

FAKULTNÍ
NEMOCNICE
U SV. ANNY
V BRNĚ



MUNI
MED

Oncology in ENT II

Clinic of Otorhinolaryngology and Head and Neck Surgery, Masaryk university,
Faculty St. Ann Hospital

Head: Ass. Prof. Gál Břetislav, MD, Ph.D.

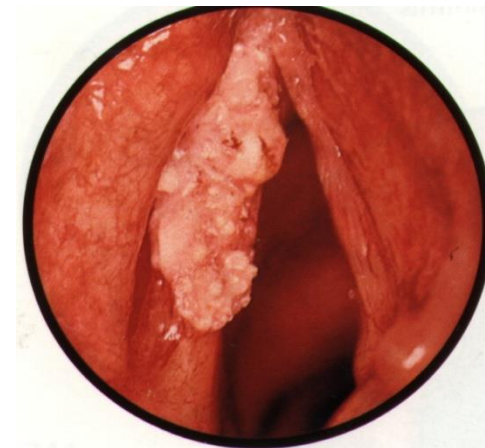
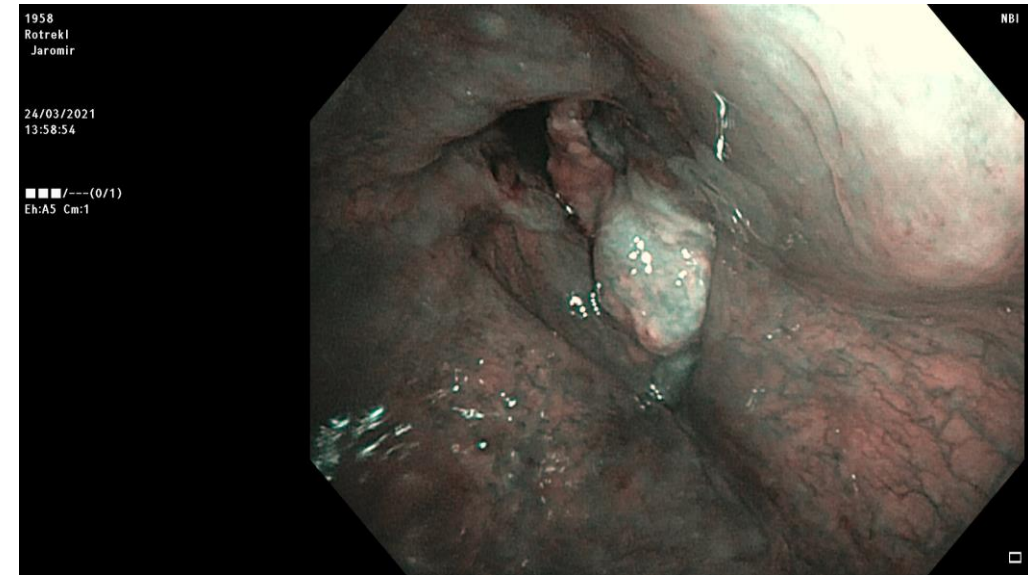
Pekařská 53

656 91 Brno, Czech Republic



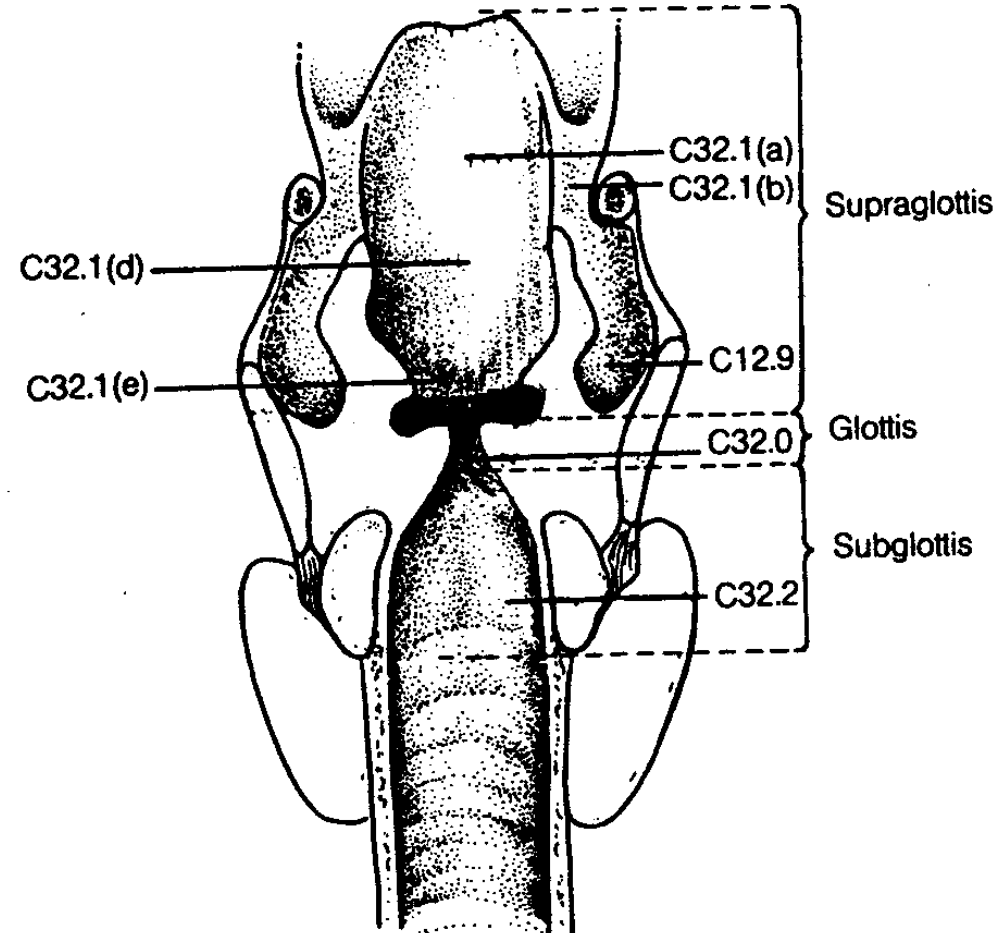
Tumors of larynx - epidemiology

- Incidence in Czech rep. **9,3** male and **1,1** female/100 000 inhabitants.
- Incidence without greater changes over last years in CR
- In man 1,59 % of all malignant tumors
- In female only 0,23 %



Tumors of larynx – lymphatic drainage

- Deep lymphatic net – divided left and right side.
- Vocal cords – poor lymphatic drainage , border between supra- and subglottis
- Supraglottis drained into jugulocarotic chain.
- Subglottis drained into mediastinum, paratracheal lymph node.





