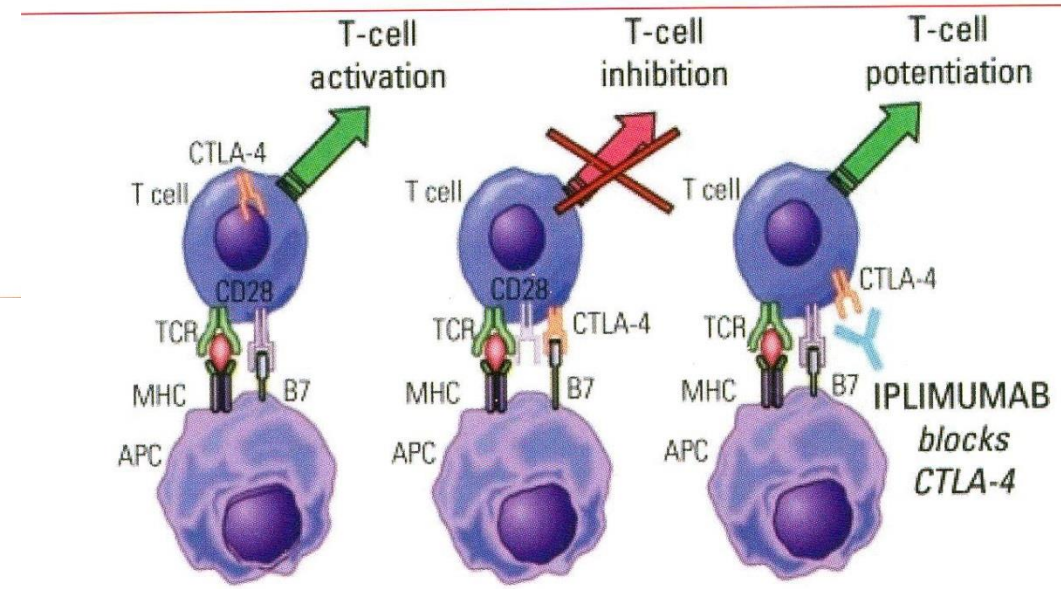
Checkpoint inhibitors – part of multimodal treatment

PD-1, PD-L1 (nivolumab, pembrolizumab) a CTLA-4 inhibitors: (ipilimumab)

Immune-oncology





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Independent risk faktor for survival!
Increasing Time to Treatment Initiation

Growth from a tumor of 1 g (the minimum size detectable) to a potentially lethal mass of 1 kg requires only 10 further doubling of cell number (DeVita: Cancer)

Colin T. Murphy, Thomas J. Galloway, Elizabeth A. Handorf, et al.:

Survival Impact of Increasing Time to Treatment Initiation

for Patients With Head and Neck Cancer in the United States. J Clin Oncol 34:169-178. © 2015

51,655 pts with HNSCC. Number of days from diagnosis to treatment initiation 61 to 90 days compared with less than 30 days independently increased risk of death (Cox regress analysis, HR, 1.13; 95% CI, 1.08 to 1.19)

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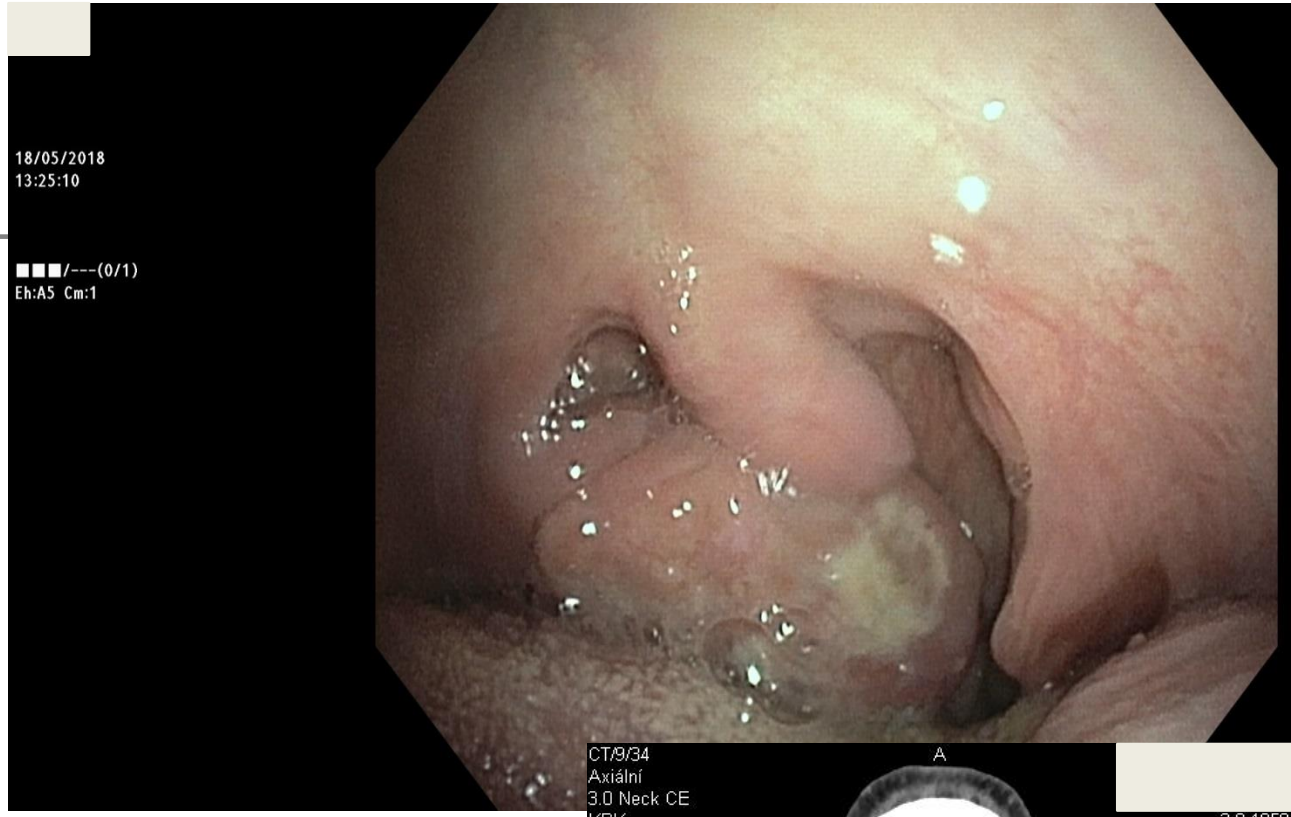
Theory vs. reality



68 y patient, teacher

1/2018 pain in neck

2/2018 GP gave antibiotics

20/4 2018 evaluated on ENT

Taken sample - cT4 cN3 M0, p16 +

11/6 2018 supposed onset of CHRT

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TNM classification

- Developed by Pierre Denoix v years 1942-1952; 2017 - **8. edition**
- Separately assessment of primary tumor (T), local metastasis (N) and distant metastasis (M)
- Basic philosophy – more advanced tumor, worse prognosis

Aims:

1. Helps clinician in treatment planning
2. Give information about prognosis
3. Helps in describing treatment outcomes
4. Make easier exchange of information between treatment centers
5. Helps in research HNSCC in man
6. Support activities in fight against malignant tumors

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8th edition of TNM classification

- **Published in December 2016, Czech edition 4/2018.**
- **Main change in comparison with 7. ed. Is separate classification of p16+ oropharyngeal cancer**

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HNSCC therapy

- **Curative** – induce permanent remission
- **Palliative** – to stop tumor growth
- **Symptomatic** (Best Supportive Care, BSC) – treat only symptoms (pain food income, bleeding, breathing)

Localized HNSCC– separate treatment only **surgery** or **radiotherapy**
(not systemic treatment as a „definitive“ treatment)

Surgery

- **Curative** – complete removal of tumor tissue (R_0 resection)
- **Palliative** – to reduce tumor mass and improve usage of other treatment options.

Chemotherapy – only in combination with radiotherapy

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Organ saving protocol

- The aim – preservation of the organ and its function
- Surgery is avoided or minimalized
- Organ preservation should not sacrifice length of survival
- Indication: patient with locally advanced but resecable tumor

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Criterion for Treatment choice

Overall survival, time to recurrence or progression

versus

QOL, functional status, age of patient and his wish

- **Patients with tumor penetrating cartilage are usually not suitable for organ saving protocol**
- **Cost effectiveness**
- **Predictive biomarkers**
- **Neoadjuvant chemotherapy – tumor response to treatment – only in clinical experiment**

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Treatment choice

Non surgical treatment (Chemo – radiotherapy)

- higher S-phase fraction (of cell cycle, SPF)
- Lower share of cells with realized proliferation
- Relatively good general condition (KI, BMI, weight loss)

Surgery

- Combination of higher apoptotic threshold (higher expression of p53, bcl-2) and lower share of cells in SPF and higher share of cells G2M phase
- Advanced tumors (higher tumor volume),
- Lower expression of Ki-67
- lower micro vascular density (hypoxic tumor)

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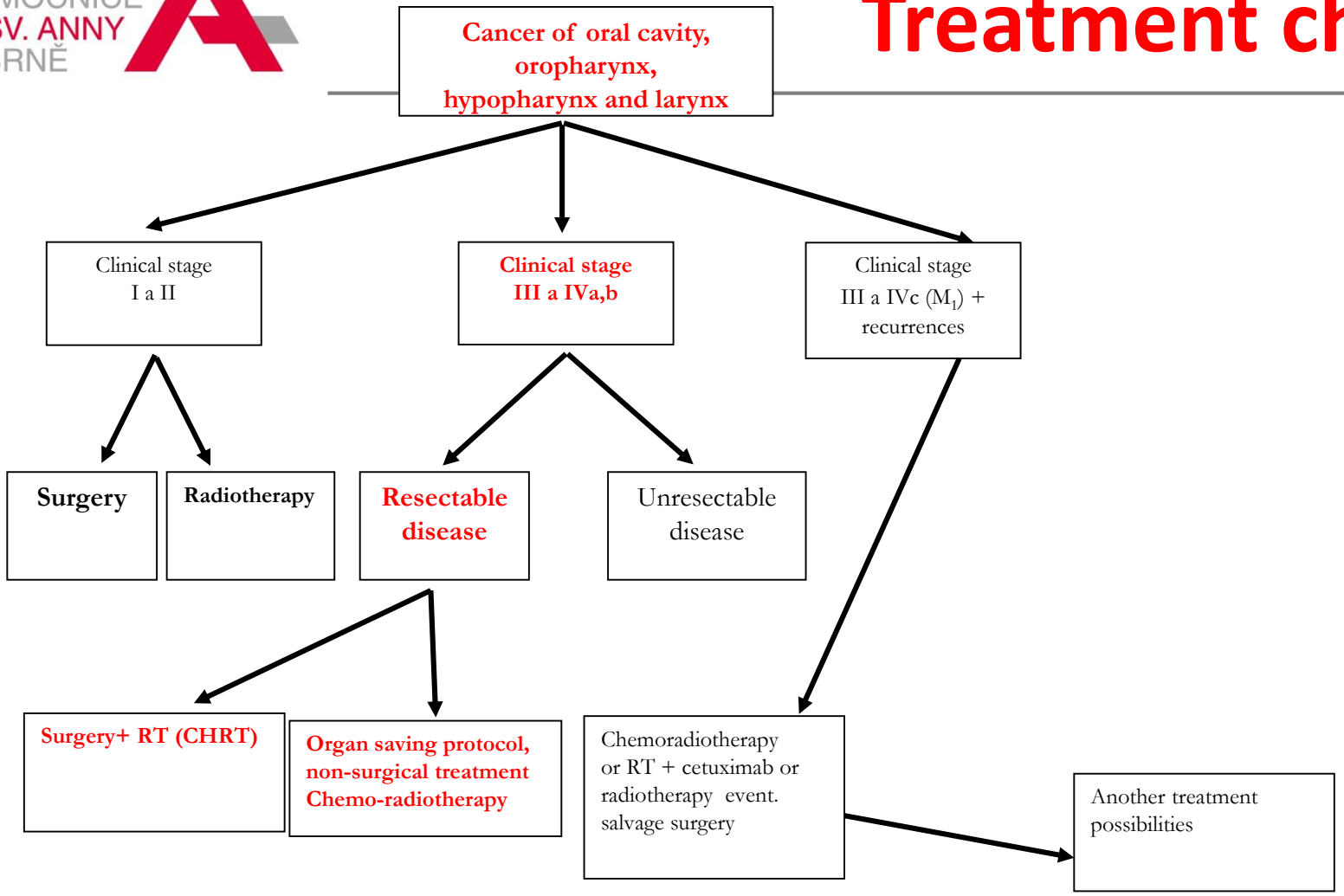
Treatment choice



The treatment strategy is usually is based on international guidelines, such as NCCN. Nowhere in the whole world doesnt´exist **unambiguous** consent regarding choice of the treatment modality. NCCN Guidelines distinguishes various levels of consensus.

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The methods of surgical treatment of lymph node metastases

Surgery from external approach – in case of primary surgical treatment, combined with Radiotherapy/radio chemotherapy

Non surgical treatment – in case of „organ saving protocols“ - Radiotherapy/radio chemotherapy

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The methods of treatment

Prescalene node biopsy (Daniels operation)

The radical curative neck dissection (Resectio venae jugularis internae en bloc sec. Crile 1906) - the upper boundary of the operation is the base of the skull and the lower boundary lies at the level of the clavicle. The sternocledomastoid muscle, the internal jugular vein are removed.

The goal of neck dissection is complete removal of lymph nodes and vessels between the superficial and deep cervical fascia.

Functional deck dissection- the sternocleidomastoid muscle, the internal jugular vein, the accessory nerve are preserved.

An elective neck dissection is a neck dissection carried out in the absence of palpable lymph nodes for a primary tumor which experience has shown to have a high metastatic rate - oropharynx, hypopharynx, supraglottic larynx, the base of the tongue. The purpose of this operation is to deal with micro metastases.

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Types of neck dissections (classification according to Ferlito)

ND (neck dissection)

L (left,) or R (right,) – side of neck dissection

removed region lymph nodes, described with Roman numeral to VII, in increasing order

removed non lymphatic structures

Examples:

ND (R, I-V, SCM, IJV, CN XI) – Radical neck dissection

ND (L, I-V, SCM, IJV, CN XI, CN XII) - extended Radical neck dissection with removal of n. hypoglossus

ND (I-V, SCM, IJV) – Modified radical dissection with saving n. accessorius (n. XI)

Abbreviations: ND – neck dissection , SCM – m. sternocleidomastoideus, IJV – v. jugularis interna,

CN XII – n. hypoglossus, CN XI, SAN – n. accesorius (spinal accesory nerve), ECA – a. carotis externa, ICA – a.carotis interna, CCA – a. carotis communis, CN VII – n. facialis,

CN X – n. vagus, SN – neck sympaticus, PN – n. phrenicus, SKN –skin,

PG – glandula parotis, SG – glandula submandinbularis, DCM – deep cervical muscles

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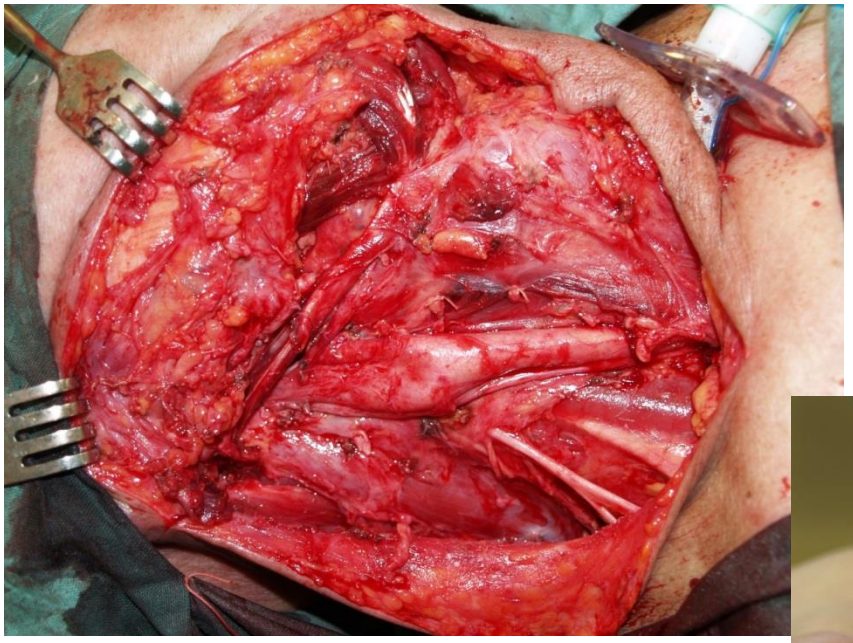
Radical neck dissection
ND (R, I-V, SCM, IJV, CN XI) **sec. Crile**



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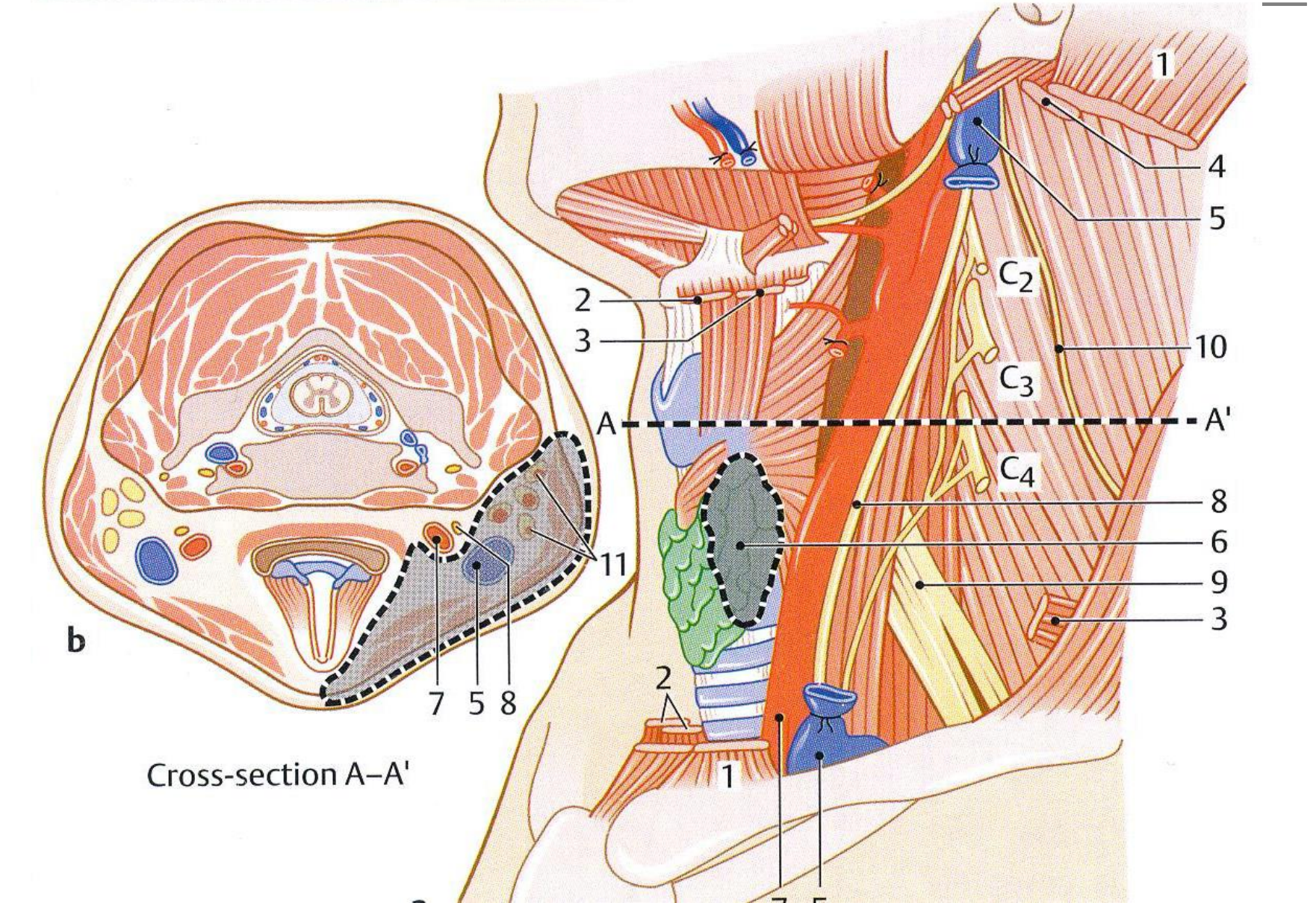
Modified radical dissection with saving n. accessorius(I-V, n.XI saved)



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Prevention

Therapeutic results of Head and Neck Cancer reveal strong dependency in relation to stage – therefore prevention!