Tumors of larynx – risk factors

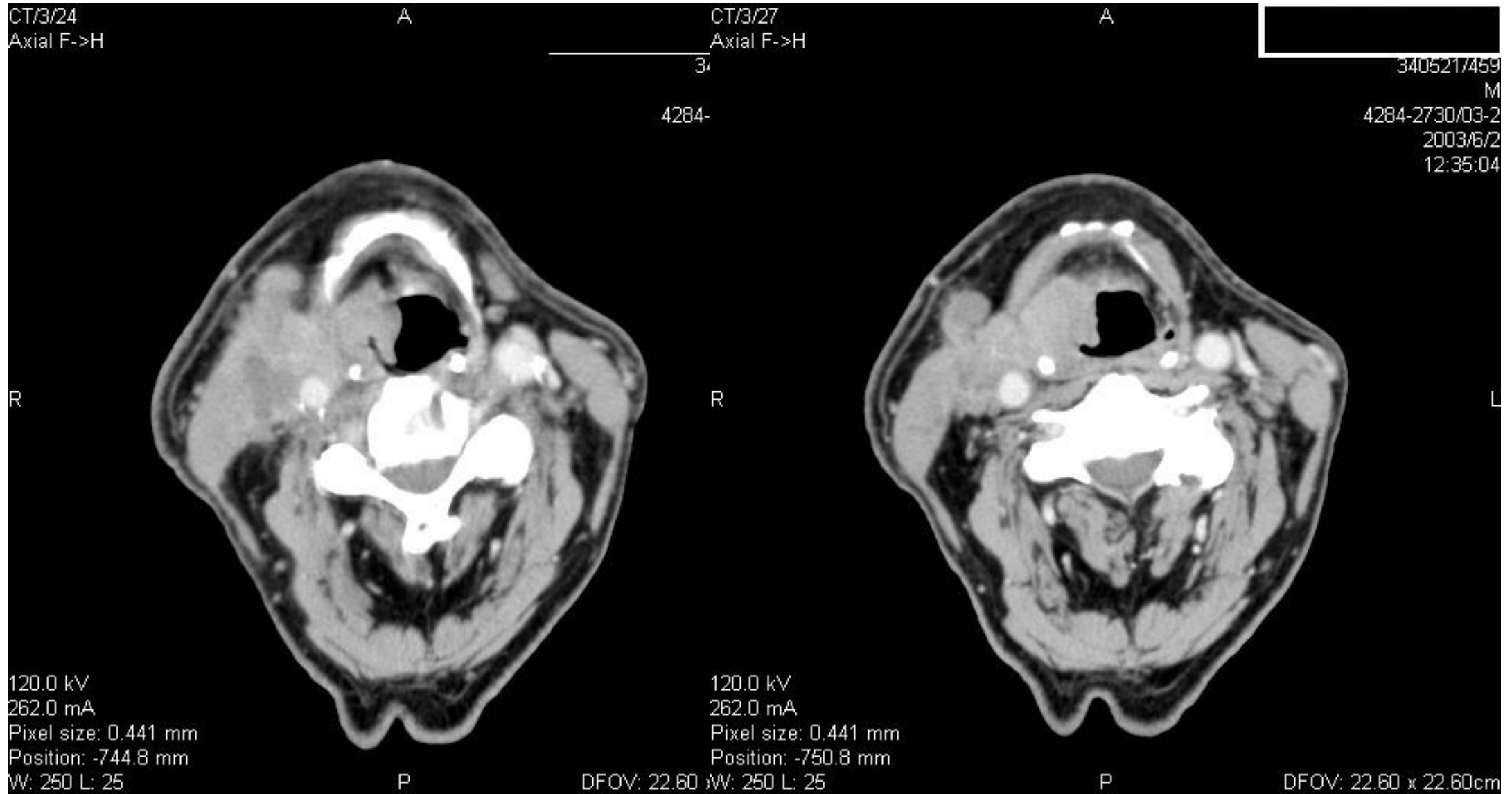
- **Tobacco use especially when start in young age and more than 20 cig/day. Associated with higher expression of protooncogene **bcl-2** (participation in apoptotic inhibition)**
- **Alcohol abuse** higher number of non- specific mutations of gene **P53**
- **Uranium, irradiation for benign lesion (papillomatosis).**
- **chromium**
- **Papillomavirus (HPV)**



Tumors of larynx – evaluation, grading, staging

- Clinical evaluation - character and extension of primary tumor, tributary lymph nodes = staging.
Microlaryngoscopy sec. Kleinsasser
- Histology – histopathologic grading
- Sonography of lymph nodes and organs of stomach cavity
- CT, MRI of primary tumor a tributary lymph nodes
- X-ray evaluation of esophagus
- Stomatology evaluation, prostate by men, gynecology by women

Advanced supraglottic carcinoma (thyroid cartilage afflicted by tumor)





Tumors of larynx - symptoms

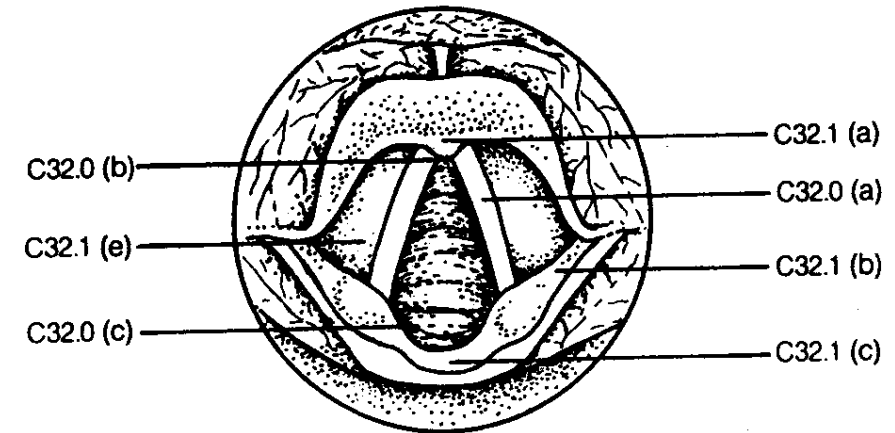
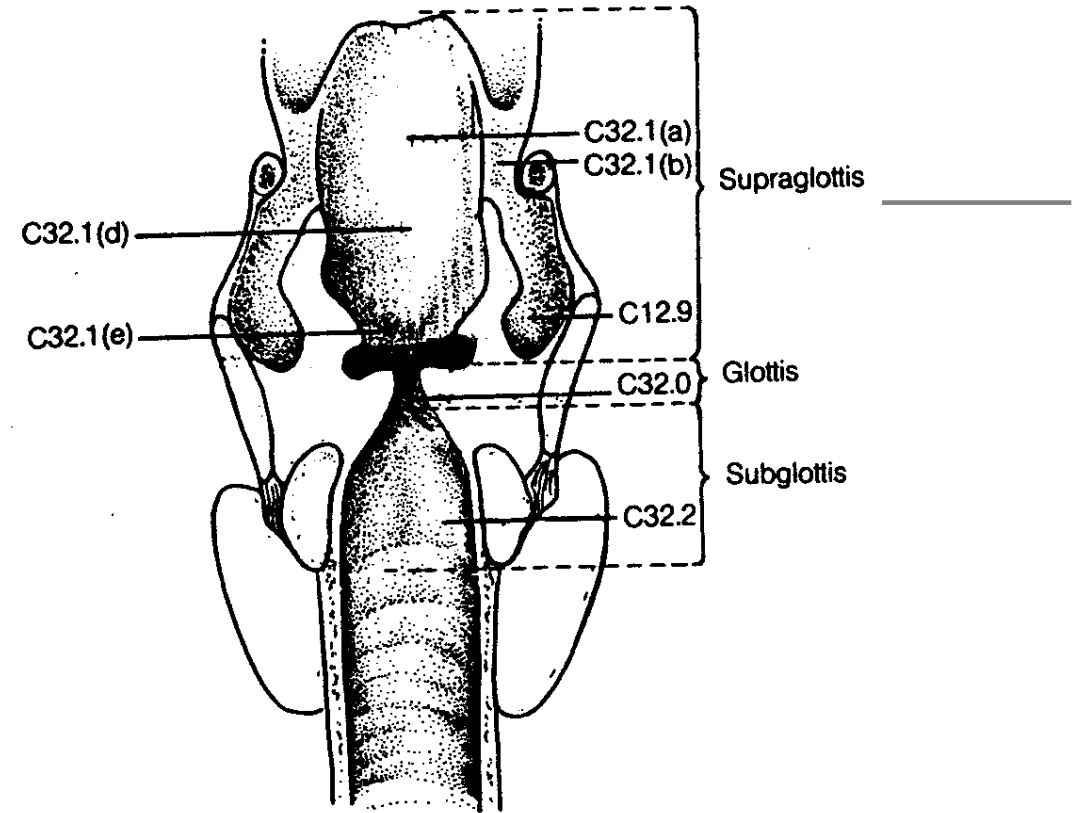
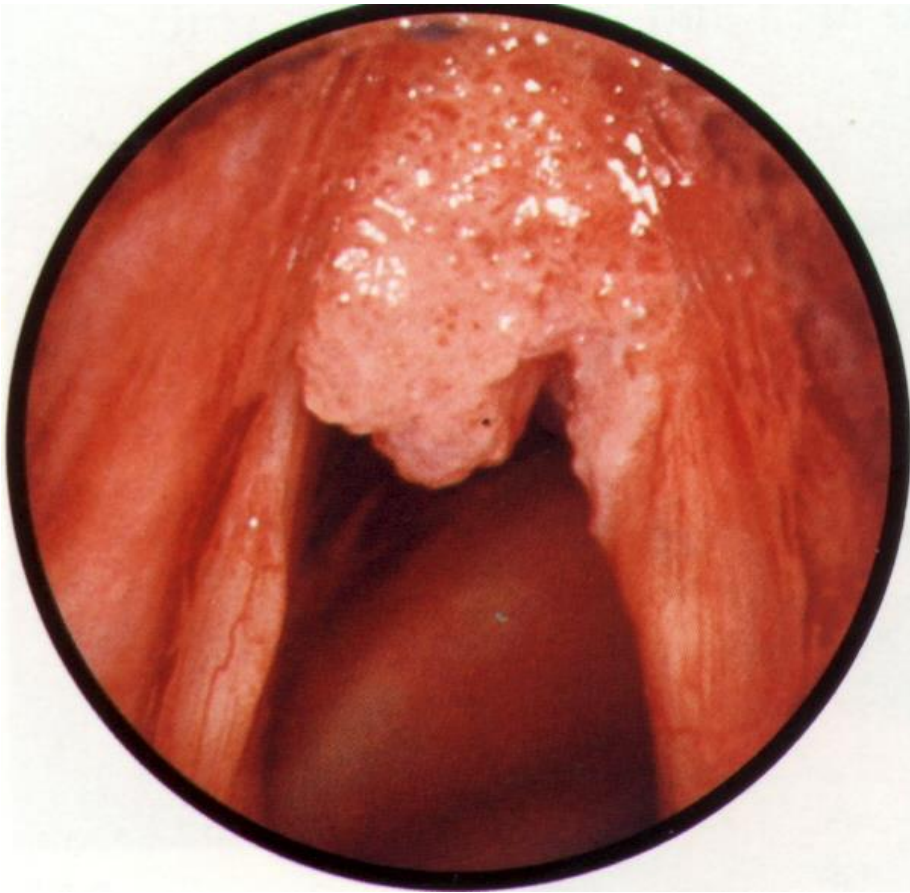
Depends on the extent and localization of primary tumor

- **hoarseness** – Every man in risk group (smoker, more than 40 years old - should be evaluated when hoarseness is present longer than 14 days
- feeling of foreign body - early symptom in supraglottic cancer
- cough
- bleeding
- swallowing problems, odynophagia, dysphagia – early symptom in supraglottic cancer
- Dyspnea with stridor
- perichondritis – pain, odynophagia, dysphagia, temperature
- Cachexia tumorosa