Primary – to prevent tumor formation by influence risk factors

Secondary – diagnosis of early tumor stages

Tertiary – early detection of local recurrences or distant metastasis or possibly tumor duplicity

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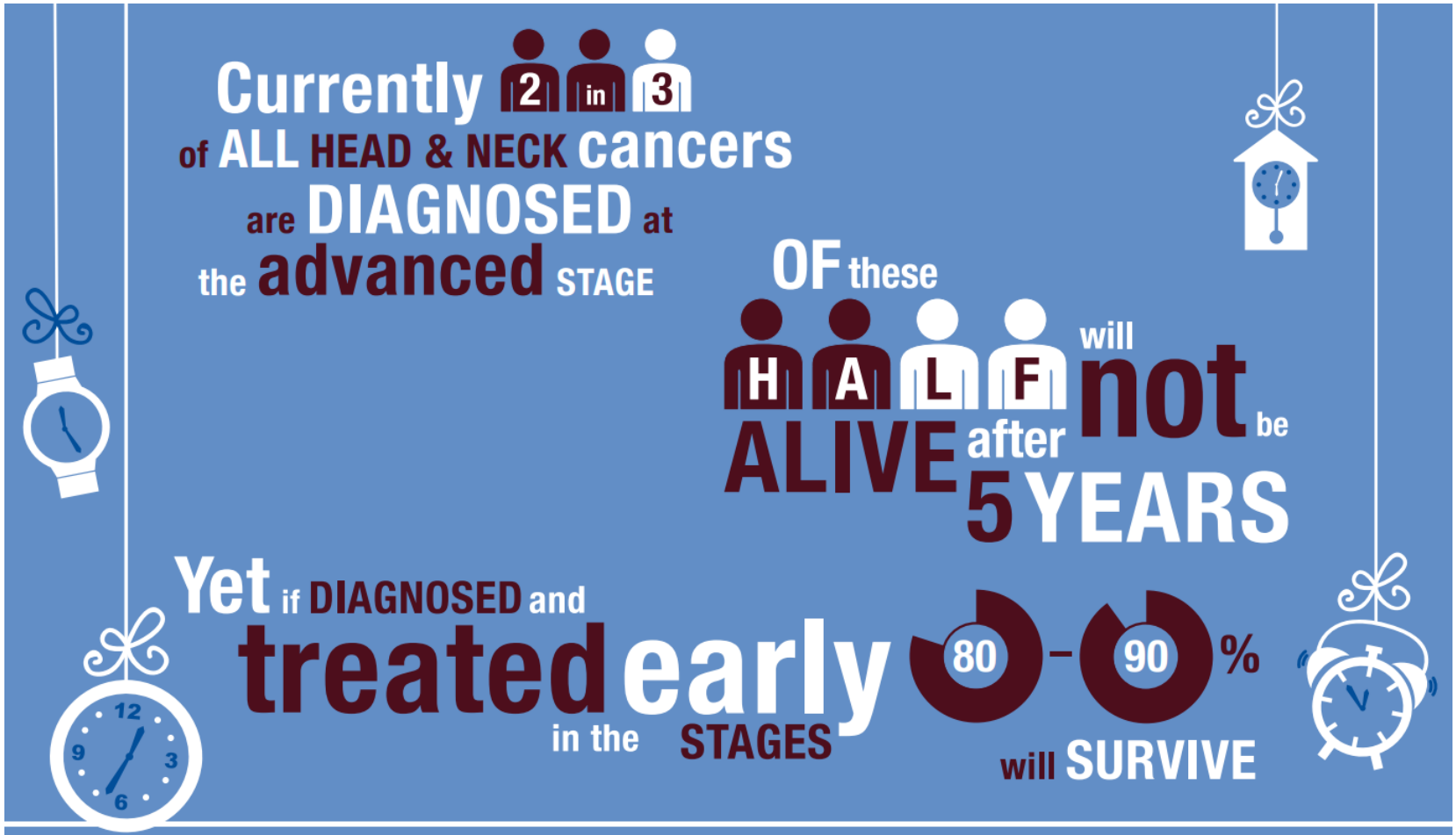
www.makesensecampaign.eu



EARLIER DIAGNOSIS AND REFERRAL CAN IMPROVE PATIENT CHANCES OF SURVIVAL

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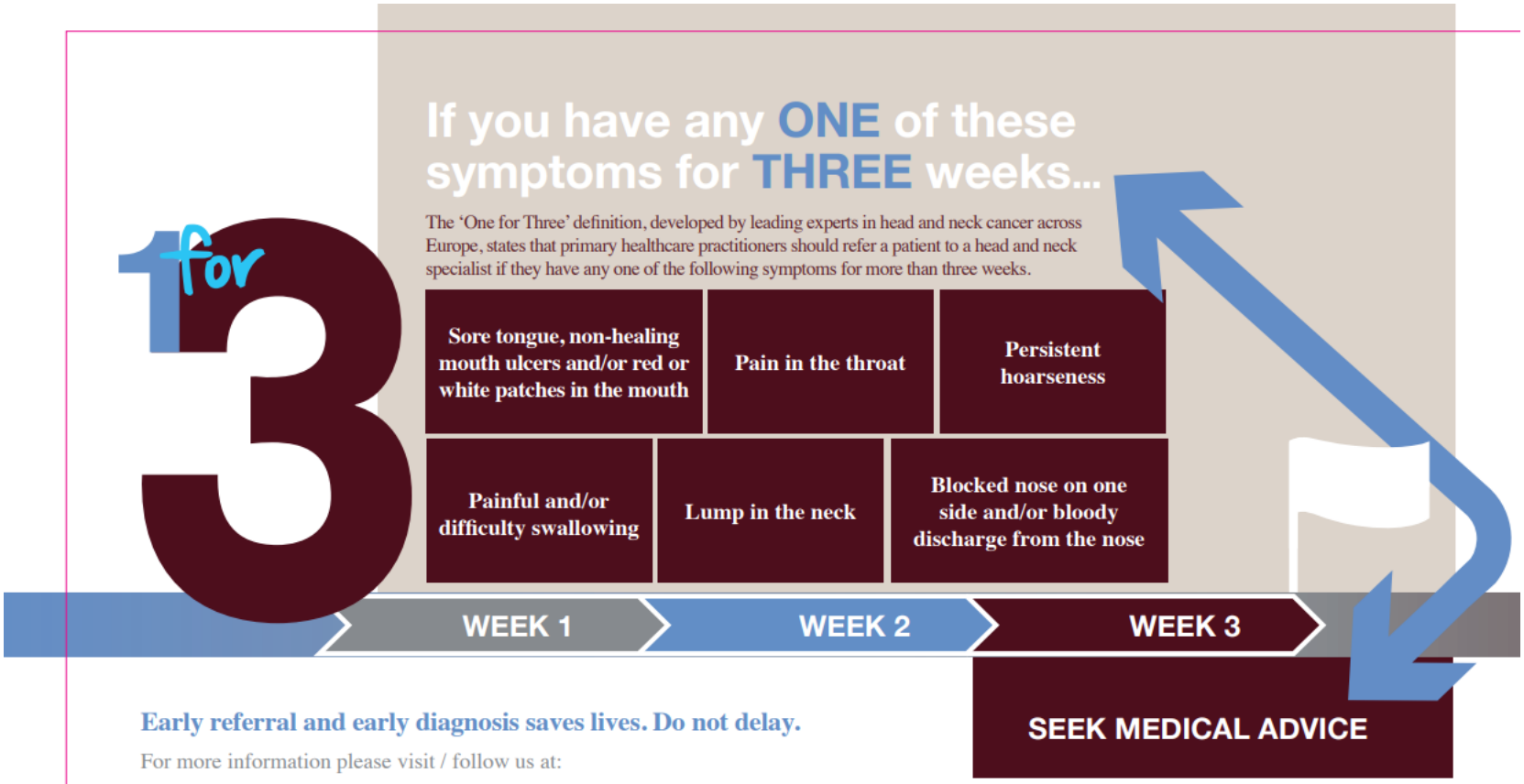
European campaign focused on secondary prevention



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Schema of preventive evaluations, tertiary follow-up

- *Regular clinical evaluations*

  1st year : monthly
  2nd year : every 2 months
  3rd year : every 3-4 months
  further years : every 6- 12 months

- *Additional evaluations:* X-ray examination of lungs/1 year , ultrasound of abdominal cavity/1 year, blood account + screening á 3 month, CT individual. After 3 years the intervals are protracting.

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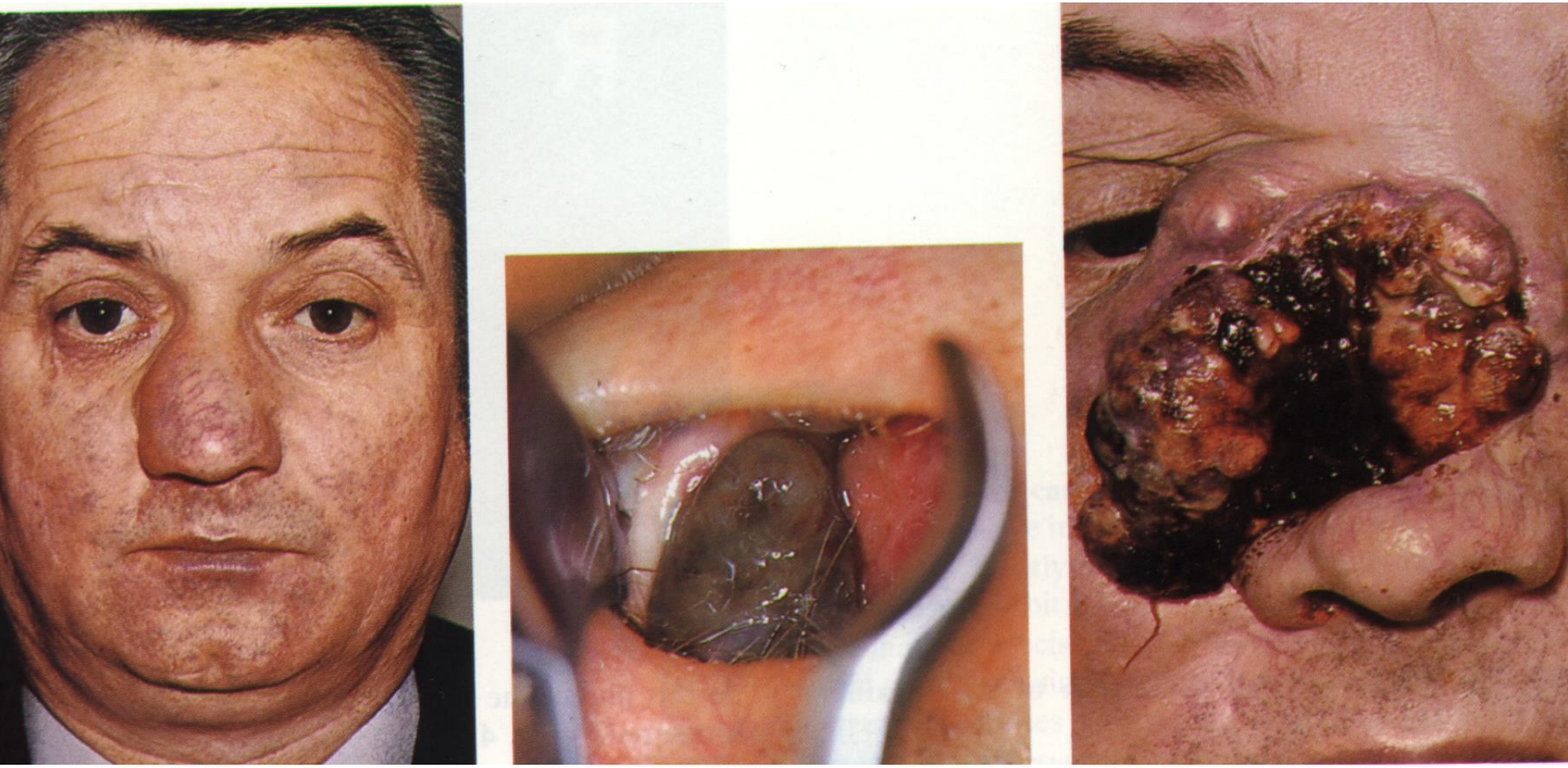
Tumors of nose and paranasal sinuses



Malignant melanoma of the nose

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Carcinoma maxillae (T_4)

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Incidence, Symptoms

- Incidence – less than 1% of all malignant tumors
- Usually 6-12 months without clinical symptoms,
- then unilateral nasal obstruction, small bleeding from the nose, frequently picture of inflammation of maxillary sinus, discharge, foetid secretion.
- In advanced tumors headache, signs of invasion of neighboring tissue – eye, cheek, regionally lymphadenopathy…

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Etiology

Risk factors: hard wood dust, Nickel, isopropyl alcohol, thorotrast, yperit and other

Malignant melanoma of the nose

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Investigation

- Rhino - endoscopy biopsy
- CT/MR of paranasal sinuses
- Investigation for exclusion distant metastasis : X ray of lungs, Ultrasonography of organs of stomach cavity, mamma in women and gynecology, prostate at men, PET.
- stomatology evaluation

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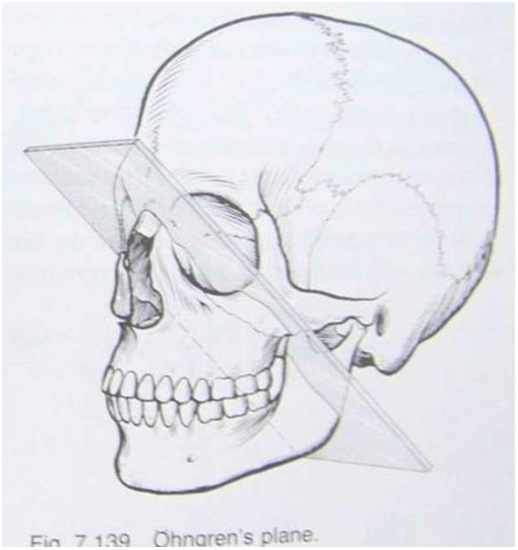
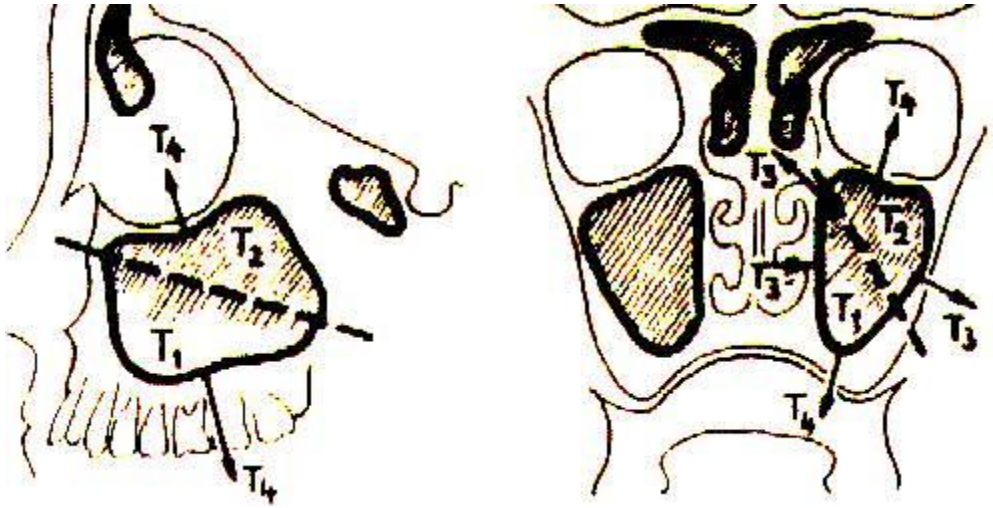
Cancer of nose and paranasal sinuses - TNM classification





Öhngren´s plane (UICC)

T1. Tumour limited to the mucosa with no erosion or destruction of bone

T2. Tumour causing bone erosion or destruction, including extension into hard palate and/or …

T3. Tumour invades any of the following: bone of posterior wall of maxillary sinus, subcutaneous tissues, floor or medial wall of orbit, pterygoid fossa, ethmoid sinuses

T4. Tumour invades any of the following: anterior orbital contents, skin of cheek, pterygoid plates, infratemporal fossa, cribriform plate, sphenoid or frontal sinuses orbital apex, dura, brain, middle cranial fossa, cranial nerves other than maxillary division of trigeminal nerve V2, nasopharynx. clivus

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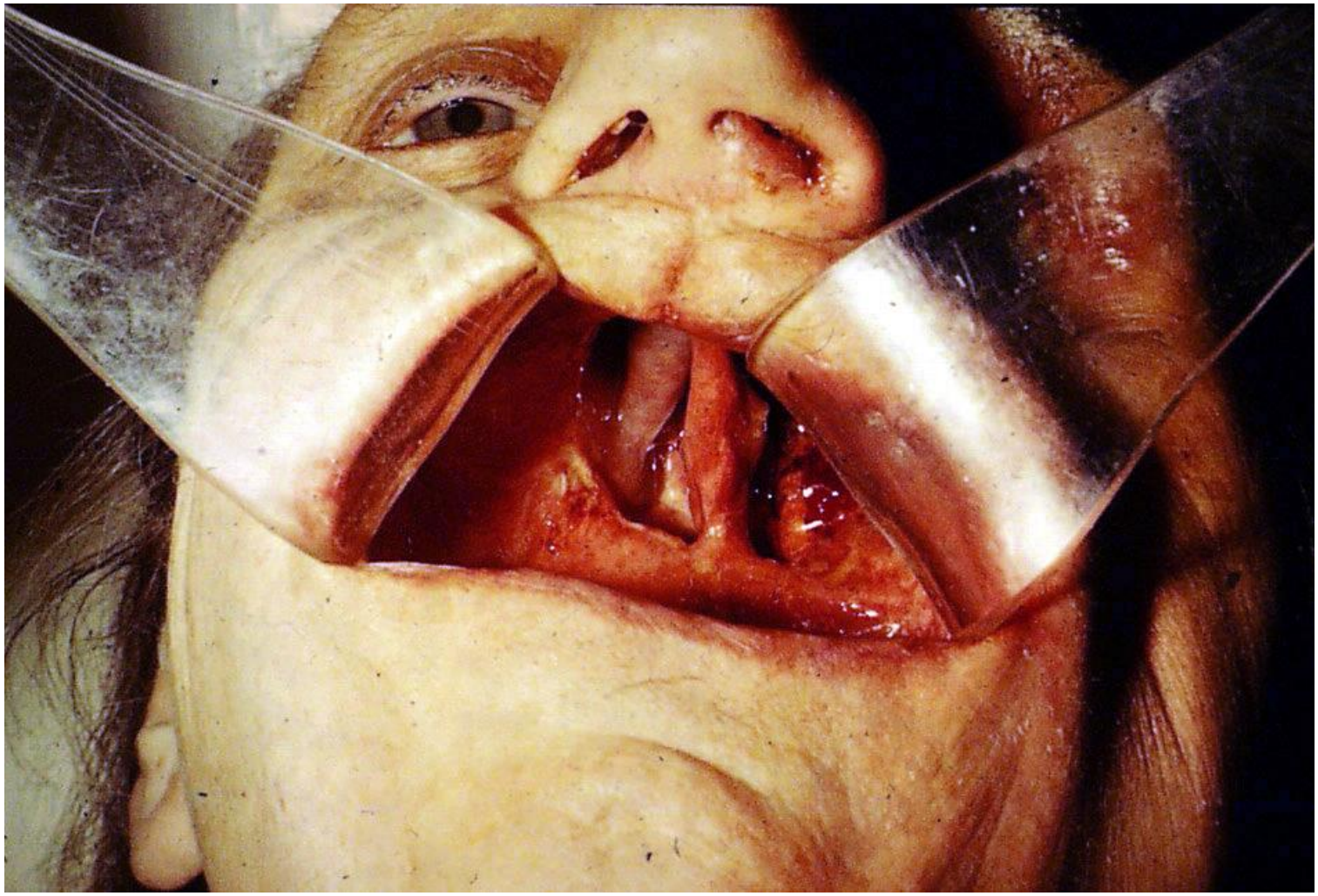
Cancer of hard palate



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Therapy

Surgical treatment is preferred.

St. I, II – surgery (no risk factors present)

St. III,IV – surgery + radiotherapy (+- adjuvant chemotherapy).

+ surgery for locoregional lymphnodes – only in their CT or MR positivity

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Surgical approaches

- ***Transfacial*** *Lateral rhinotomy with various modifications* enabling approach to both partial and total maxillectomies. (*Weber-Ferguson)*
- ***Endoscopic*** – benign tumors, inverted papilloma, carcinomas – CAS (computer assisted surgery)
- ***Sublabial rhinotomy*** *(„midfacial degloving“)* small tumors of anterior wall of maxillae
- ***Combined craniofacial*** – intracranial spread of tumor + neurosurgery bicoronar section

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Surgical therapy – external approach

- Maxillary sinus – parcial or total maxilectomy.
- Ethmoid sinus - external ethmoidectomy sec. „Moure“
- Frontal sinus classical rhinosurgery - Jansen- Ritter, Riedel, Killian.
- Sphenoid sinus - sphenoidectomy via sublabialis, transseptalis.

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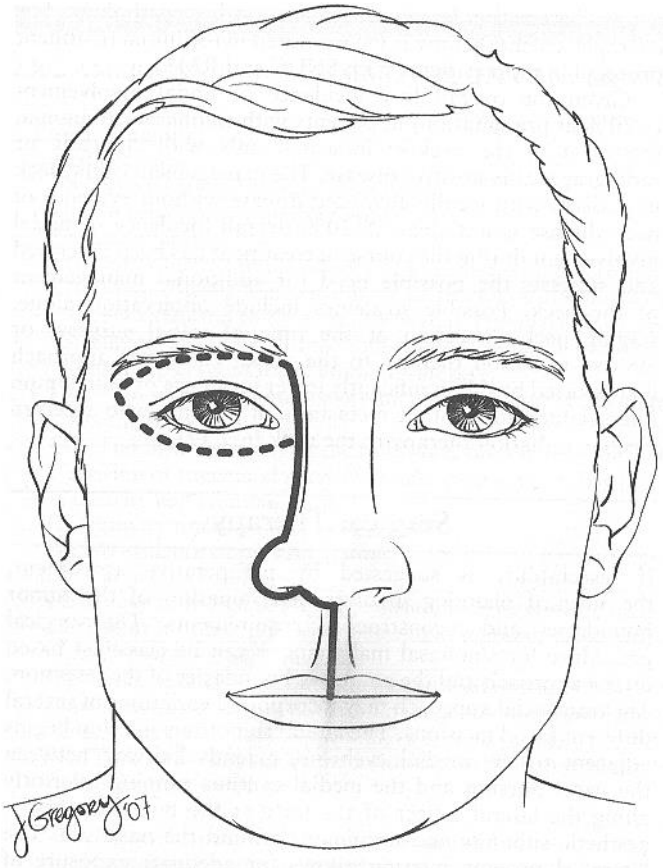
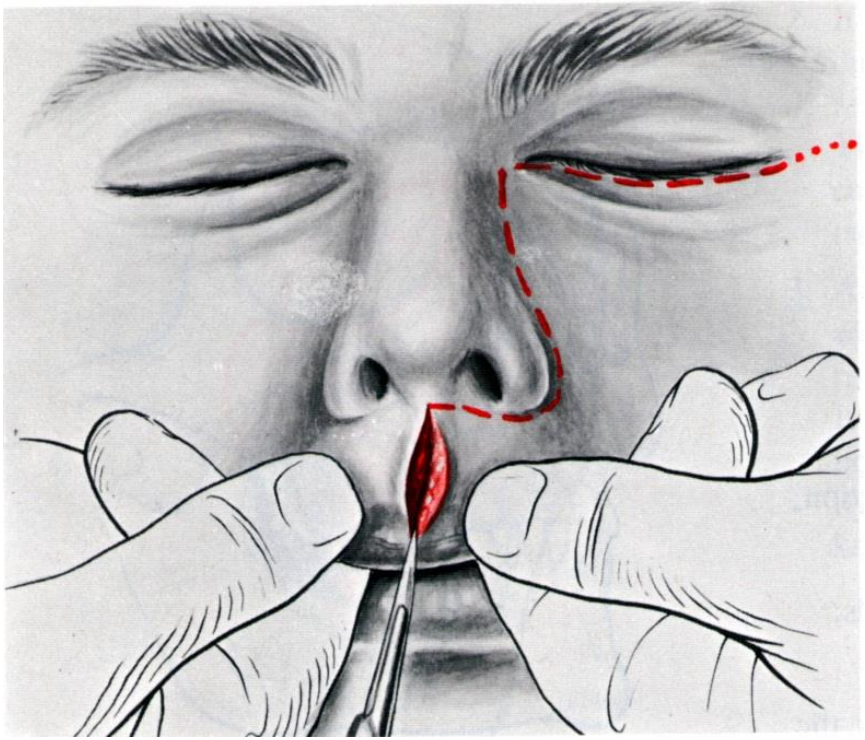
Lateral rhinotomy Weber-Ferguson





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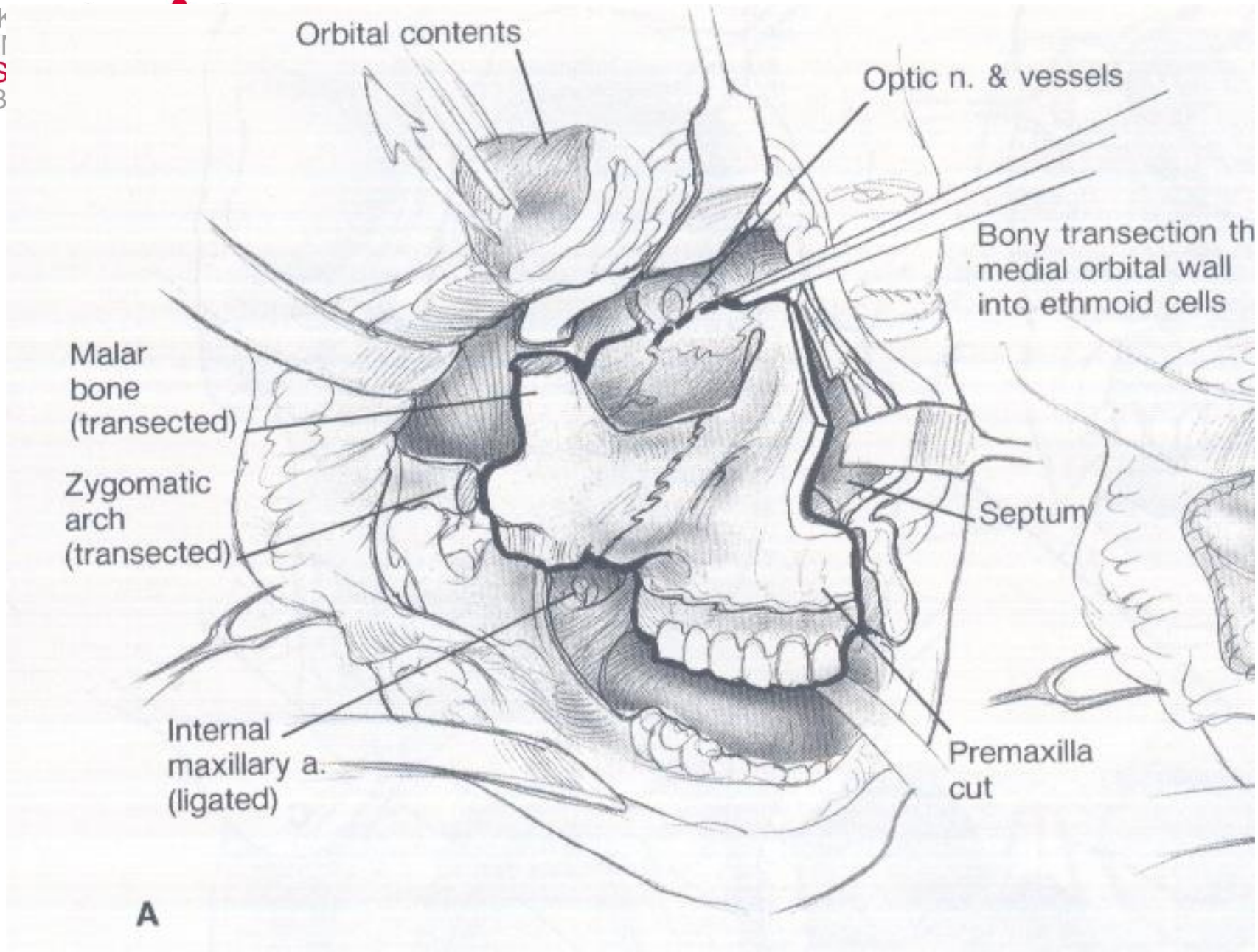
Maxillectomy according to Memorial Sloan Kettering Cancer Center (Spiro 1997)

- „limited“ maxillectomy – every maxilectomy with removal only one wall of antrum Highmori
- „subtotal“ maxillectomy – removal of at least two walls of antrum Highmori
- „total“maxillectomy – all maxilla is removed


Orbital contents
Optic n. & vessels
Bony transection th
medial orbital wall
into ethmoid cells
Malar
bone
(transected)
Zygomatic
arch
(transected)
Septum
Internal
maxillary a.
(ligated)
Premaxilla
cut
A

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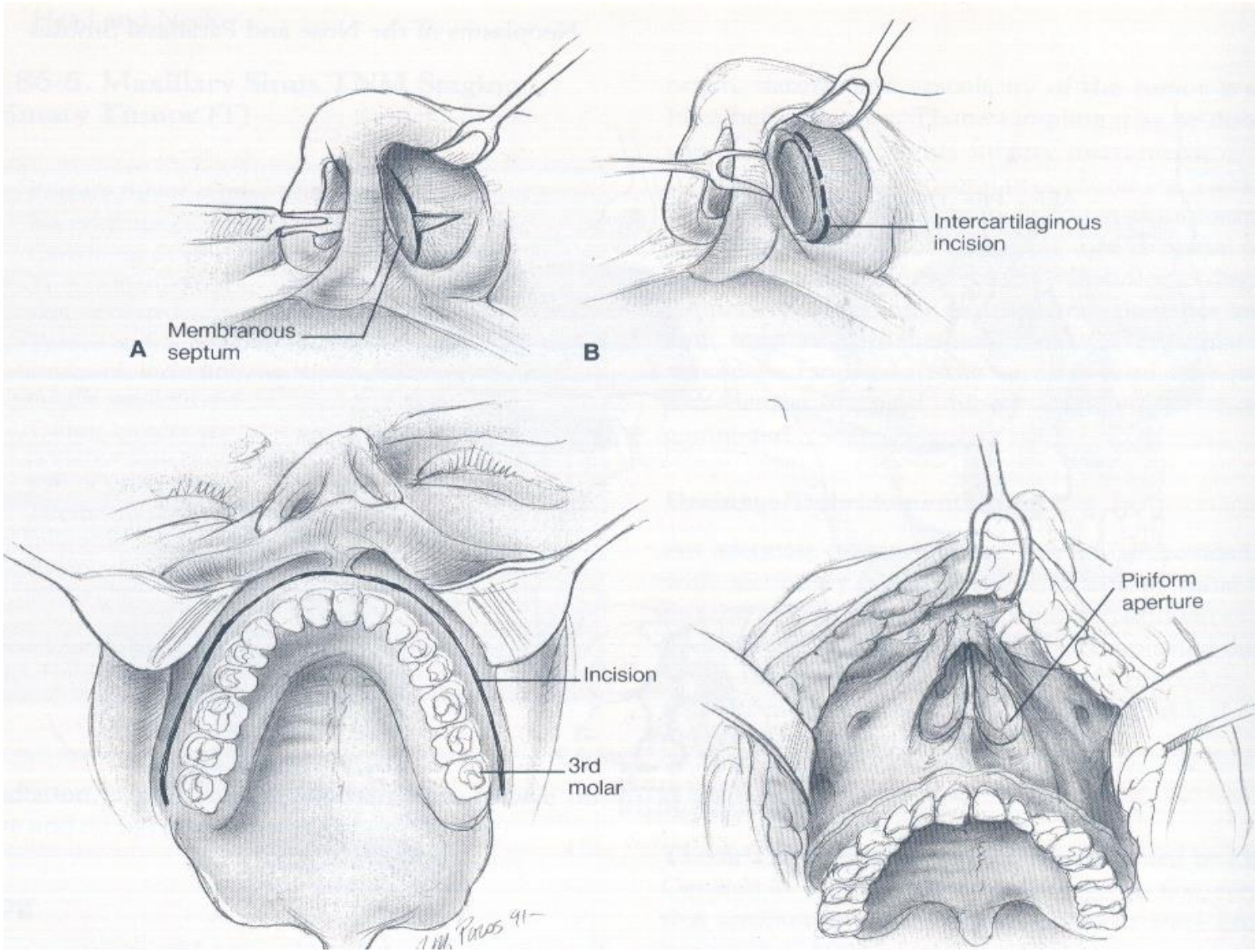
Midfacial degloving



NCCN Guidelines Version 1.2012
Maxillary Sinus Tumors

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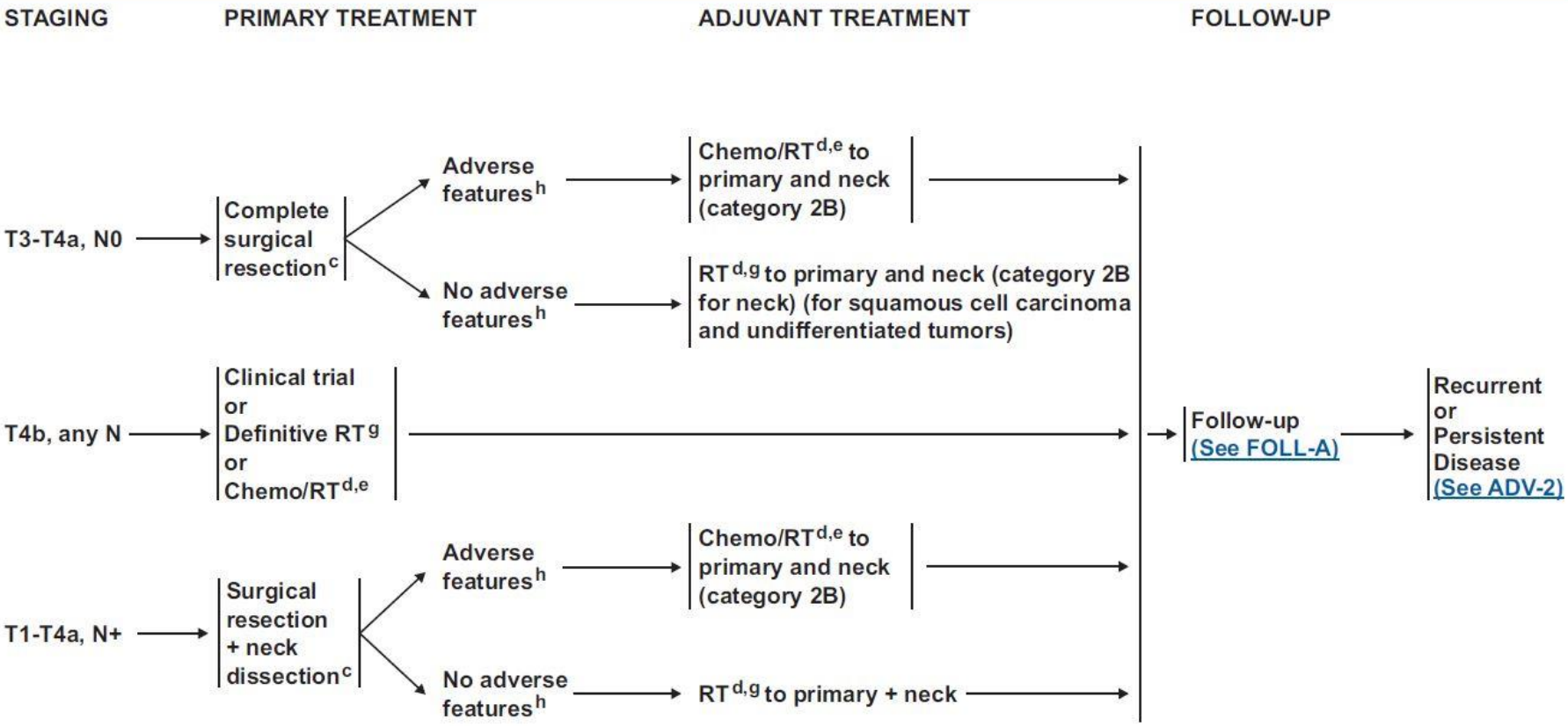

[c] See Principles of Surgery (SURG-A).
[d] See Principles of Radiation Therapy (MAXI-A).
[e] See Principles of Systemic Therapy (CHEM-A).
[g] For adenoid cystic tumors and minor salivary gland tumors, see (SALI-A).
[h] Adverse features include positive margins or extracapsular nodal spread (See Discussion).

Note: All recommendations are category 2A unless otherwise indicated.
Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

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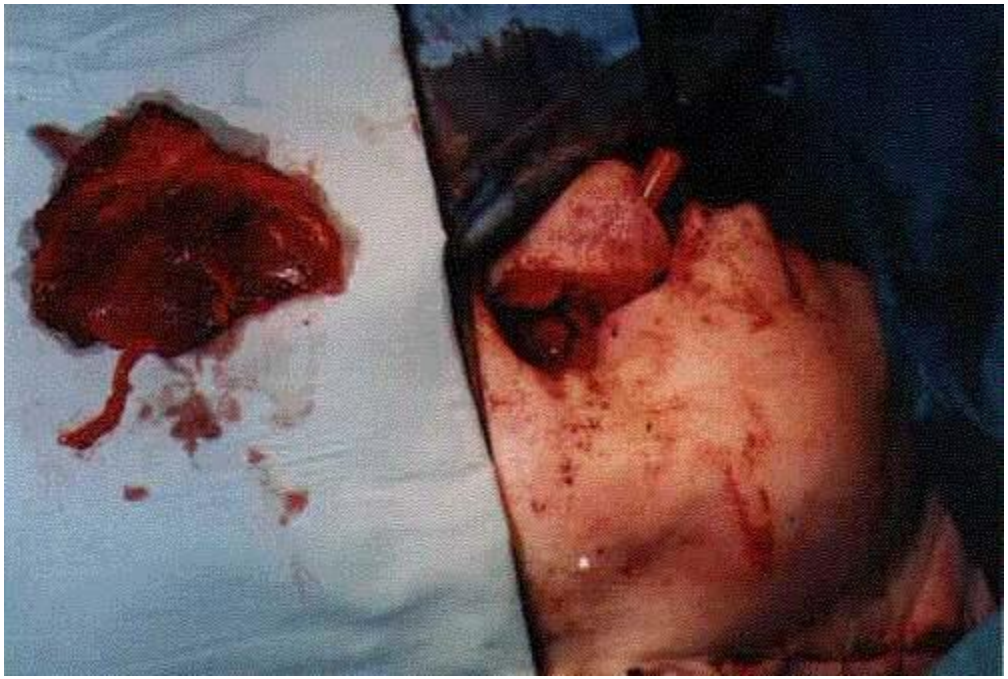
Cancer of maxillary sinus



- Very late diagnosis
- Treatment worsening quality of life

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Surgery of cancer of paranasal sinuses

Multidisciplinar approach

(otorhinolaryngology, plastic surgeon, neurosurgeon, stomatosurgeon)

- Phase of resection
- Phase of reconstruction

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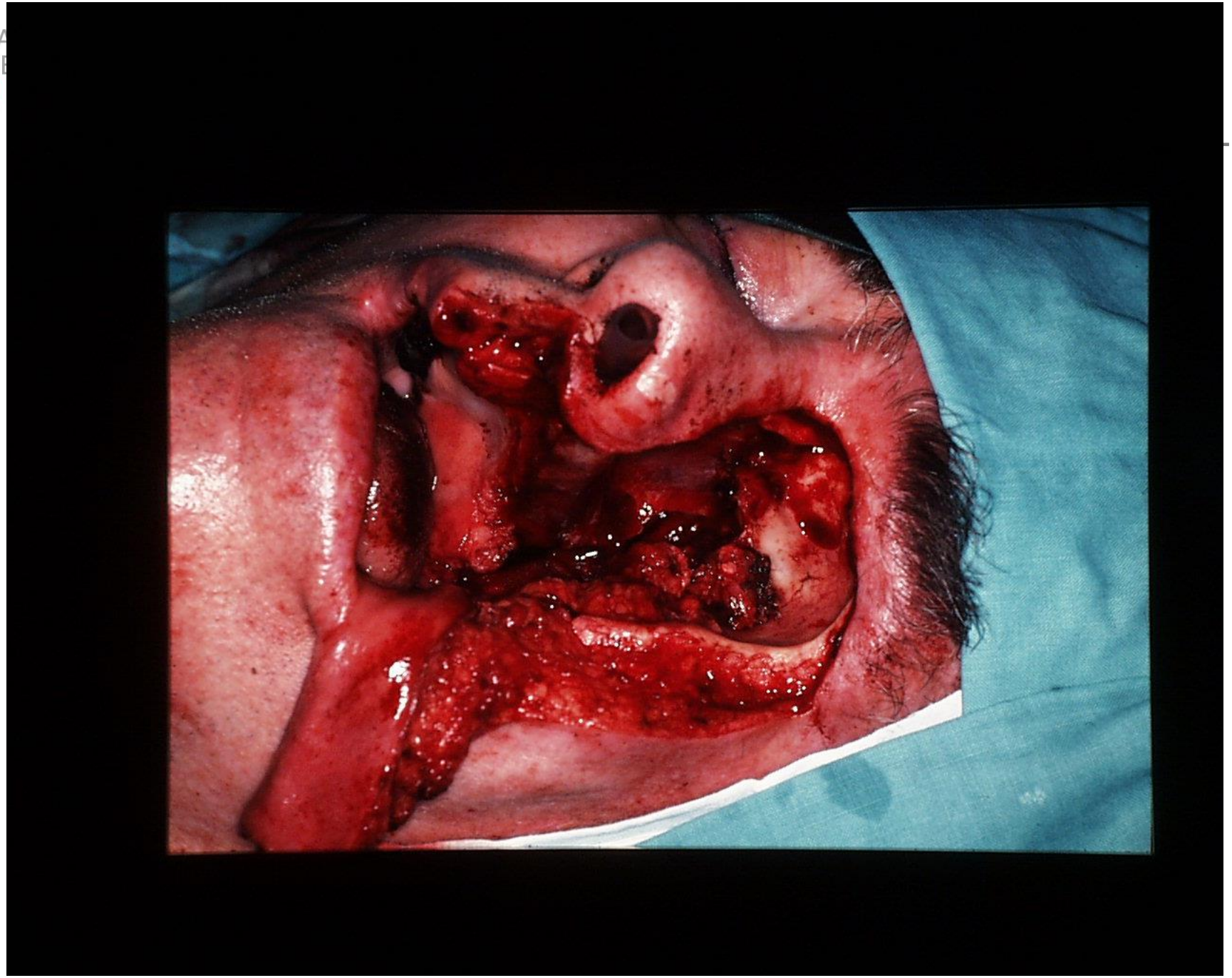
Phase of resection

- Resection of primary tumor

  T1, T2 – limited or partial maxillectomy

  T3, T4 - total maxillectomy, extended total maxillectomy, exenteration of orbitae

- Revision of parapharyngeal space (N_0), neck dissection (N>0)



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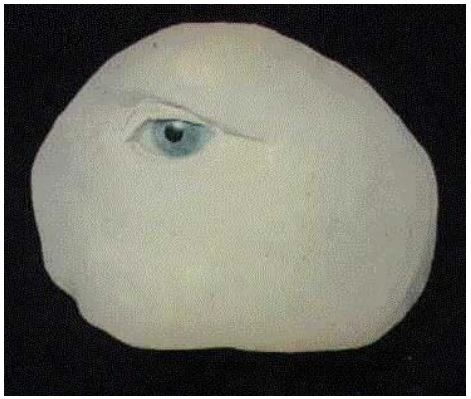
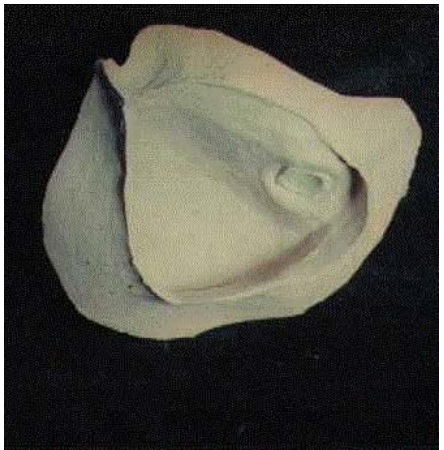
Phase of reconstruction

- Microsurgical flaps
  (in one surgery)

- prosthetic solution
  - obturatos and epithesis
  - tooth prosthesis
  - eye prosthesis





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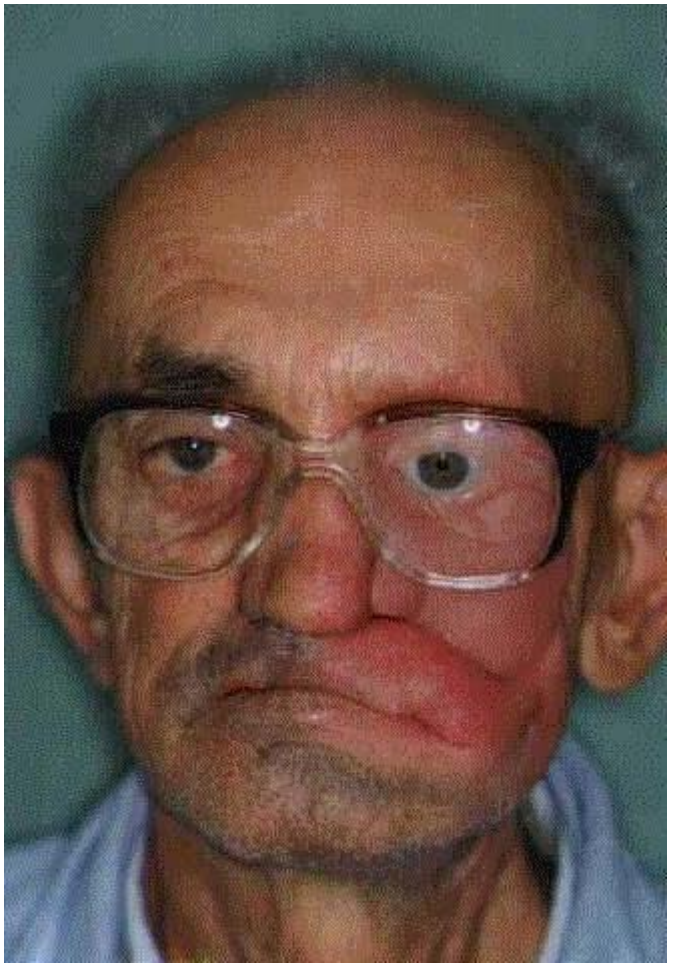
Prosthesis after surgery – covering defect



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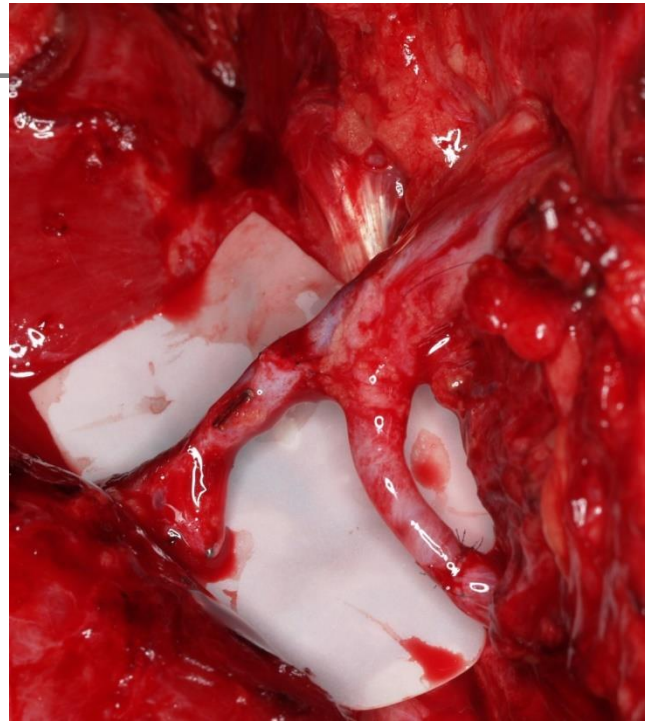
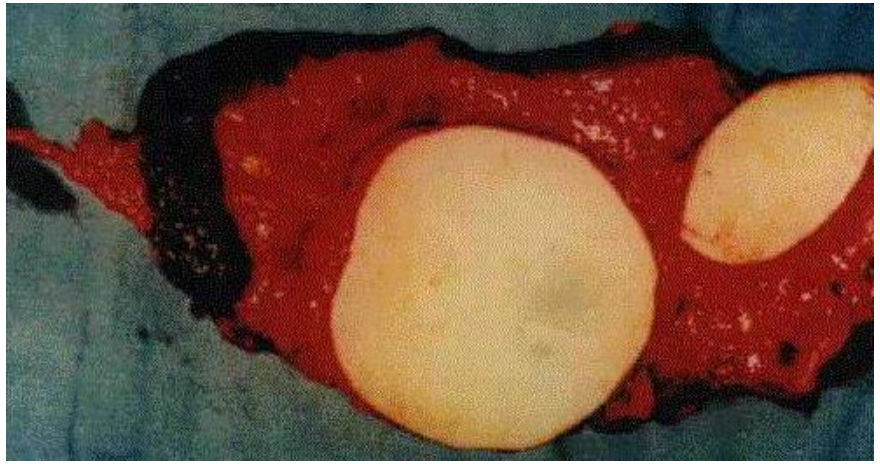
Closing the defect - vessel microsurgery