Tumors of larynx

TNM classification



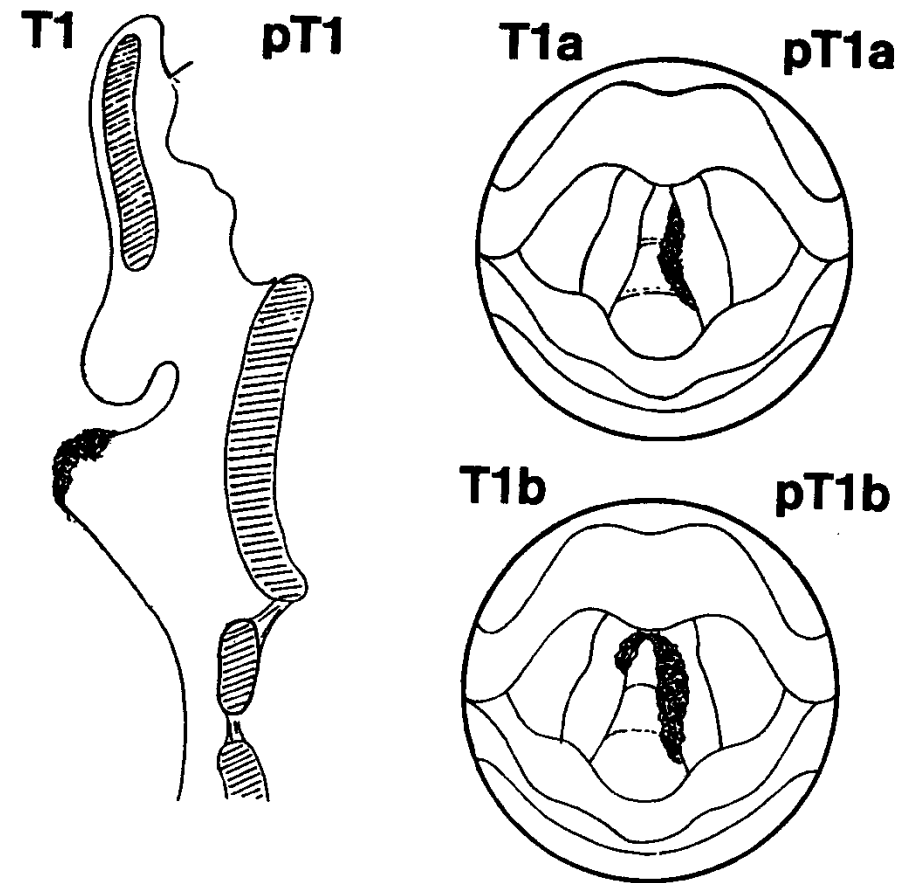
Tumors of larynx (glottis)

TNM classification

T1 Tumor limited to vocal cord(s) (may involve anterior or posterior commissure) with normal mobility

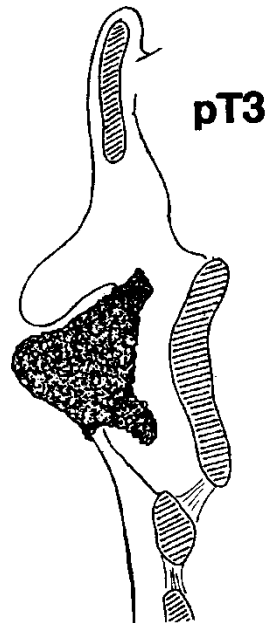
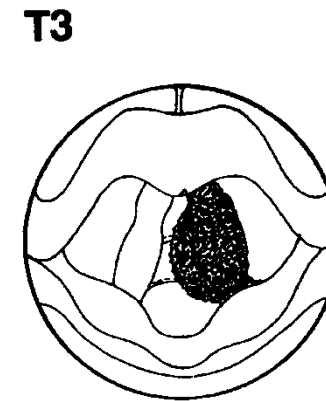
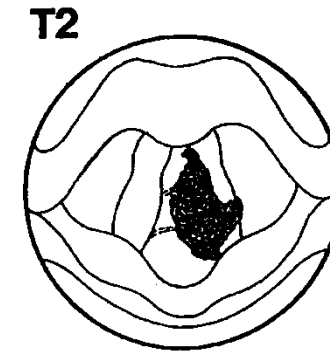
T1a Tumor limited to one vocal cord

T1b Tumor involves both vocal cords



Tumors of glottis TNM classification

- T2** Tumour extends to supraglottis and/or subglottis, and/or with impaired vocal cord mobility
- T3** Tumour limited to larynx with vocal cord fixation and/or invades paraglottic space, and/or with minor thyroid cartilage erosion (e.g. inner cortex)

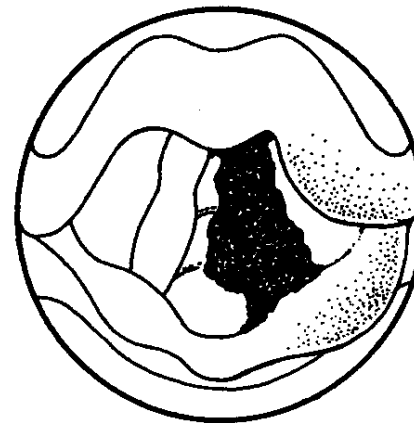


Tumors of glottis TNM classification

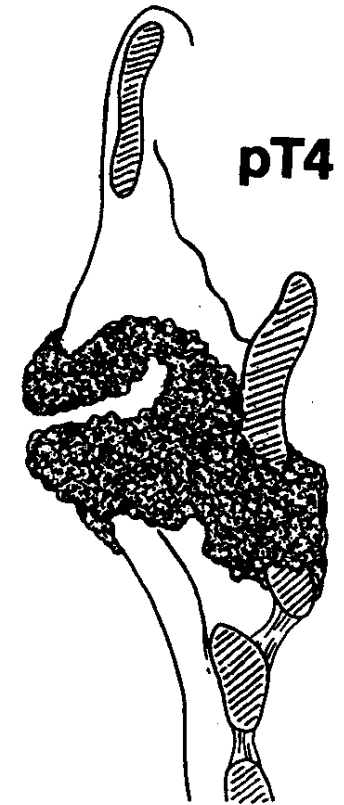
T4a Tumor invades through the thyroid cartilage, or invades tissues beyond the larynx, e.g., trachea, soft tissues of neck including deep/extrinsic muscle of tongue (genioglossus, hyoglossus, palatoglossus, and styloglossus), strap muscles, thyroid, esophagus