- m. latissimus dorsi, m. serratus ant. - Muscle – skin flap
- China flap - Skin + subcutaneous flap
- Bone-muscle- flap



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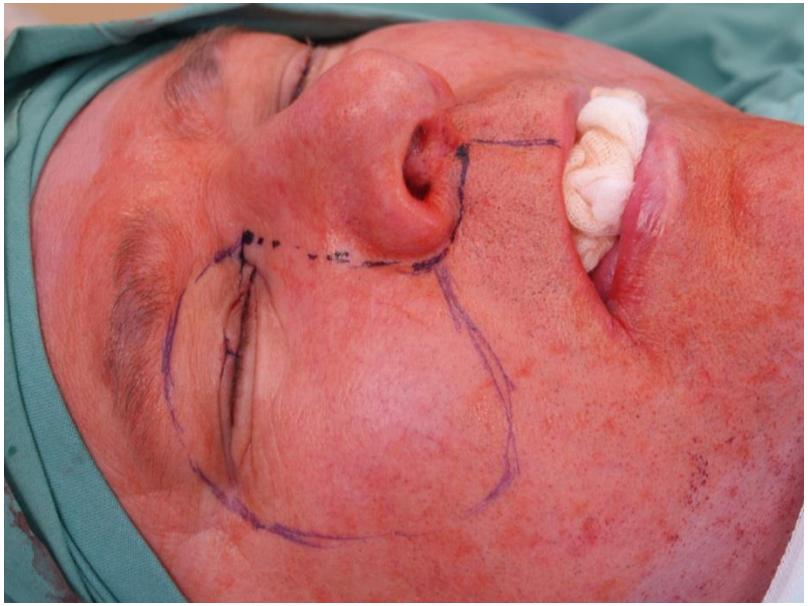
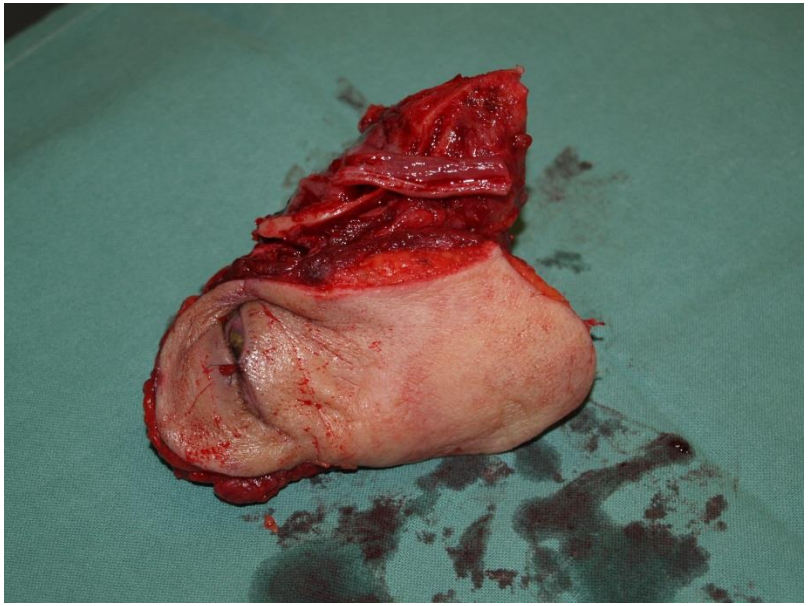
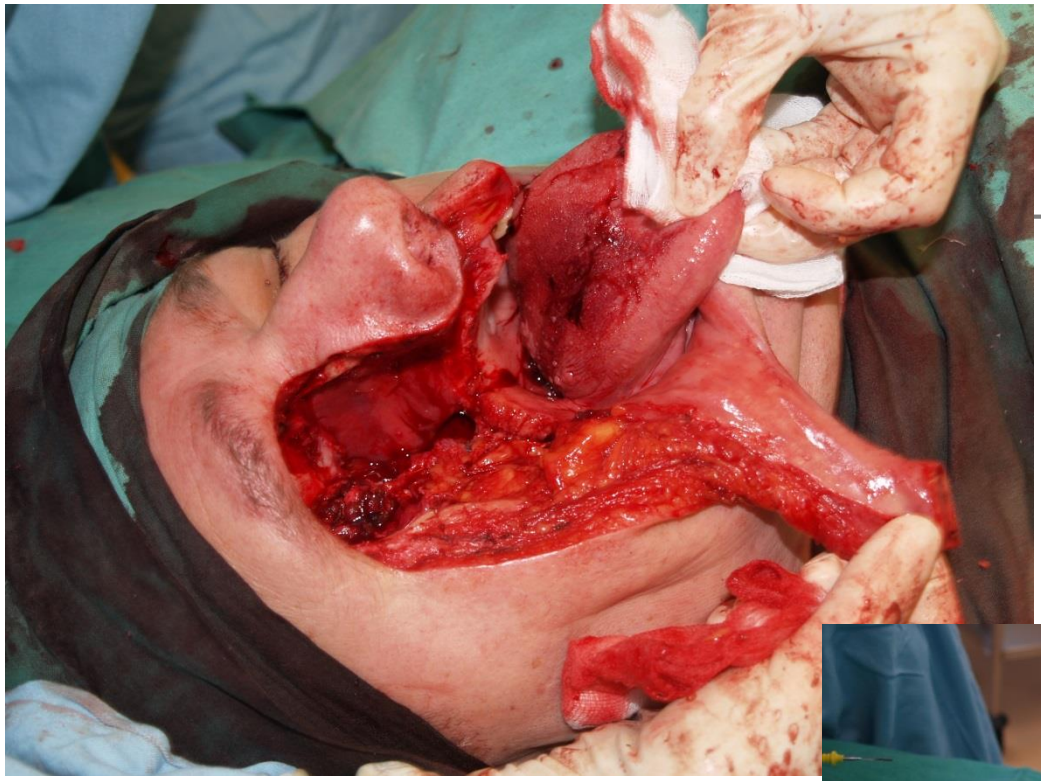
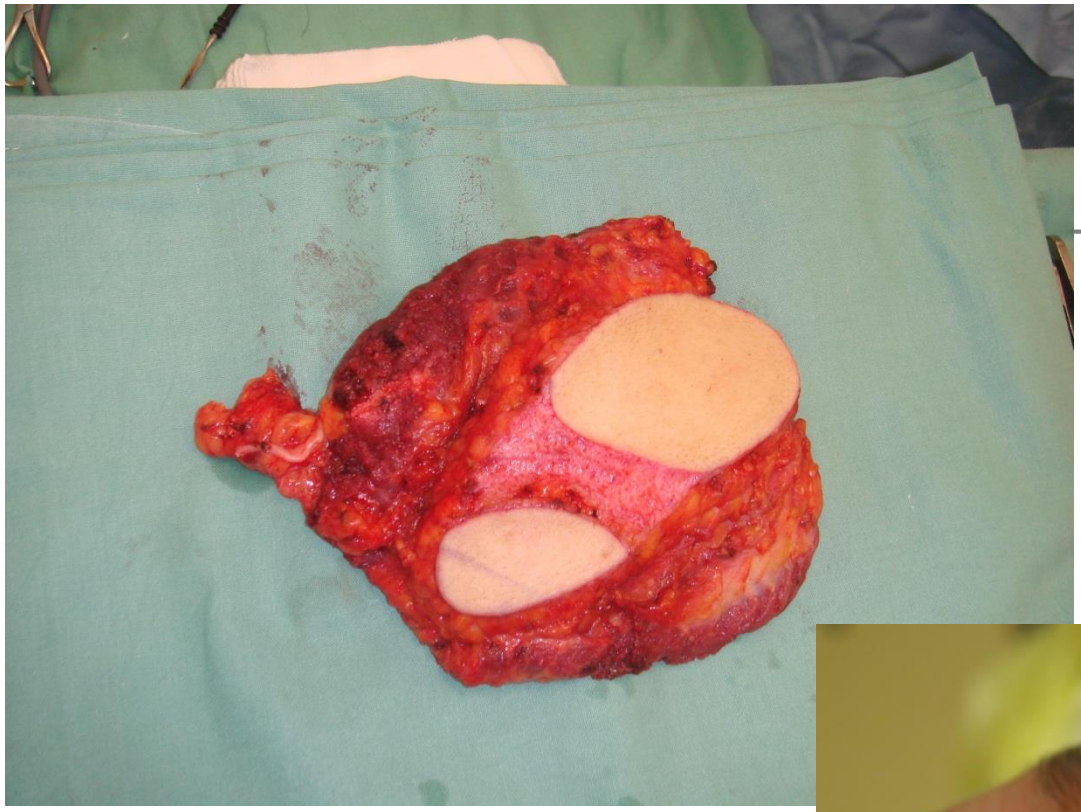
Ca spinocellulare maxillae l.dx. cT4

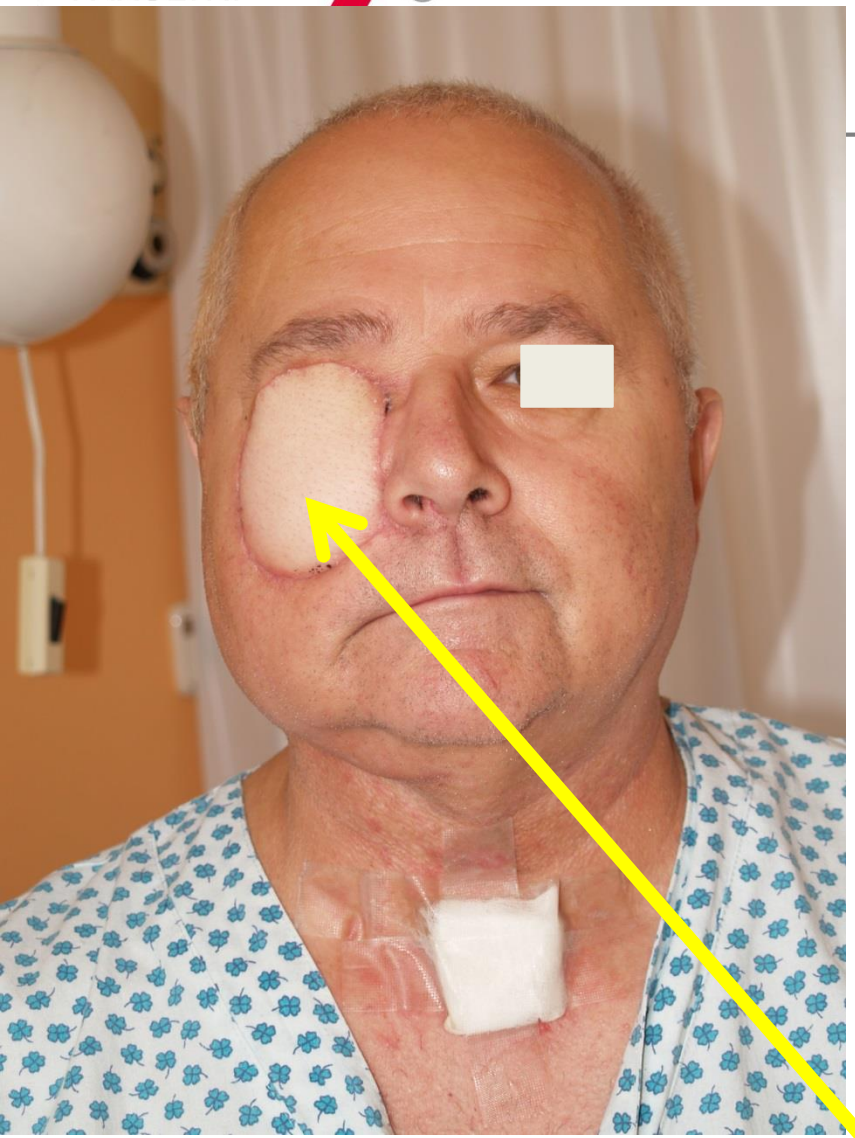




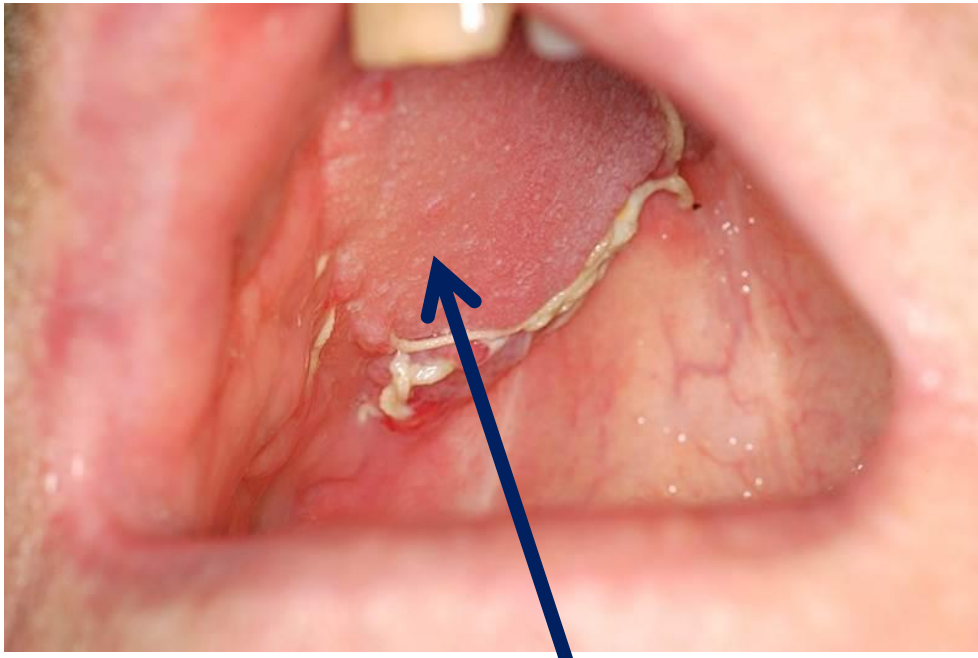




Month after surgery



Skin used for reconstruction of the orbit



Skin used for palate reconstruction

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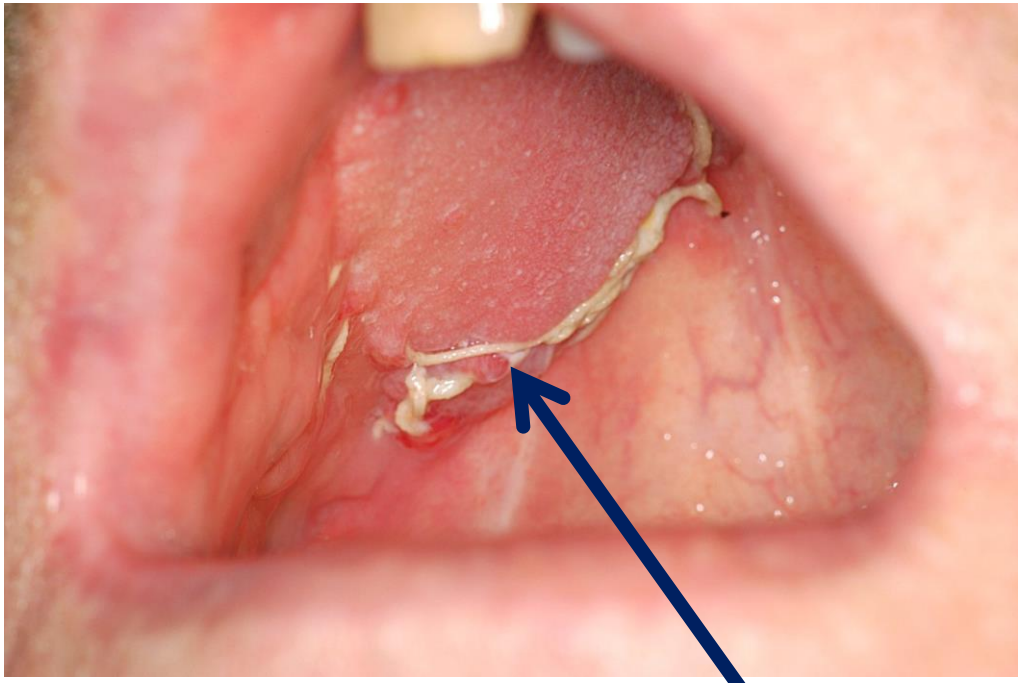
Měsíc po operaci

Kůže použitá pro rekonstrukci orbity



Kůže použitá pro rekonstrukci patra

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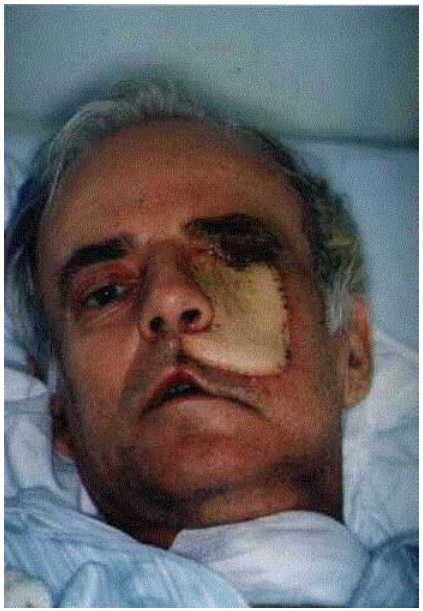
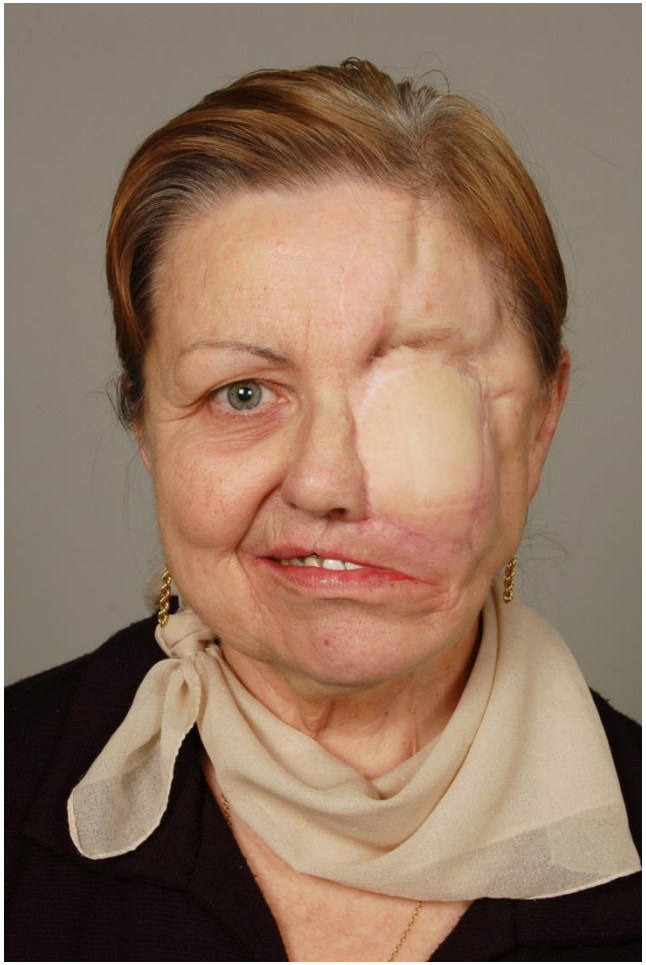
Reconstruction in one step

+ Enabling sufficient radicality
+ Shorter healing after surgery
+ better cosmetic effect
- difficult possibility of detecting recurrences in operating cavity





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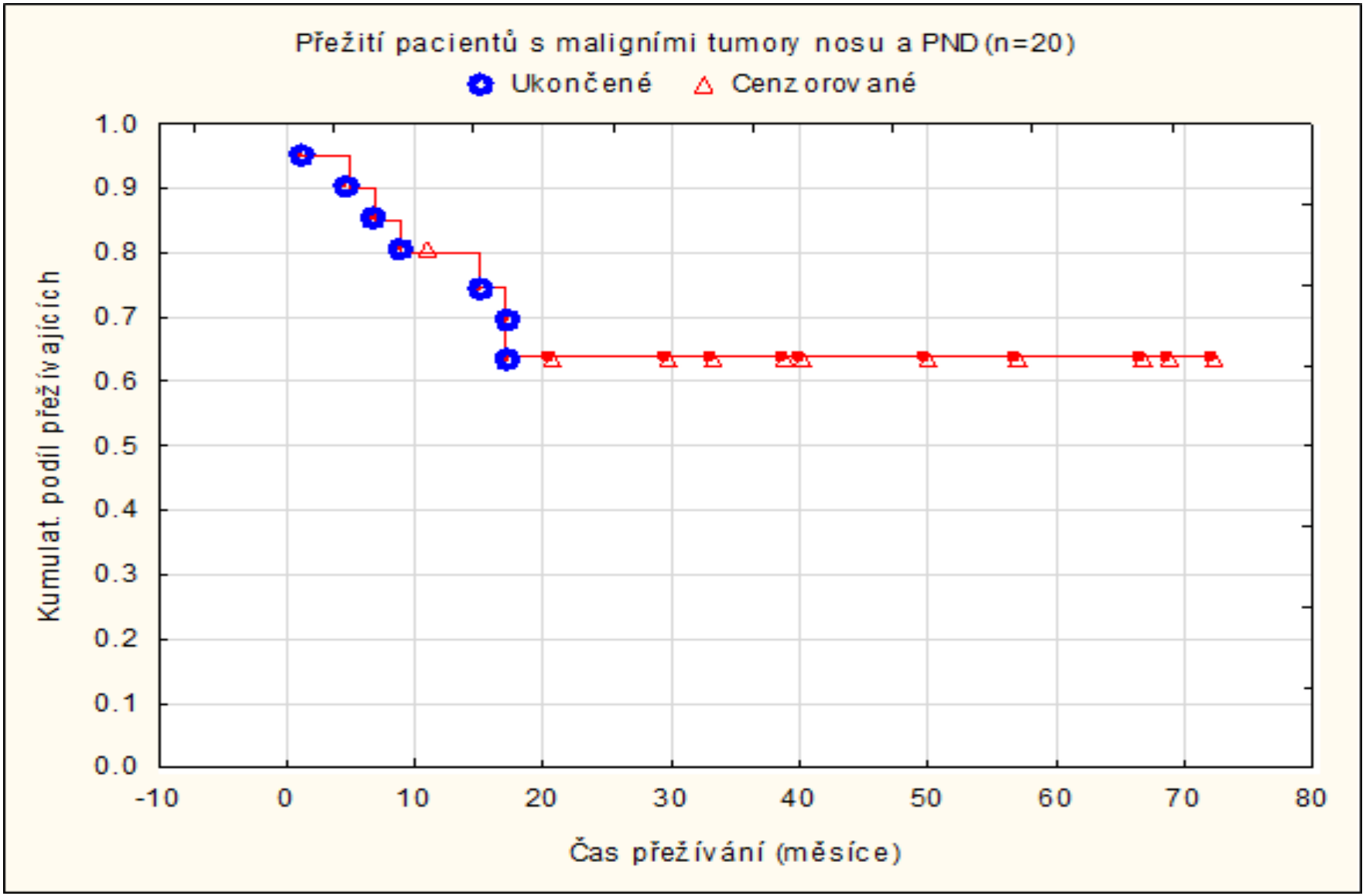
Survival of patients with malignant tumors of nose and paranasal sinuses