T4b Tumor invades prevertebral space, mediastinal structures, or encases carotid artery

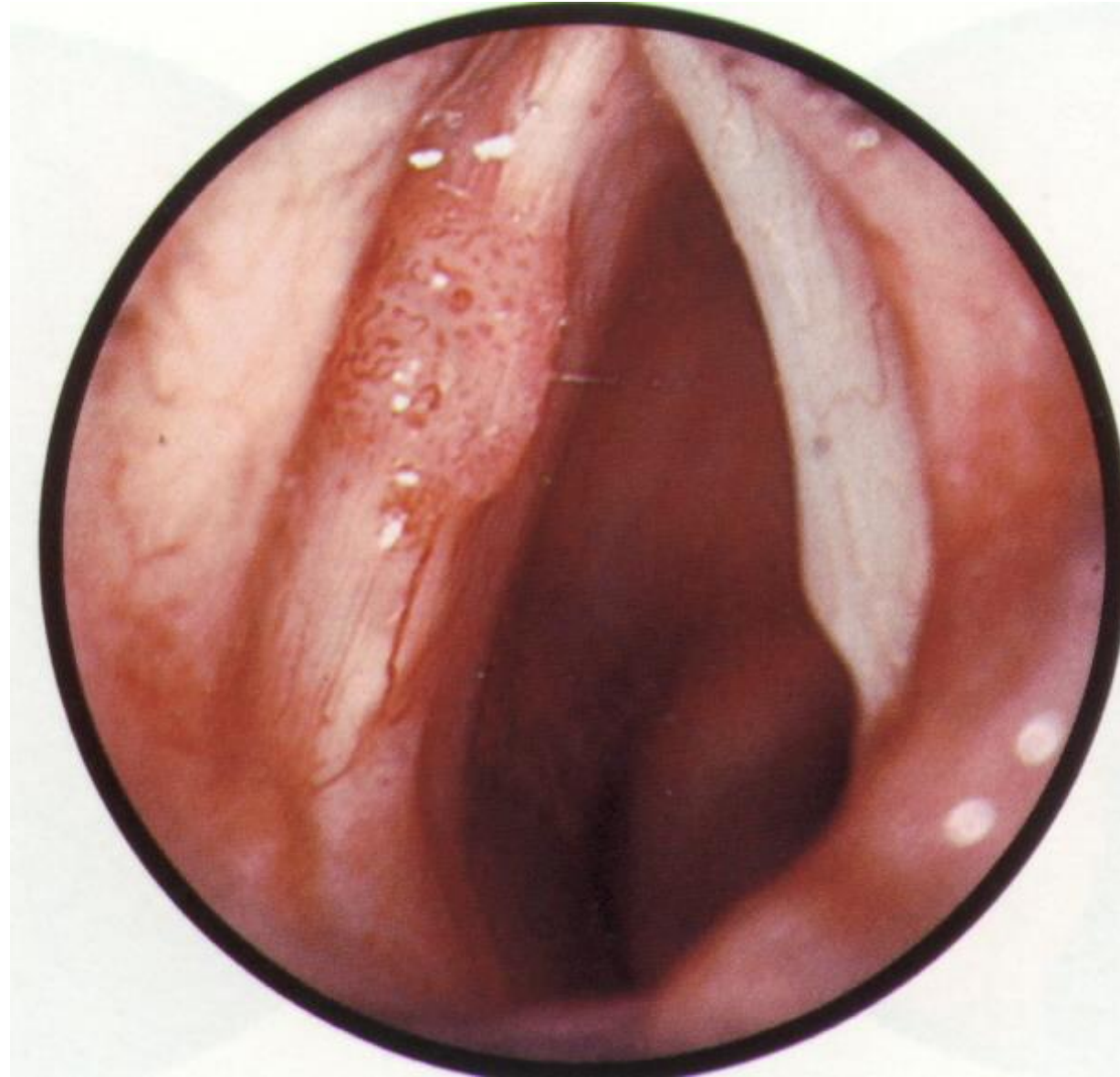
T4



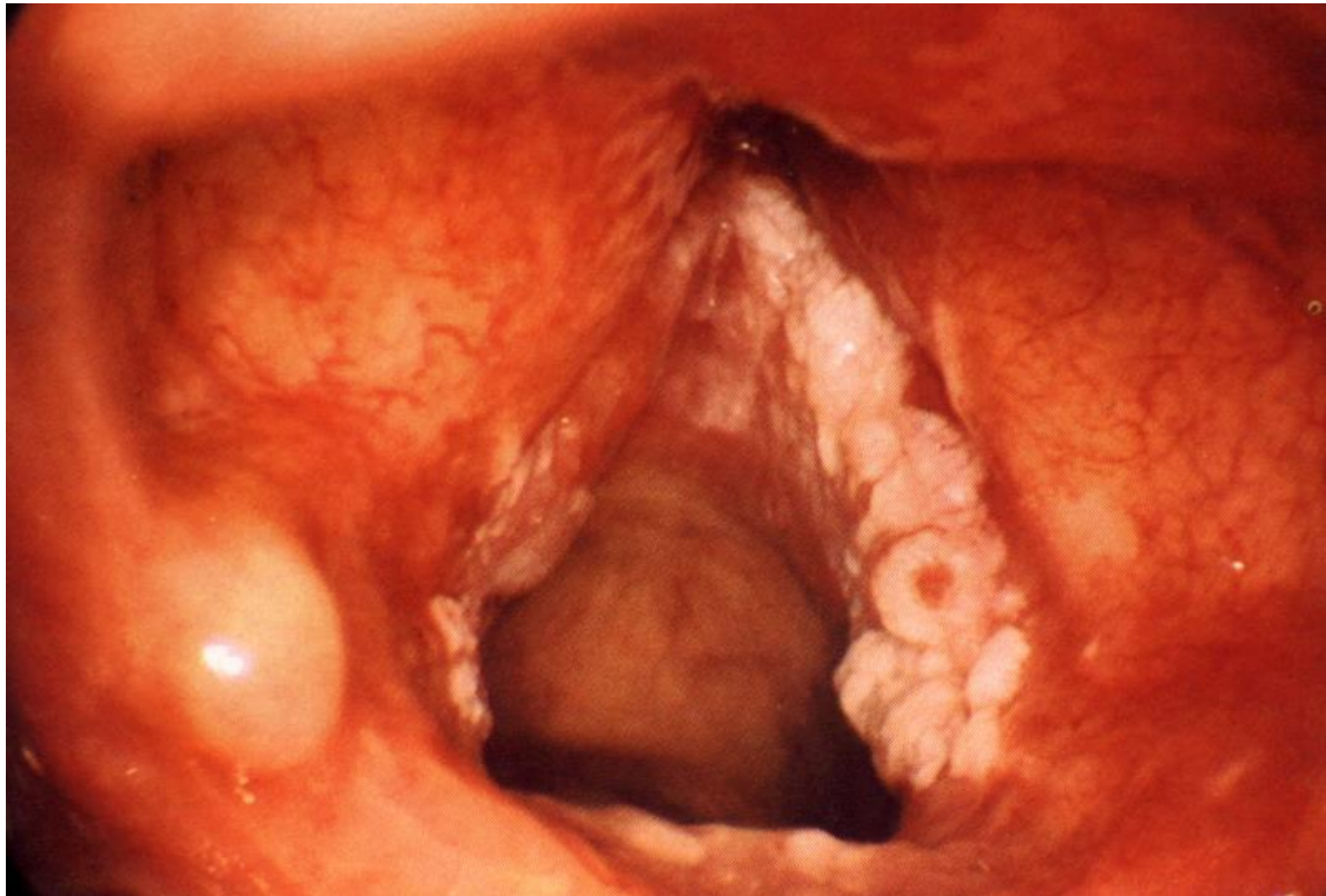
pT4



Cancer of right vocal cord



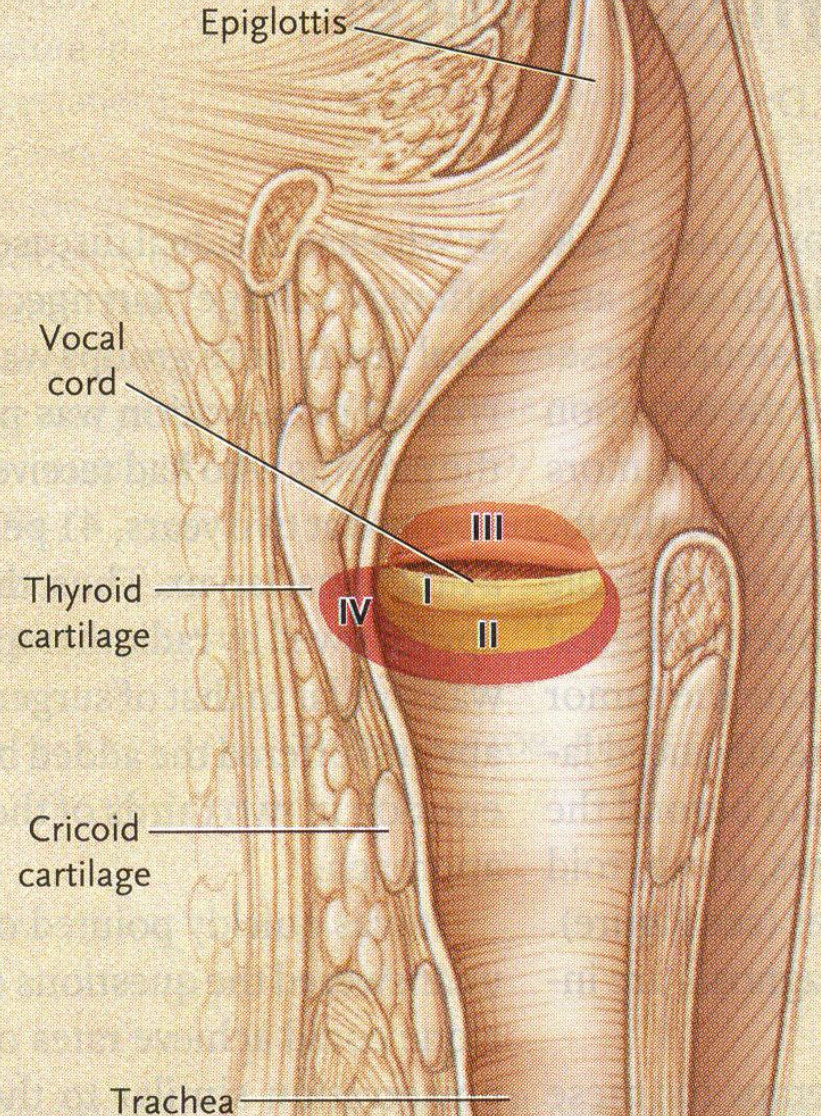
Cancer of left vocal cord



Laryngeal cancer stages

Laryngeal-cancer stages

- Stage I
- Stage II
- Stage III
- Stage IV





Strategy of laryngeal cancer treatment

- Safely tumor removal, safe QOL without sacrifice of overall survival
- In last decades noticeable shift, **emphasis on organ saving protocol** – voice and swallowing
- **Transoral Laser Microsurgery (TLM) vs. Open (external) approaches and radiotherapy** have comparable outcomes of local tumor control, overall survival, but difference in voice quality
- Decision about treatment choice depends on localization, stage, tumor attributes, general status (incl. Vital pulmonary capacity – possibility of external approach) of patient and his preferences.
- Tumor stage
 - **early (T1-2)** – surgery or RT
 - **advanced (T3-4)** – surgery + RT or chemoRT



Surgery of laryngeal tumors

Conservative

Endoscopic transoral

TLM – transoral laser micro surgery

TORS –transoral robotic micro-surgery

External approach – partial laryngectomies

laryngophisura

chordectomy

Vertical partial laryngectomy

Antero-frontal, Fronto-lateral

Lateral hemilaryngectomy

Horizontal partial laryngectomy (supra-glottic)