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60. year old patient JV

- Nasal polyposis for years
- 9/2009 oedema of right eye, blocked nose, without diplopia
- Tumor adhering to dura mater
- Histology: not differentiated carcinoma karcinom. pT4b N0M0

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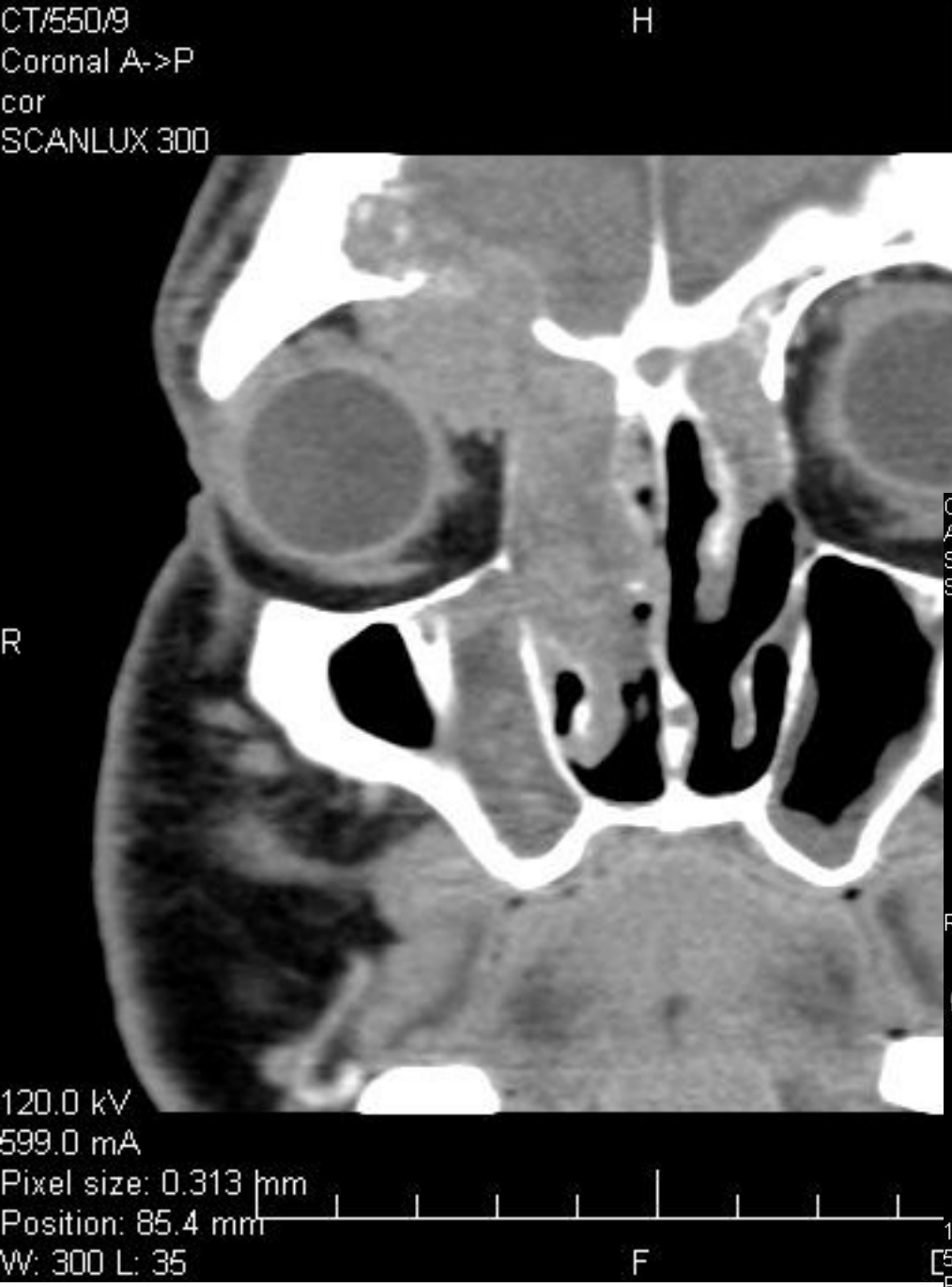
CT/550/9
Coronal A->P
cor
SCANLUX 300
H
1949/2/18
60Y M
6817/09
2009/9/14
11:32:09
R
120.0 kV
599.0 mA
Pixel size: 0.313 mm
Position: 85.4 mm
W: 300 L: 35
F


CT/5/50
Axial F->H
SOFT
SCANLUX 300
A
1949/2/18
60Y M
4284-6817/09
2009/9/14
11:32:09
R
L
120.0 kV
599.0 mA
Pixel size: 0.367 mm
Position: 48.6 mm
W: 400 L: 40
P
DFOV: 18.80 x 18.80cm

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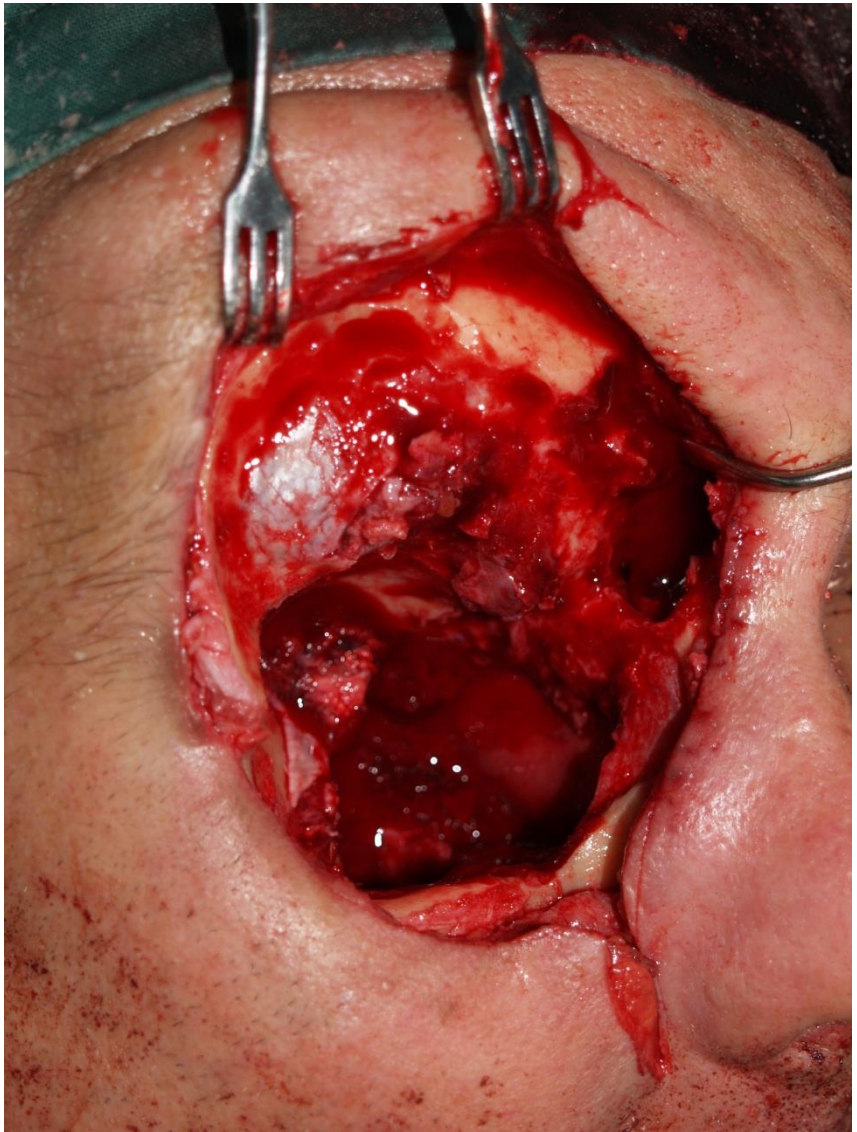
14.10.2009 Exenteratio orbitae l.dx, resectio maxillae partialis l.dx, resectio baseos fossae cranii anterior, ethmoidectomia l. utr., transplantatio durae matris fossae cranii ant. l.dx., recontructio defectus plastica cum musculus latissimus dorsi



Neurosurgery – resetion of dura mater, replaced by synthetic dura


Defect closed with musculocutaneus flap
from m. latissimus dorsi microsurgical
anastomosis on v.a a. facialis

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Overall survival – 8 year, good QOL

- 2009 – Adjuvant CHRT
- Fololow up by NMR/ CT
- 11/2012 swelling of head on contralateral side - sinusitis frontalis a etmoidalis with periorbital swelling
- Histology middle turbinate: Chronic inflammatory changesd, withou tumor
- Exitus letalis - 11.4.2017 low diff. ductal adenocarcinoma of head of **pancreas**

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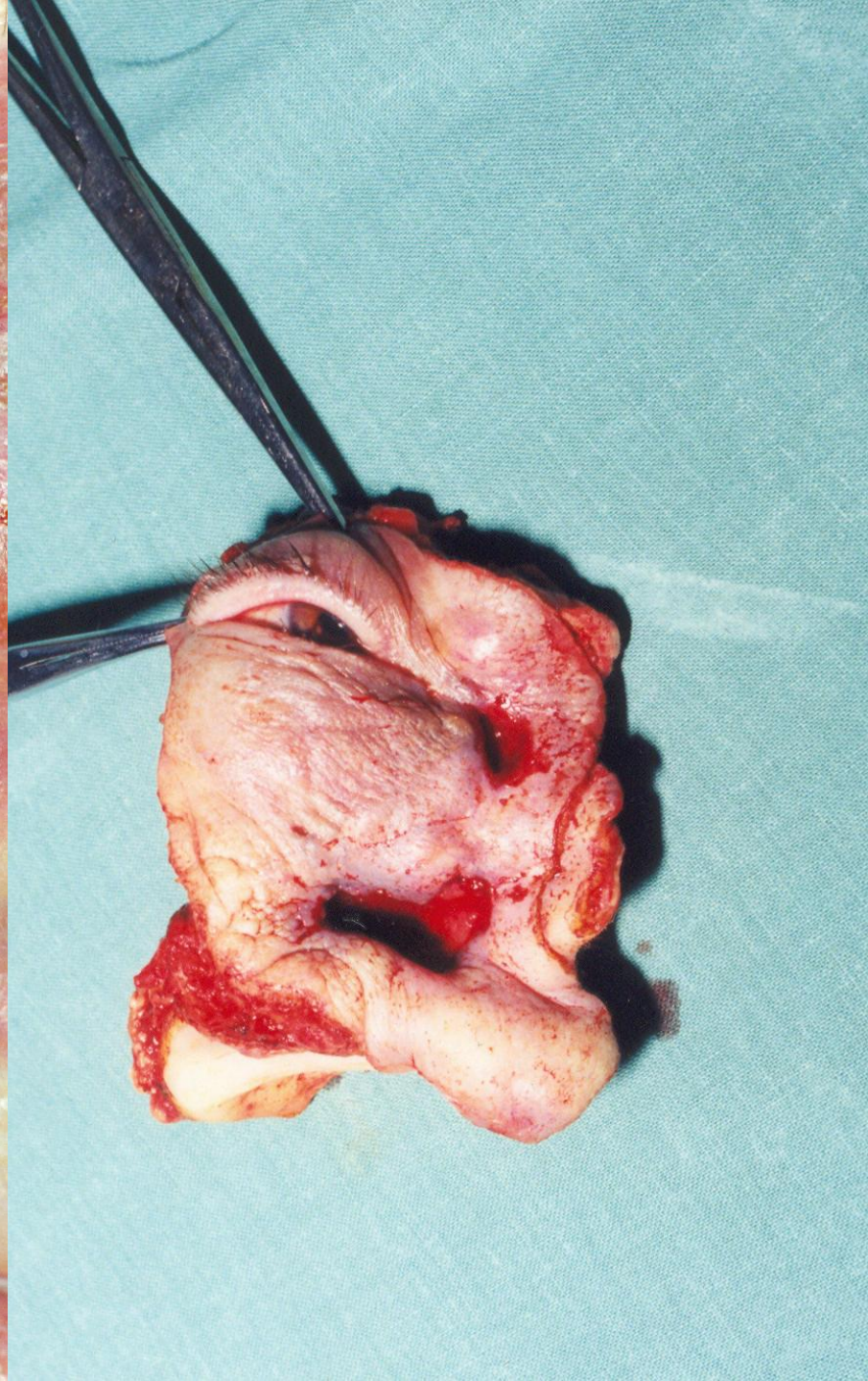
Carcinoma maxillae (T_4)



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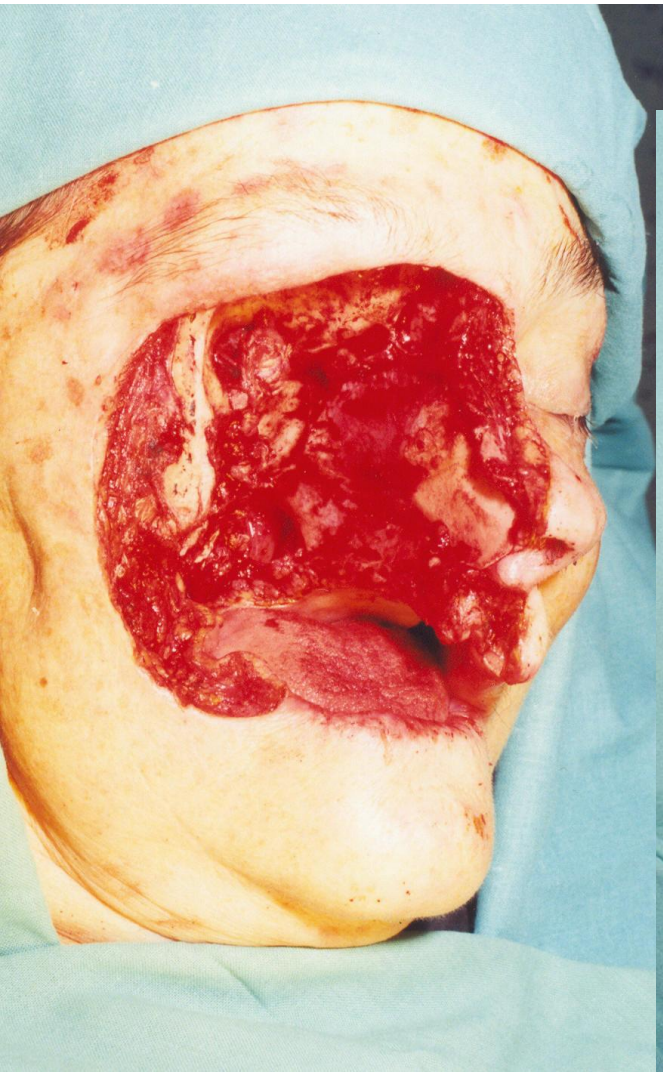
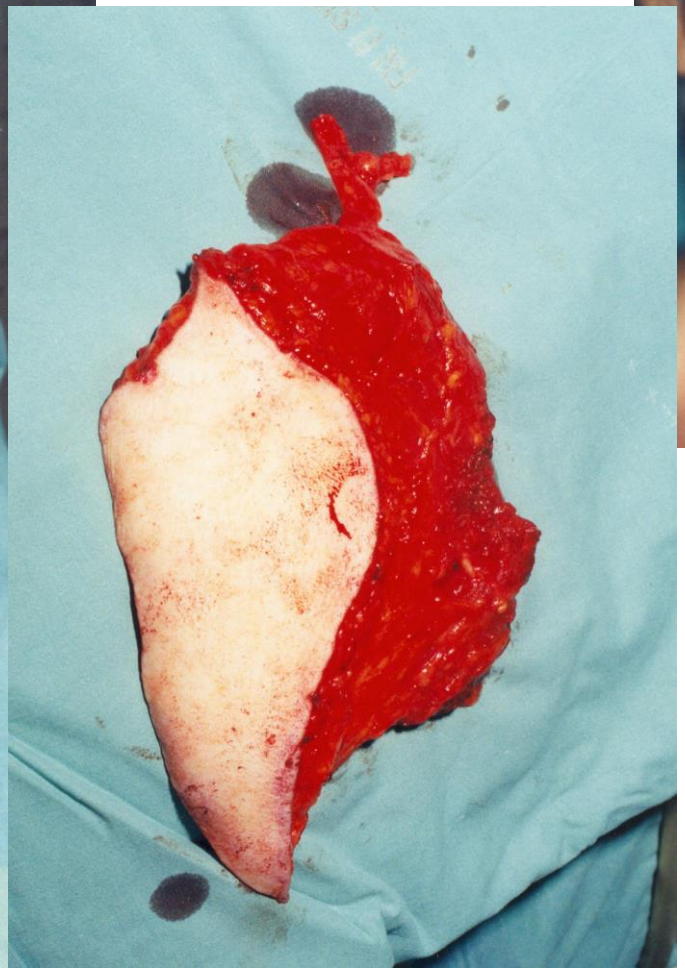
Ca spino maxillae
pT4 N0 M0





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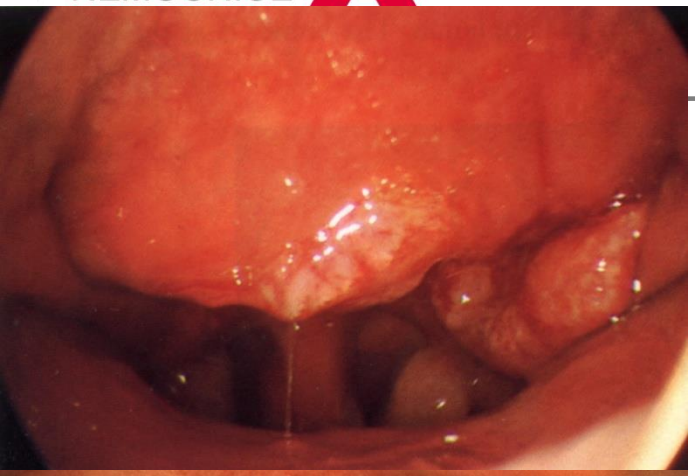
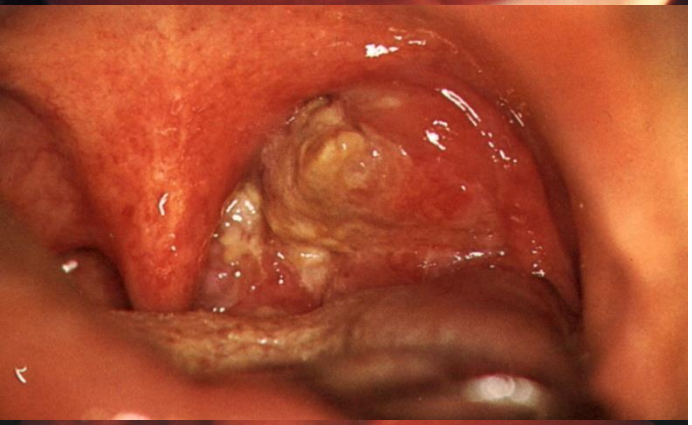
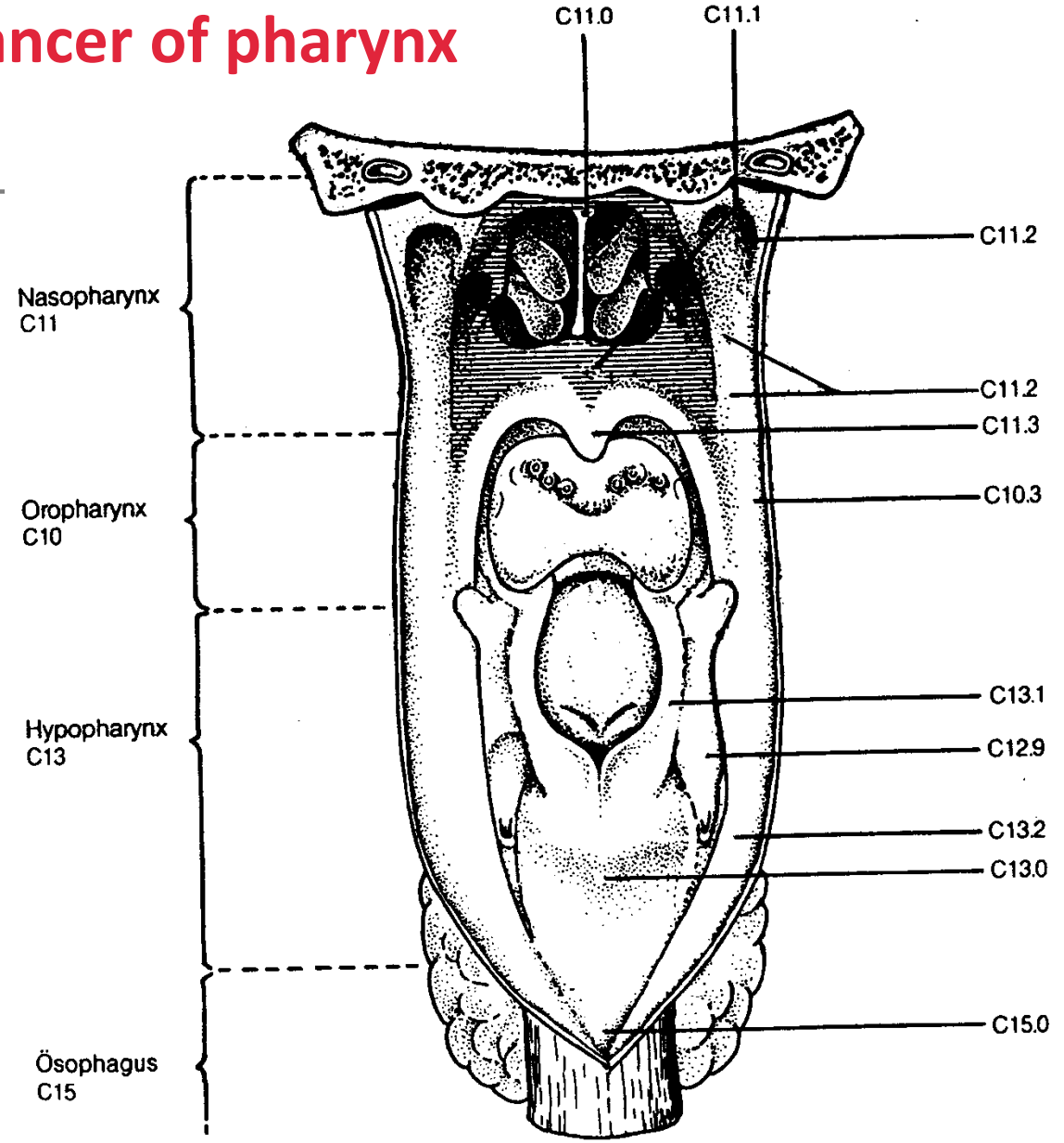
Cancer of pharynx







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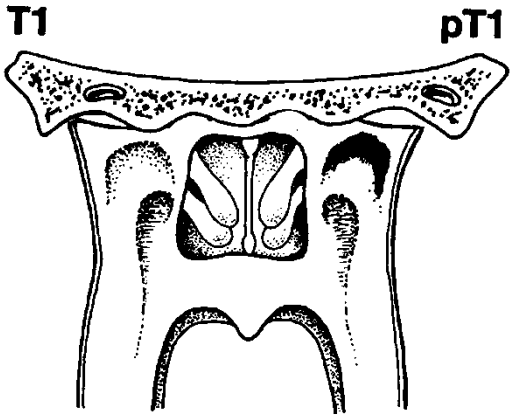
Cancer of epipharynx (C 11) - TNM classification