Subtotal supracricoid laryngectomy

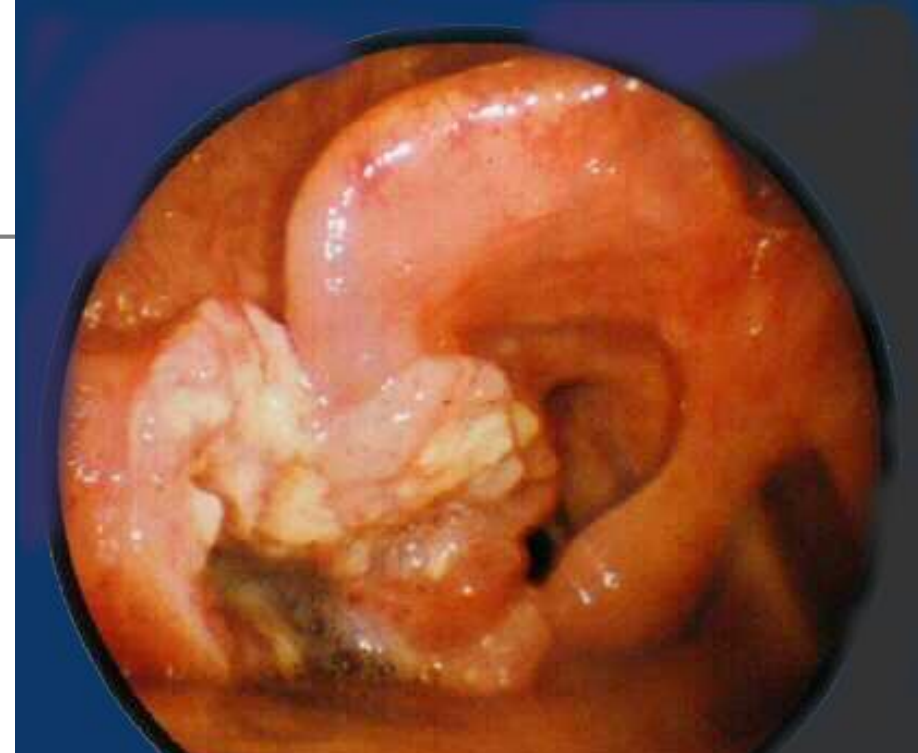
Near total laryngectomy

Radical

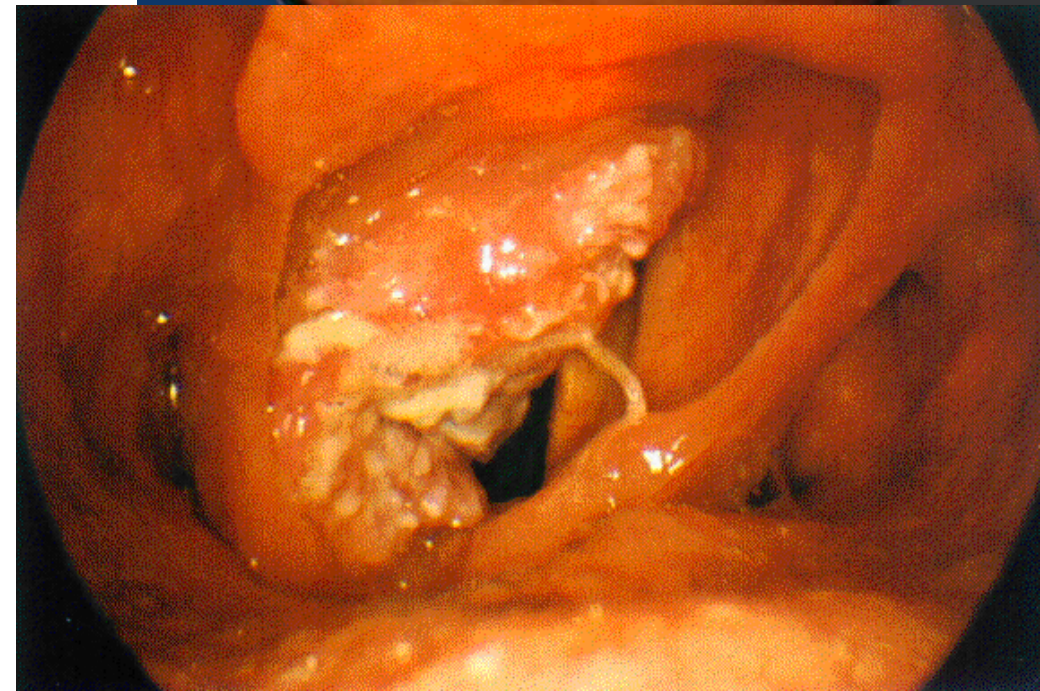
Total laryngectomy/extended total laryngectomy