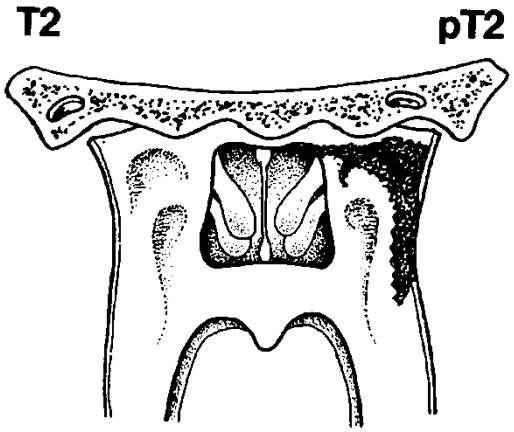
T1. Tumour confined to nasopharynx

T2. Tumour extends to soft tissues

T2a. Tumour extends to oropharynx and/or nasal cavity without parapharyngeal extension*

T2b. Tumour with parapharyngeal extension*



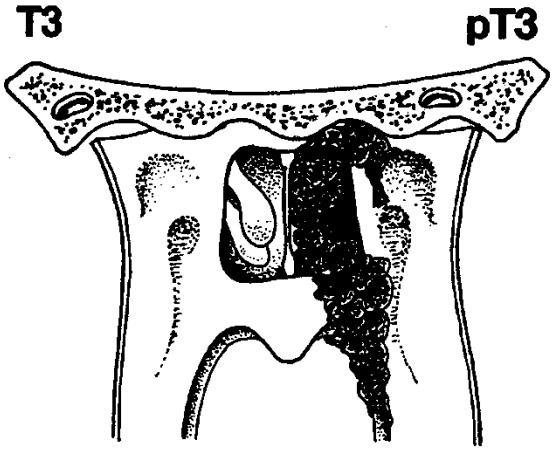


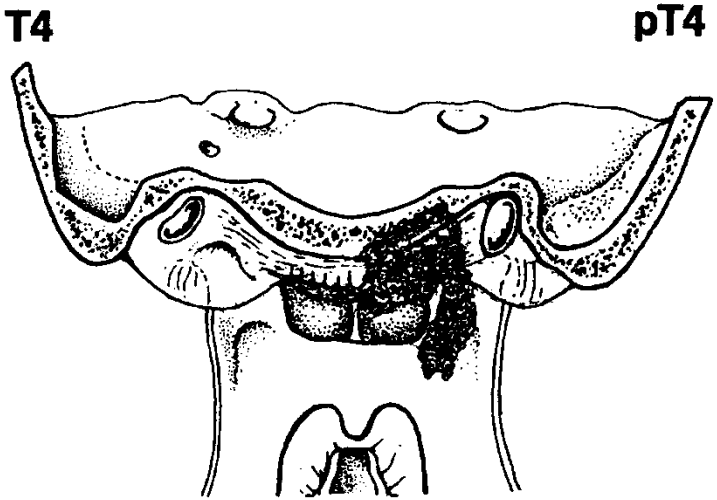
FAKULTNÍ NEMOCNICE U SV. ANNY V BRNĚ

Cancer of epipharynx (C 11) - TNM classification

T3 Tumour invades bony structures and/or paranasal sinuses

T4 Tumour with intracranial extension and/or involvement of cranial nerves, infratemporal fossa, hypopharynx, orbit, or masticator space





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N – Regional lymph node (nasopharynx)

NX Regional lymph nodes cannot be assessed

N0 regional lymph node metastasis

N1 Unilateral metastasis, in lymph node(s), 6 cm or less in greatest dimension, above the supraclavicular fossa

N2 Bilateral metastasis in lymph node(s), 6 cm or less in greatest dimension, above the supraclavicular fossa

N3 Metastasis in lymph node(s) greater than 6 cm in dimension or in the supraclavicular fossa

- N3a. greater than 6 cm in dimension
- N3b. in the supraclavicular fossa

Note: Midline nodes are considered ipsilateral nodes.

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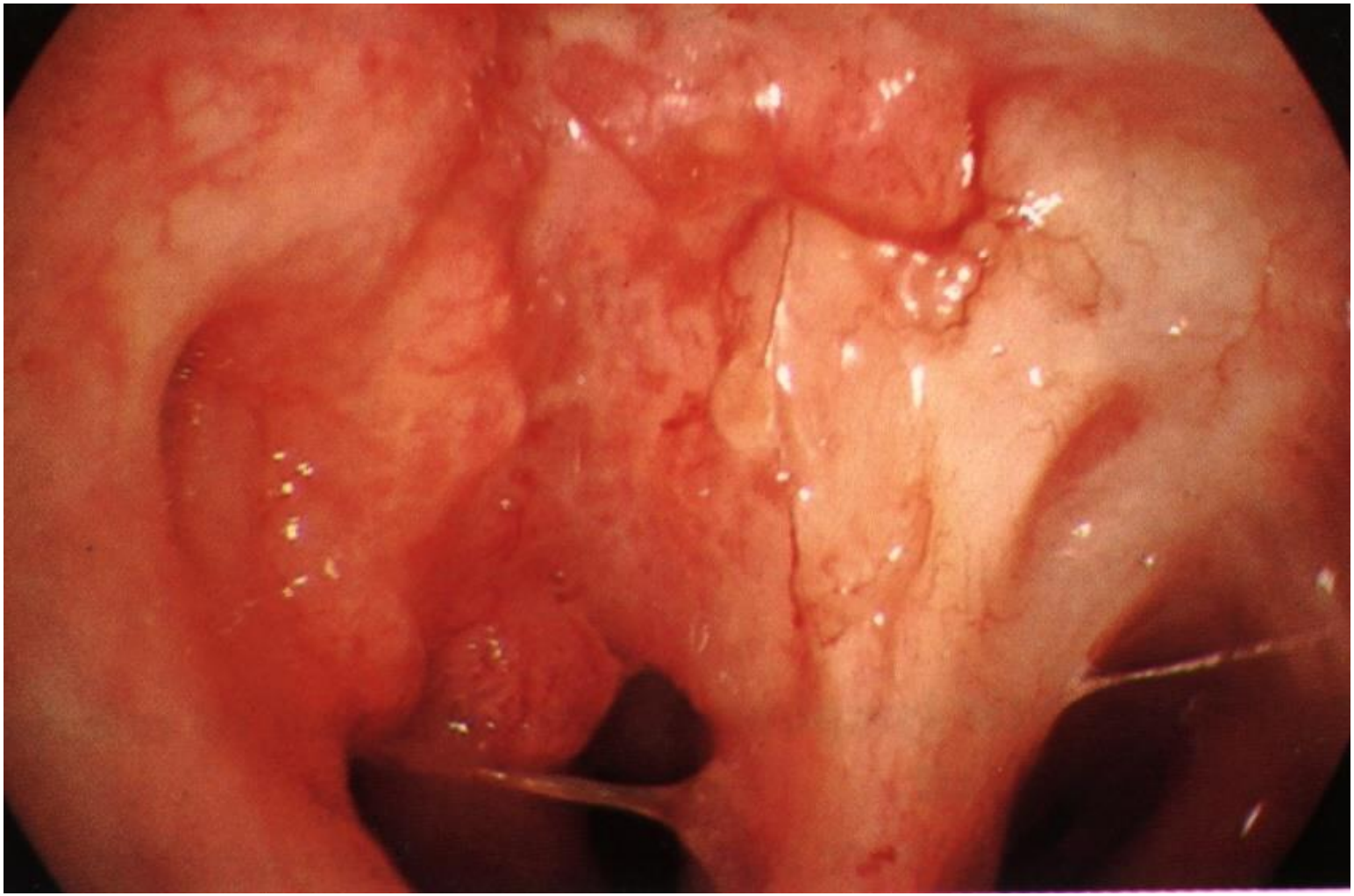
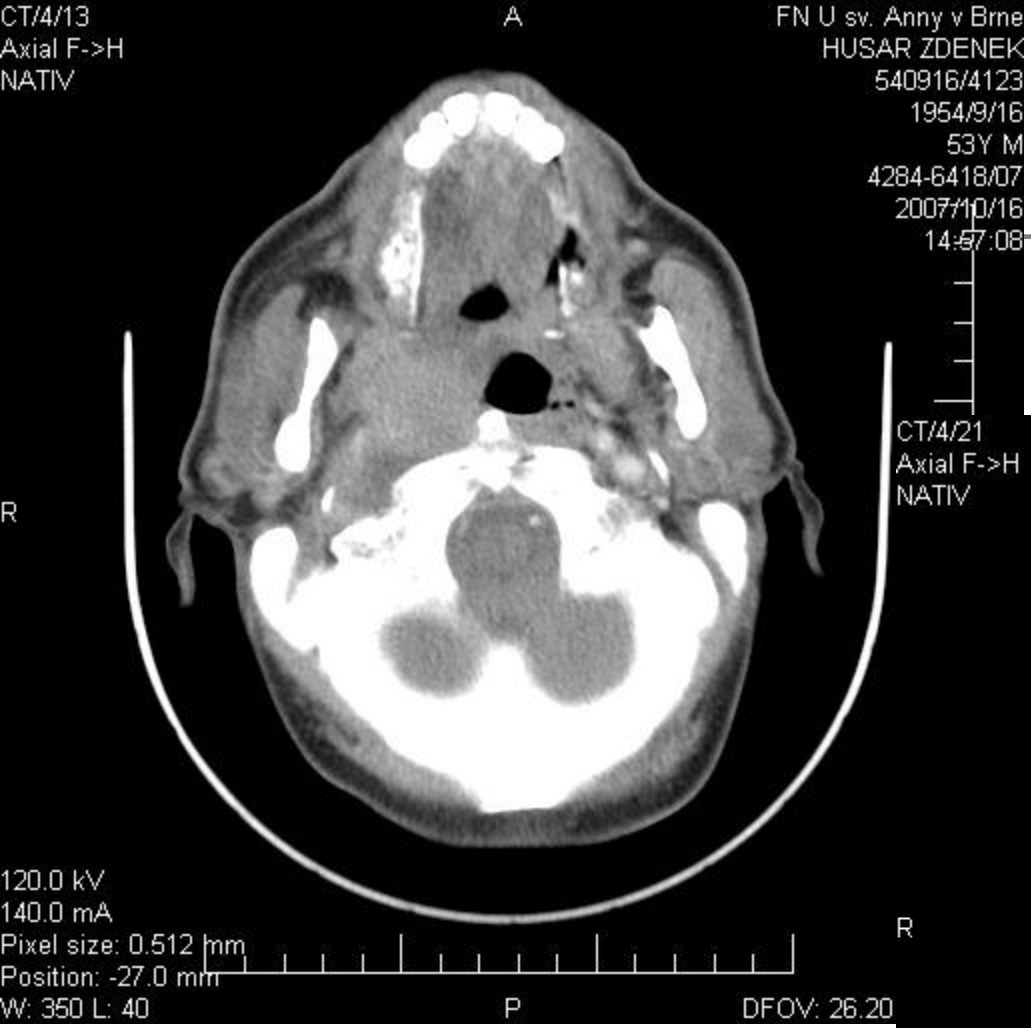
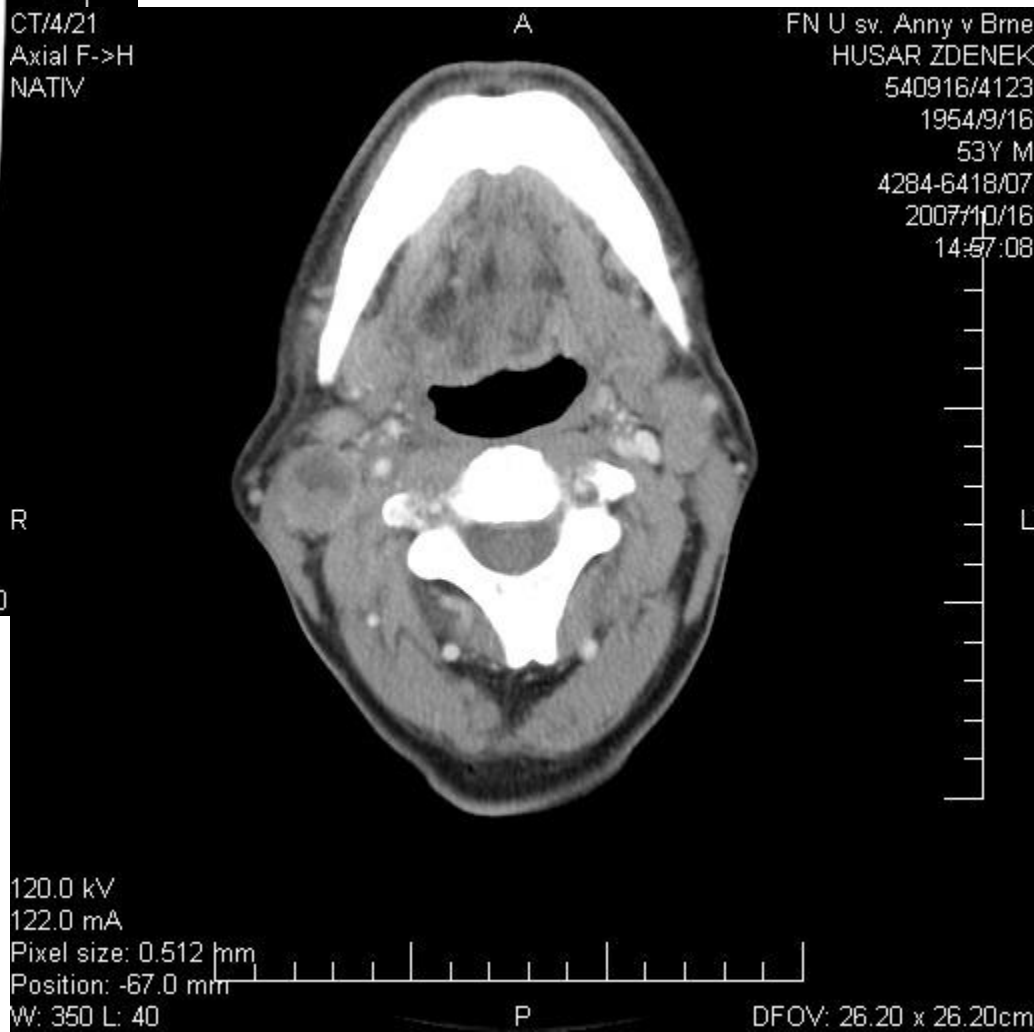
Cancer of epipharynx invading roof, extending into torus tubaris – T_2



Ca epipharyngis
T4N2c

53 year, random finding, hypacusis mixta. dx.





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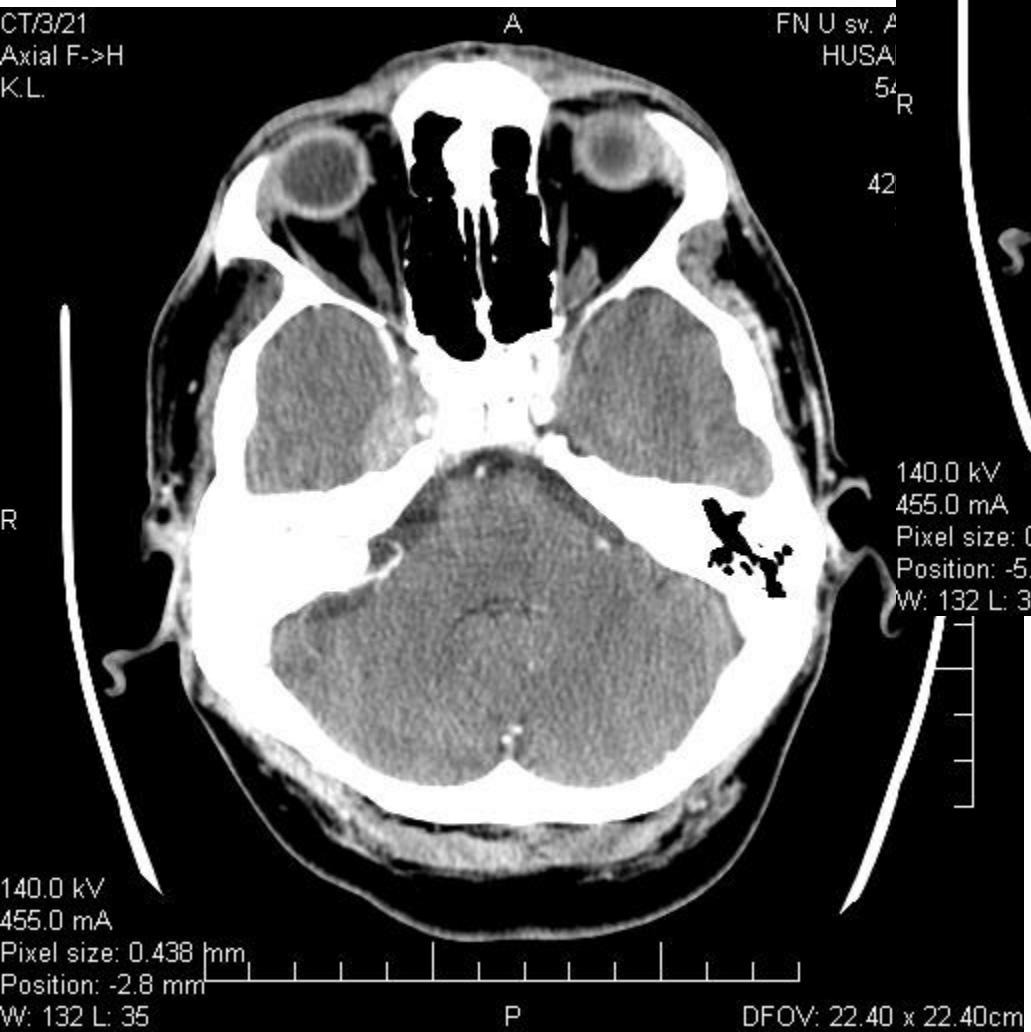

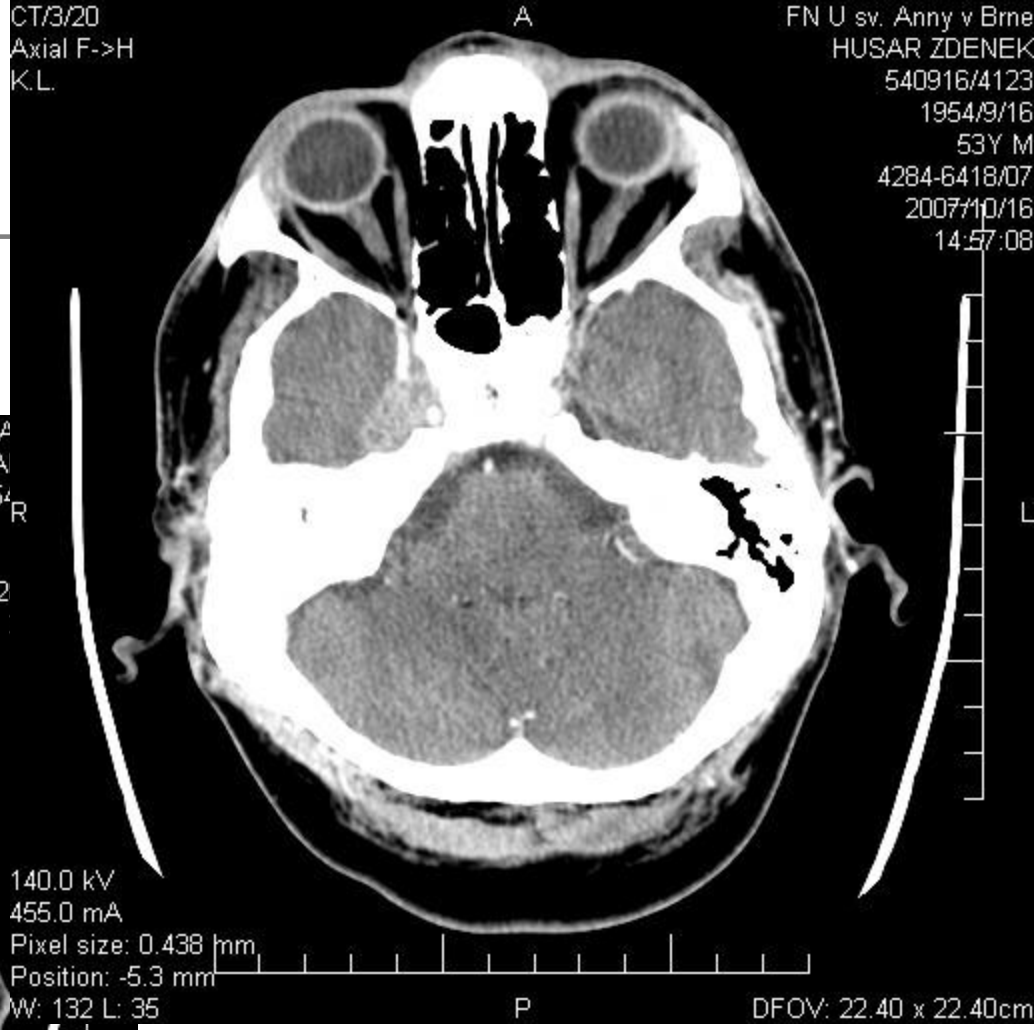

Ca epipharyngis
T4N2c
the same patient

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Tumors of epipharynx - histologic findings

- Carcinomas (WHO classification) –
  - Type 1 – carcinoma spinocellulare with keratinisation
  - Type 2 – carcinoma spinocellulare without keratinization
  - Type 3 – low differentiated or undifferentiated carcinomas
- Tumors of soft tissue: Juvenile angiofibroma, paraganglioma (chemodectoma).
- Malignant lymphoma
- Miscellanea: melanoblastomas, chordomas, craniopharygneomas, neuroblastomas

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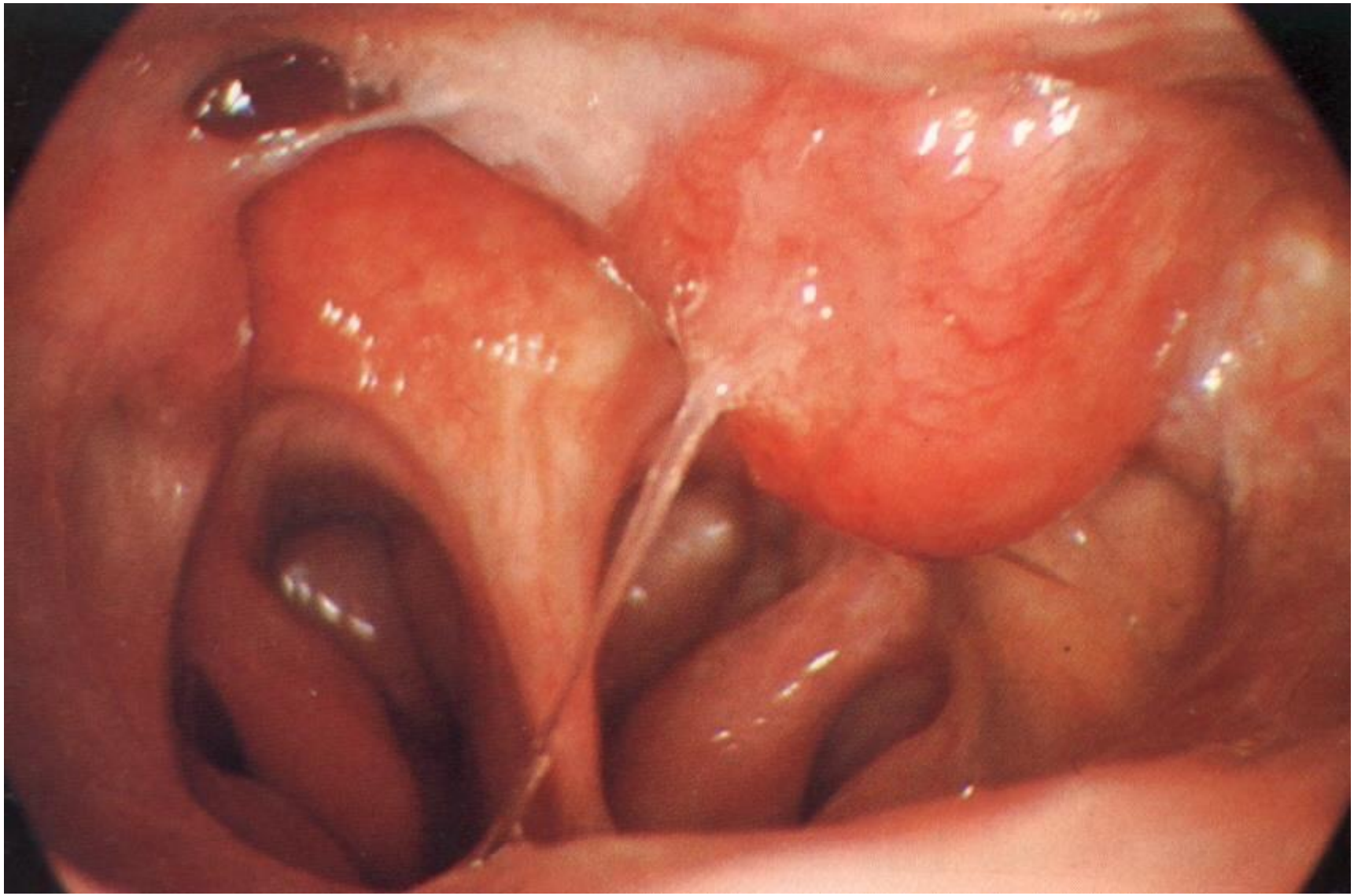
Lymphoepithelioma of epipharynx (Schmincke- Regaud)



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Nasoharyngeal tumors etiology

Food habits: salt fish (nitrosamins), croton oil – promotors of some lymphoblastic clons virus Epstein Barr (EB virus)

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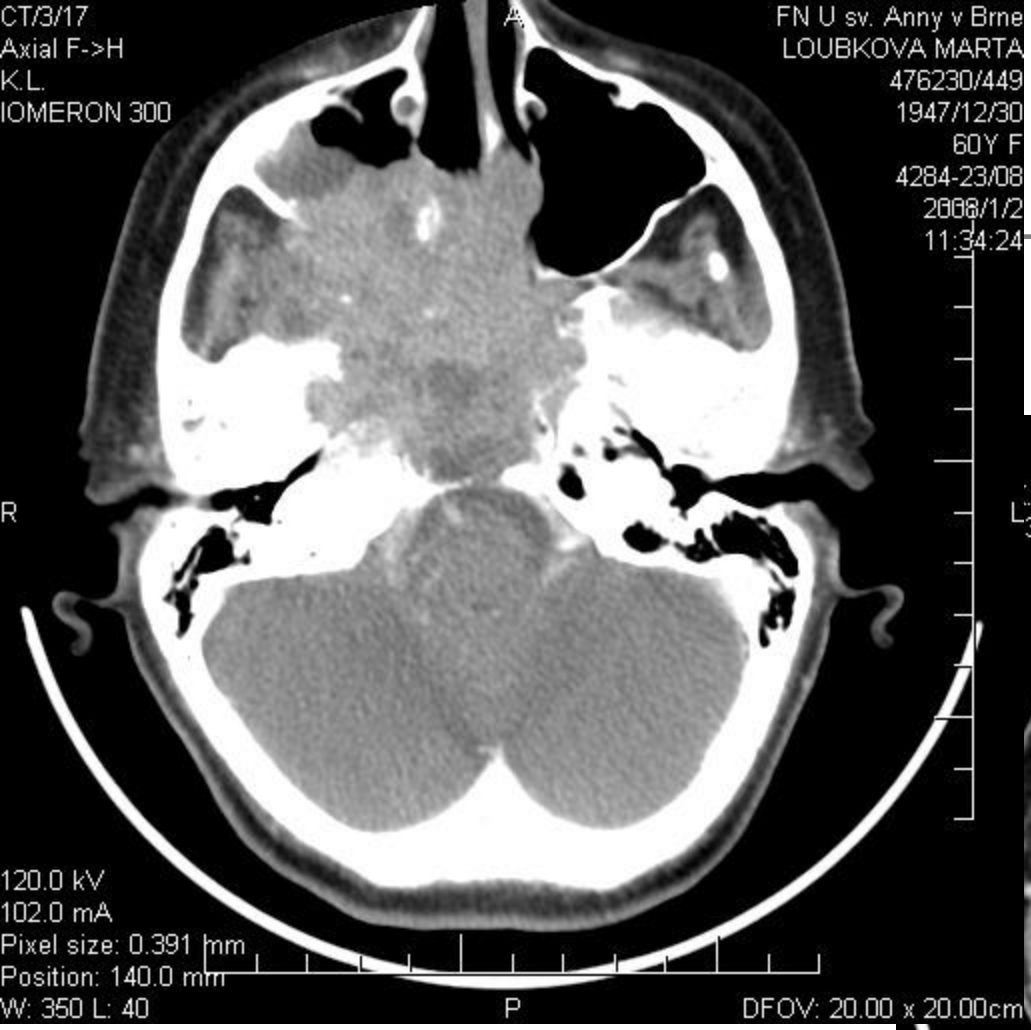
Symptoms

- Ear – sensation of fullness in ear, worsening of hearing, tinnitus, pain in the ear
- Nose - obstruction, bleeding
- Pharyngeal - sensation of foreign body
- Eye - diplopy, ophthalmoplegia
- Neurologic - trigeminal hypesthesia,
- Trotter trias: trigeminal neuralgia, hypacusis conductiva, asymetry of soft palate from paresis on involved side.

Clinical finding: bumpy, exulcerated, rough, mostly exophytic tissue in epipharynx

Ca epipharyngis
T4



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Therapy

- Cancer, current protocol: Curretage of epipharynx + concomitant chemoradiotherapy. 55 - 70 Gy. Eventually neck dissection (in case of persistence arter CHRT)
- Lymphomas radiotherapy 40-45 Gy.

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Oral cavity anatomic sublocalisations

- Lips
- Mucosa membrane of lips and cheek
- Retro molar region
- Bucoalveolar sulcus
- Superior alveolus and gingiva
- Inferior alveolus and gingiva
- Hard palate
- Tongue before papillae circumvallate
- Base of oral cavity

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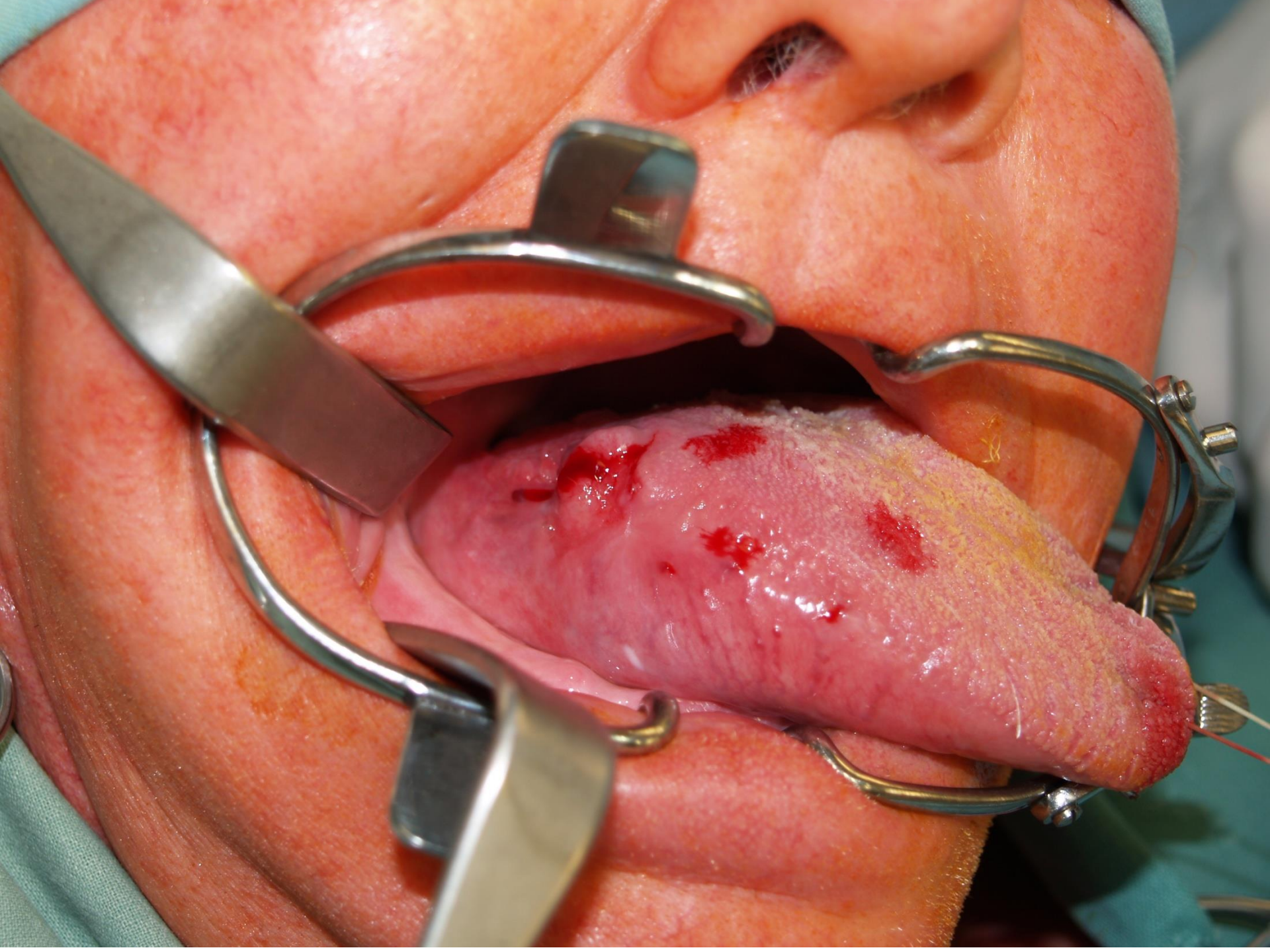
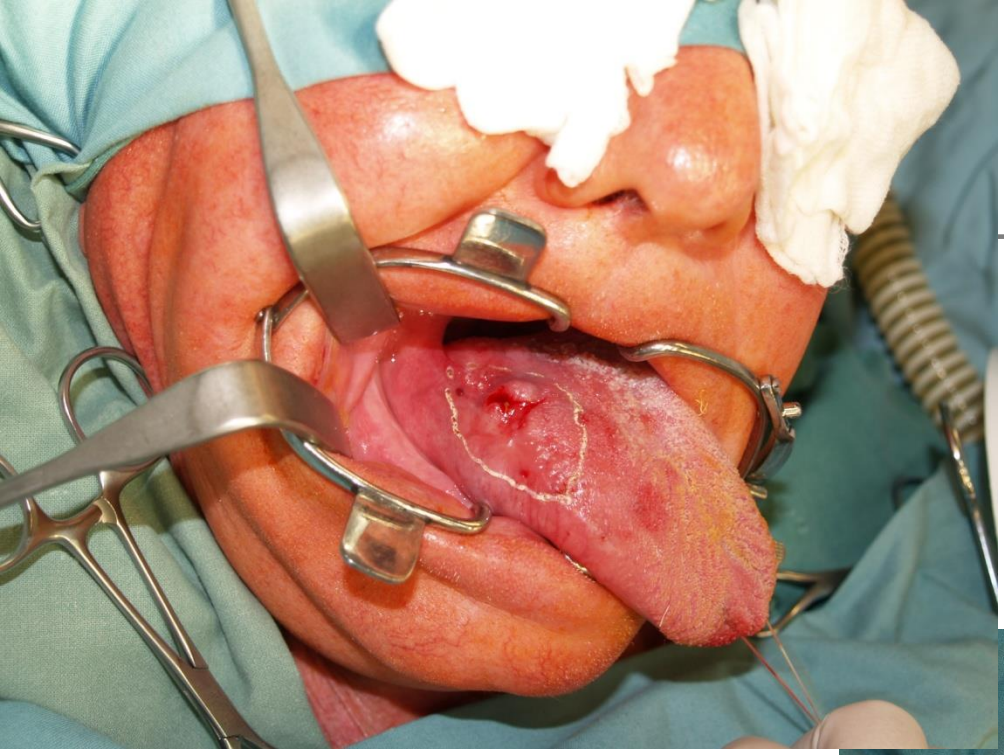
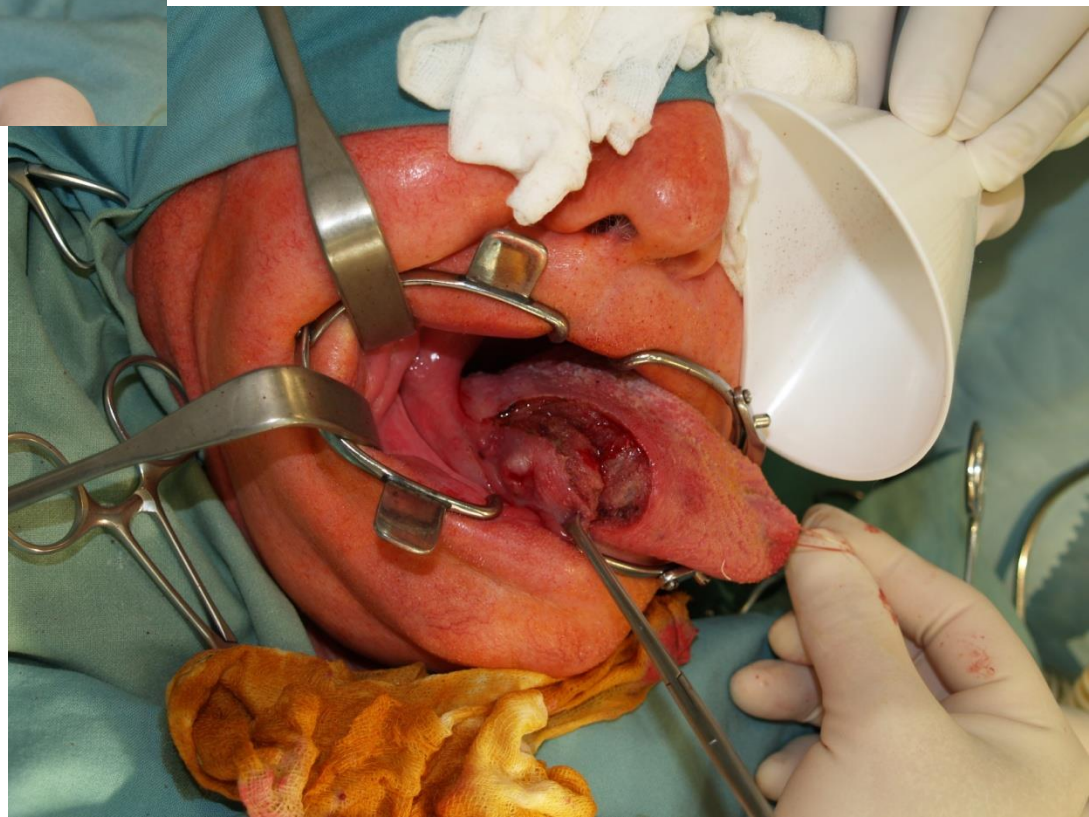
TNM classification

- TNM – borders 2cm -4 cm, infiltration of corticalis ane deep muscles of tongue
- Important – thickness of tumor– even in clinically negat. neck in tumor more than 5mm thick neck dissection necessary
- Infiltration of bone - T4
- Reconstruction with help of tongue or cheek flaps or soft palate or microsurgery flaps







Laser surgery of tongue

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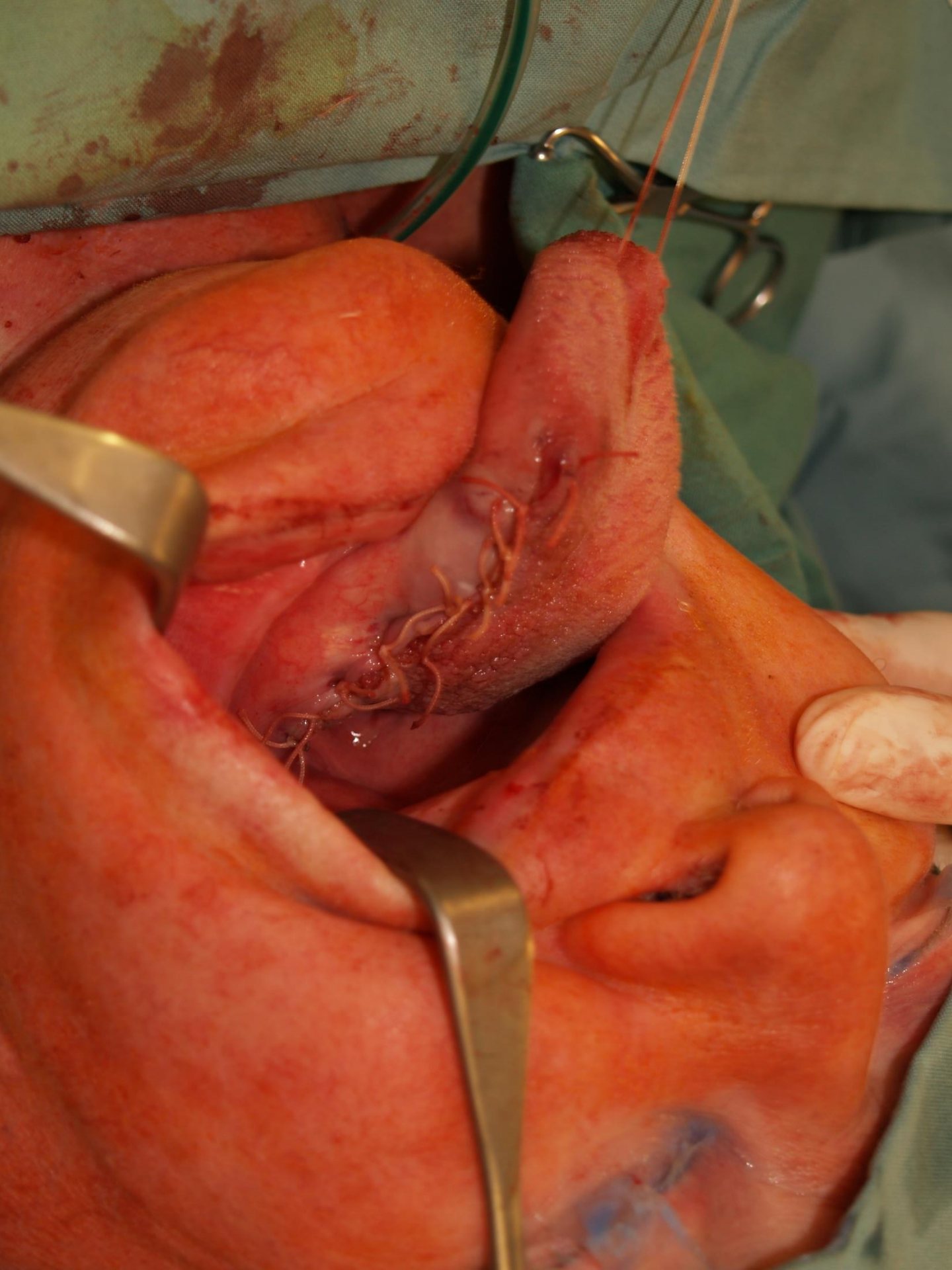
Laser surgery of tongue



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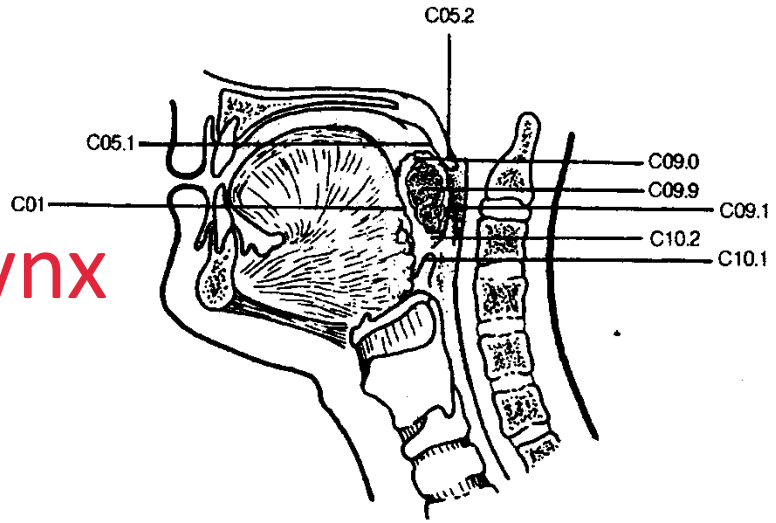
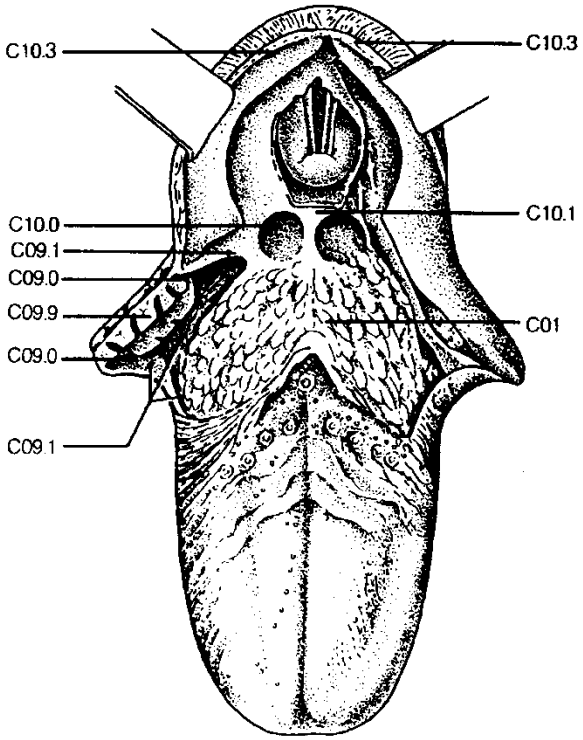
Cancer of oropharynx





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what we knew

Cancer of pharynx and larynx were considered to have the same cause - smoking…

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what we have learnt

Many of epidemiologic studies of molecular pathology document, that human papillomavirus (HPV), especially type 16 is etiologically connected with oropharyngeal cancer

- Gillison 2009

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HPV and prognosis of OSCC

Prognosis of HPV related cancer is better than tobacco related cancer. Expression of p16 in HNSCC marked group of HPV induced tumors with good prognosis

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Treatment of HPV positive OSCC

- ✓Organ saving strategy should be more successful.
- ✓Better response on induction chemo and chemoRT

Fakhry J Nat Inst 2008: 100, 261

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Comparison of HPV+ a HPV- tumors

	HPV+	HPV -
Incidence	↑	↓
Age	<50	50-70
Risk factors	oral sex	smoking, alcohol
Histology	low differentiated, nonkeratinizing, bazaloid	middle to good differentiated, keratinizing
Markers	p16	p53
TNM klassification	Lower T N++	higher T N+
Metastasis in lymphnodes	cystic	more homogenous
Chemoradiosenzitivity	high	lower
Prognosis	good	worse
OS (5 let)	>80%	< 40-50%

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Tumors of oropharynx symptoms

At least half year without clinical symptoms:

- Painful dysphagia
- Pain in the ear
- Feeling of foreign body in the pharynx
- bleeding
- trismus

Clinical finding: hard knot covered with muco membrane (induration of the tonsil), later ulceration, oral fetor. Important – unilateral changes, palpation !

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Ca spino palati mollis cT2-3 cN2b M0 st. IVa

histology: low diferentiated nonkeratinising squamocelular cancer
p16 negative
MKN: C051
MKN-O:
M-8070/3 3

Retromolar trigonum cancer T2

Ca spino palati molle T1

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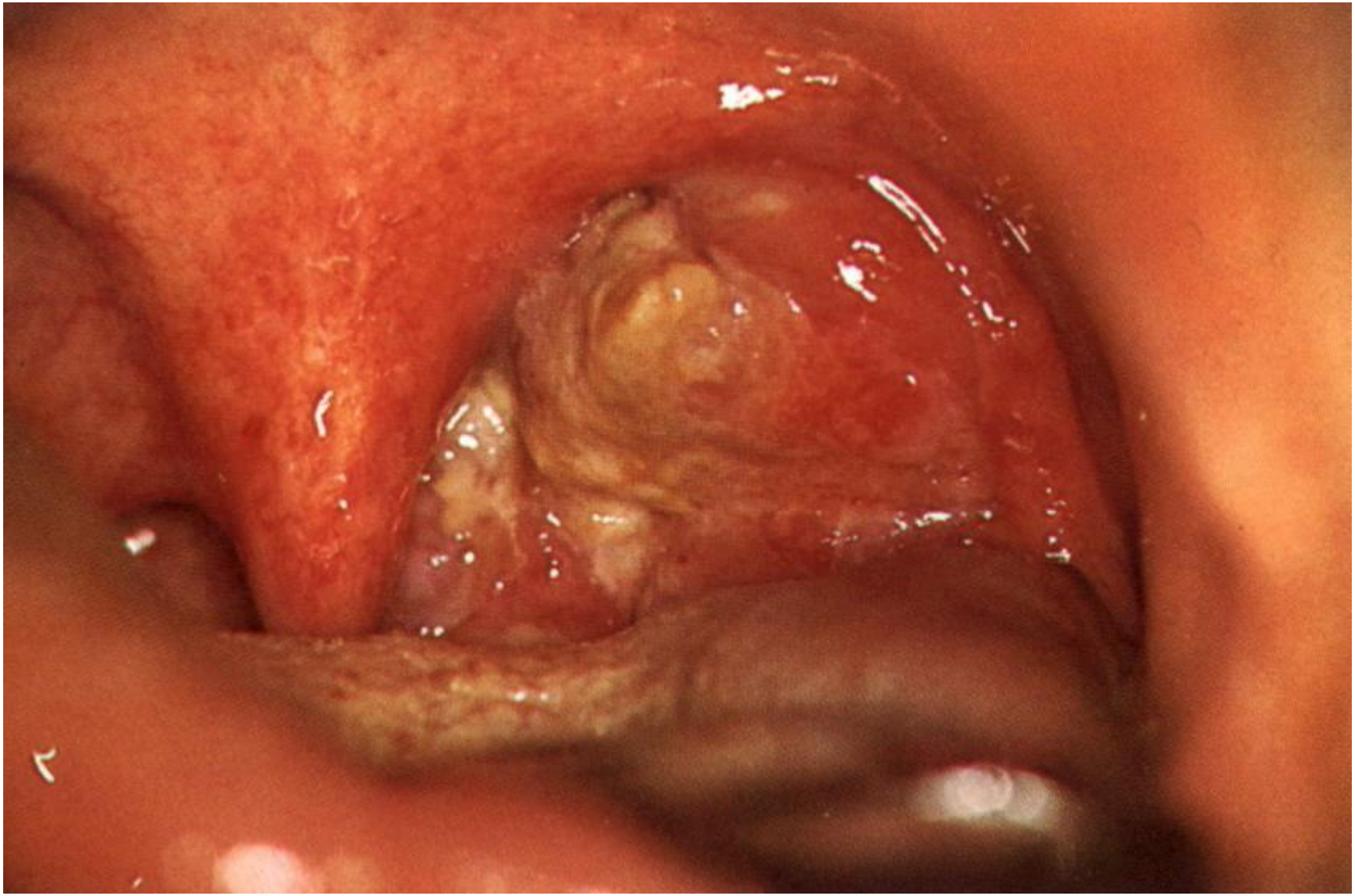
Left tonsil cancer



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Cancer of oropharynx – soft palate IV. stage

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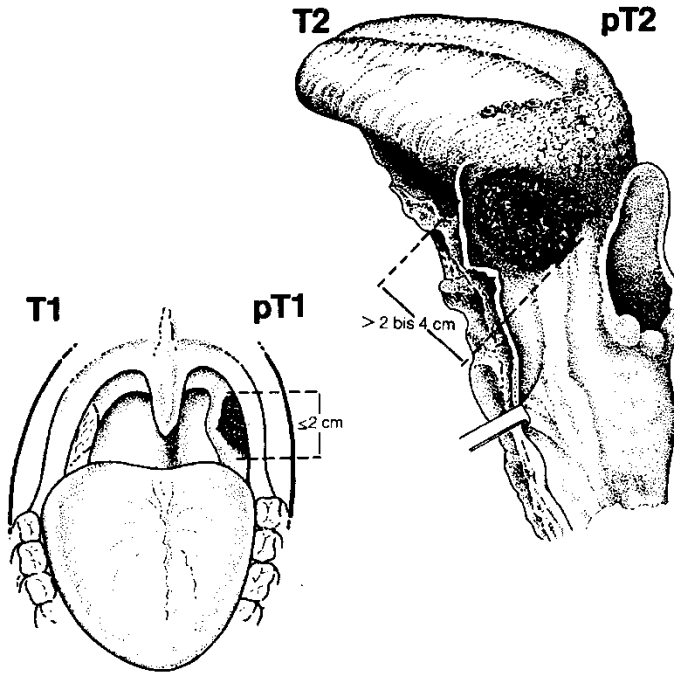
Cancer of the base of the tongue



Tumors of oropharynx TNM classification

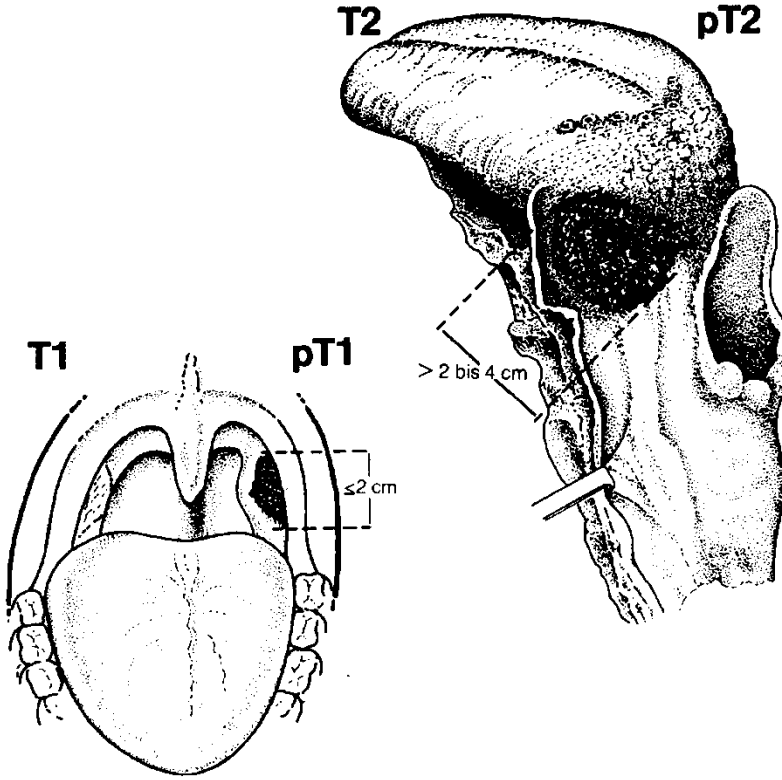
T1. Tumour 2 cm or less in greatest dimension

T2. Tumour more than 2 cm but not more than 4 cm in greatest dimension

T3. Tumor more than 4 cm in greatest dimension

T4a. Tumor invades any of the following: larynx deep/ extrinsic muscle of tongue (genioglossus, hyoglossus, palatoglossus, and styloglossus), medial pterygoid, hard palate, and mandible

T4b. Tumor invades any of the following: lateral pterygoid muscle, pterygoid plates, lateral nasopharynx, skull base; or encases the carotid artery



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Therapy of oropharyngeal cancer

Radically resected tumors

Radical surgery (safe margins, R_0) + neck dissection+ actinotherapy vs. **Primary nonsurgical treatment**
Actinotherapy LD 55-60 Gy + boost 10-15 Gy + chemotherapy in risk factors, always prophylactic lymph node actinotherapy.

Lymphomas 40-45 Gy.

Advanced not radically resected tumors

Palliative radiotherapy or chemo-radiotherapy with attempt of curative treatment or only BSC

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Routes of access for tumors of the mouth and pharynx

Transoral(1)

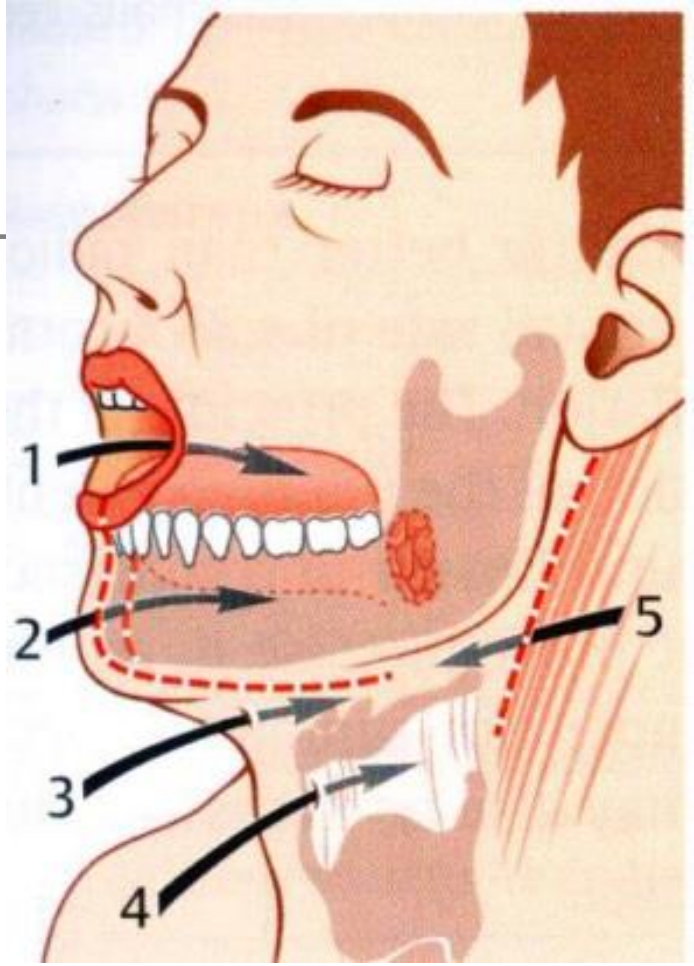
- Limited indications – small accessible tumors

External approaches saving mandible (3-5)

- Lateral pharyngotomy
- Suprahyoid median pharyngotomy

External approaches with mandibulotomy (-ectomy) (2)

- Lateral pharyngotomy with removal of mandibular angle
- Trans mandibular buco-pharyngectomy (BPTM)
- BPTM with resection o lateral mandible segment



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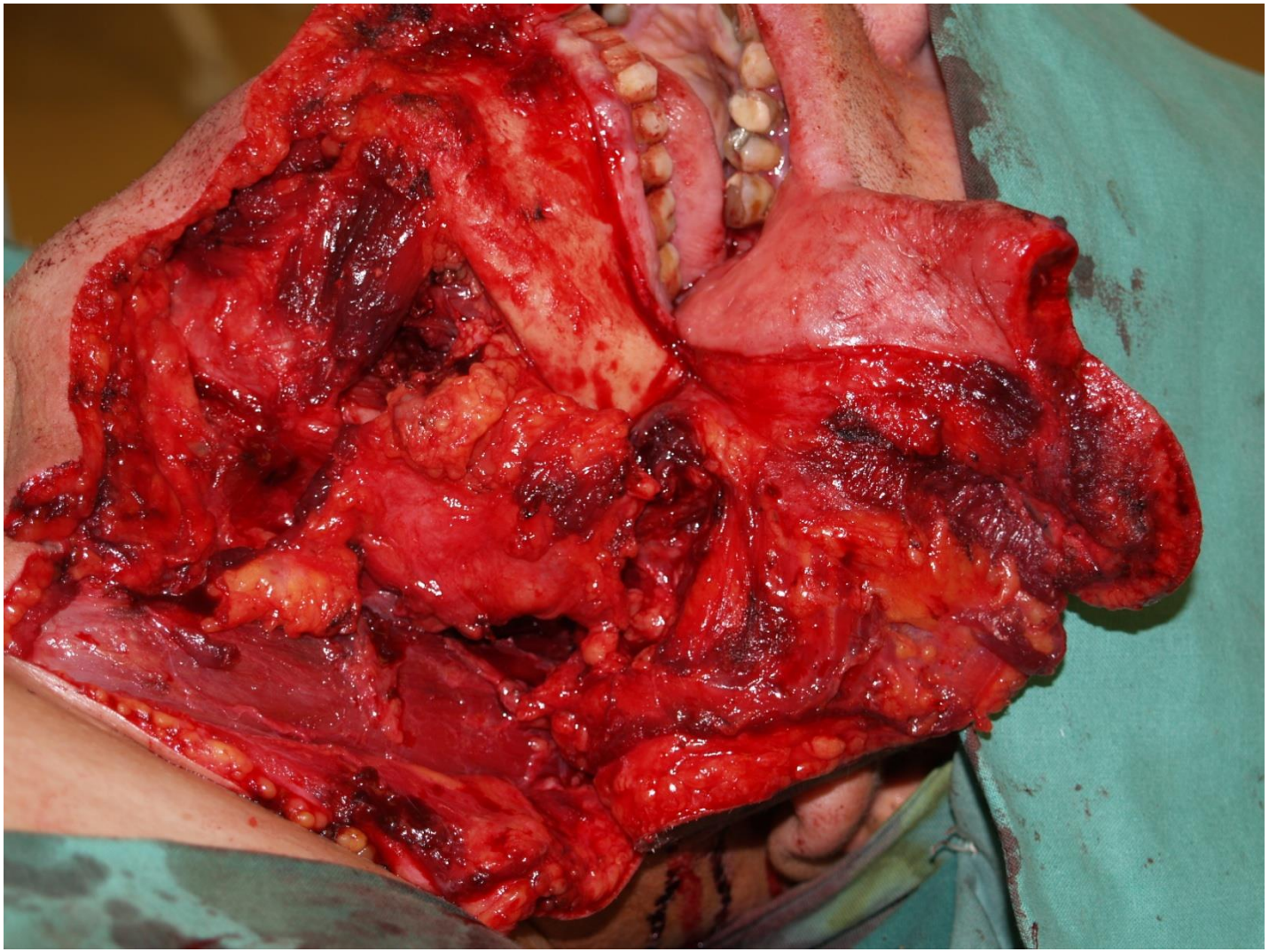
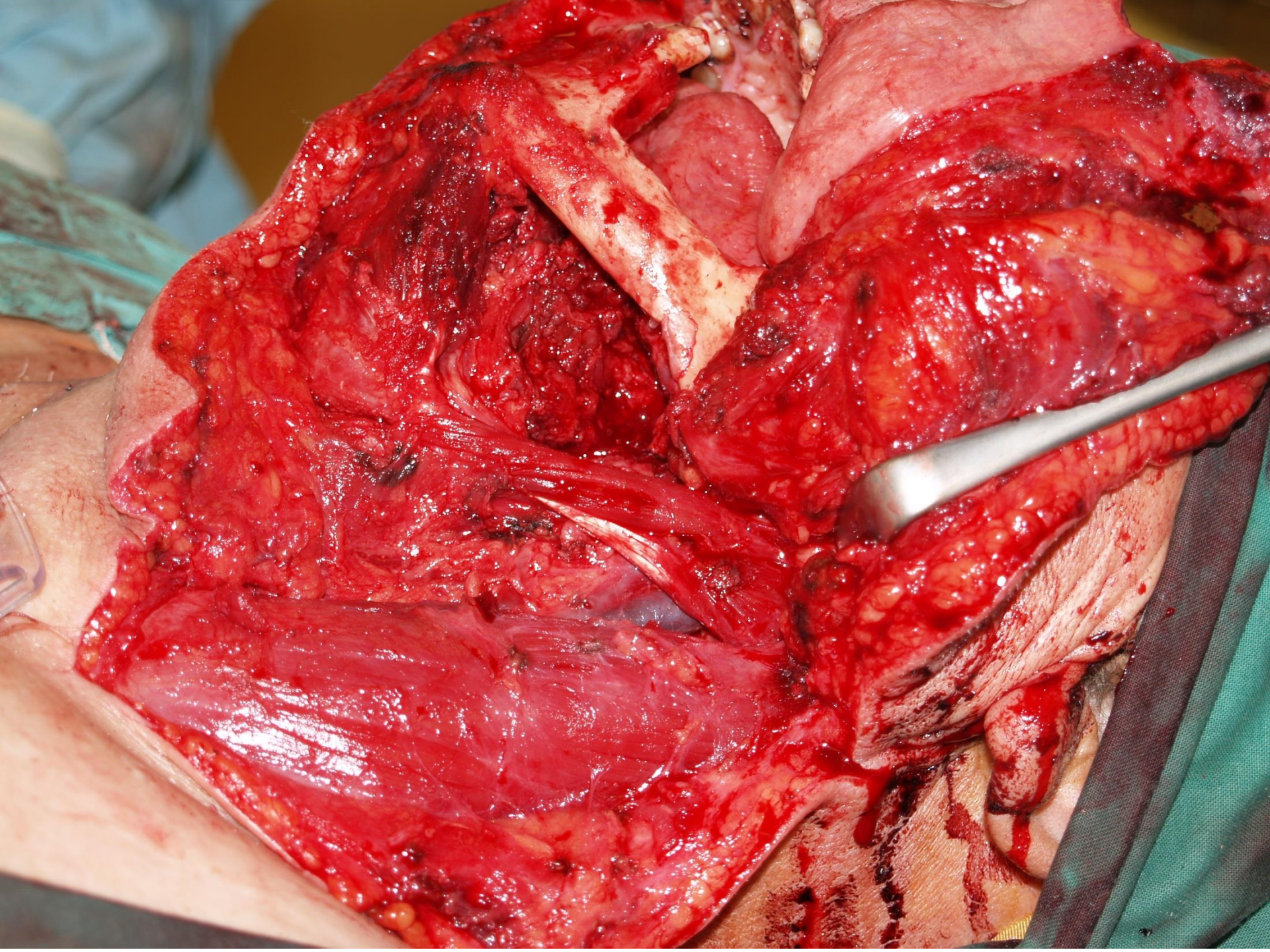
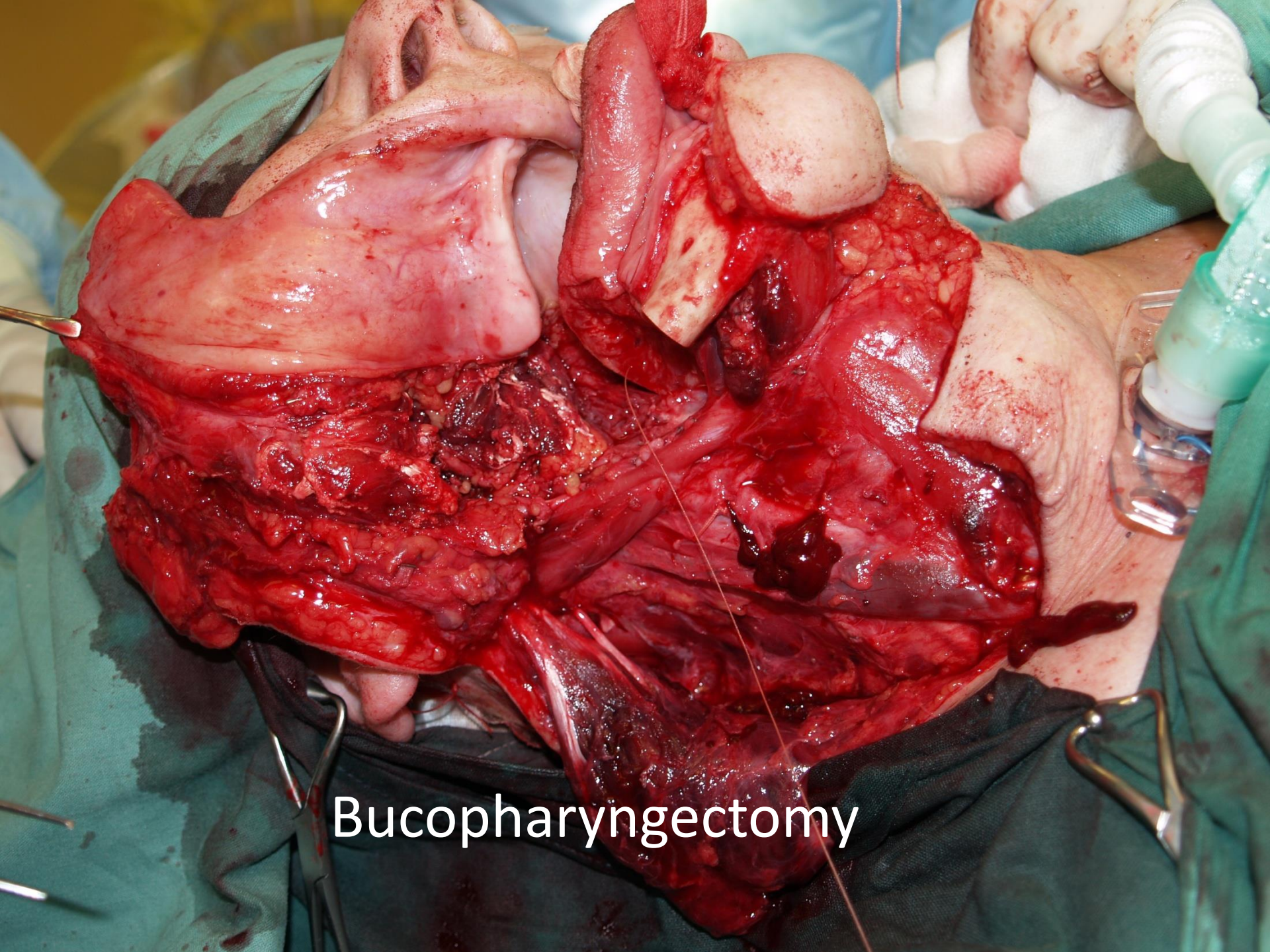
Ca spino gingivae of mandibulae left – pT2N2bM0. Partial mandibulectomy without discontinuance






Bucopharyngectomy