Supraglottic cancer

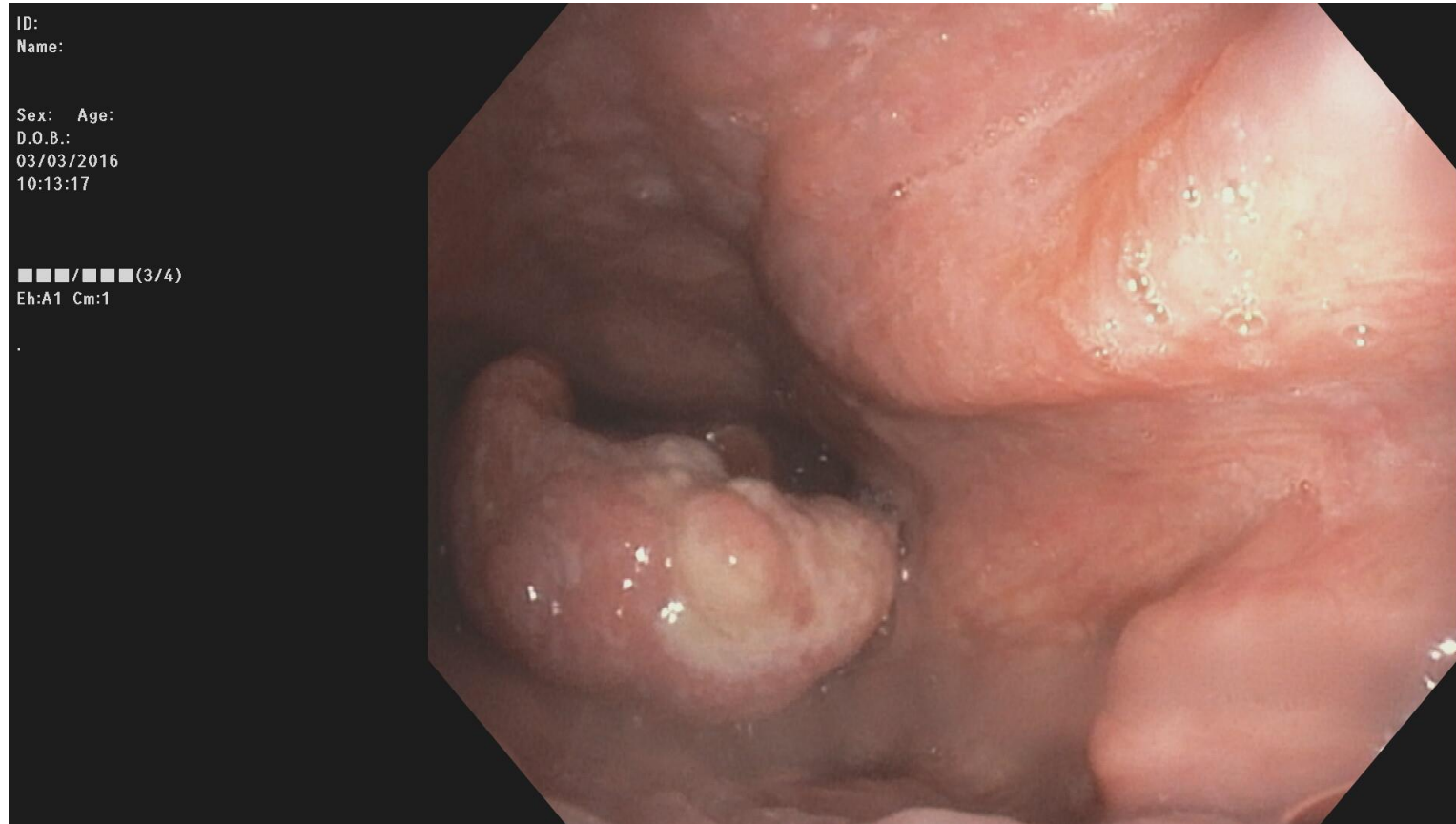
Cancer of right
aryepiglottic fold



Cancer of right
ventricular fold

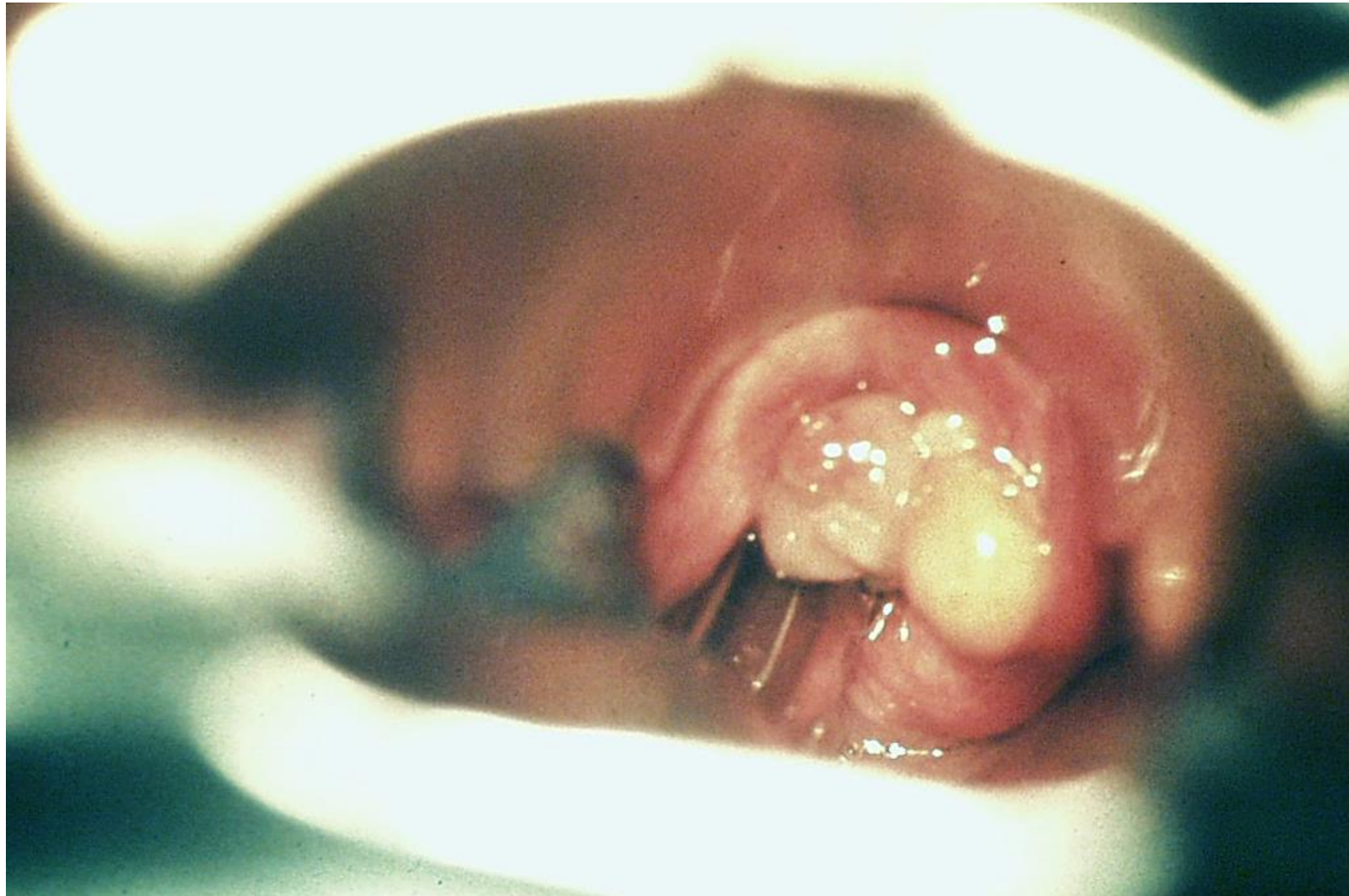


Cancer of supraglottis (epiglottis) T₂



Cancer of supraglottis (epiglottis) T₂

in direct laryngoscopy





NCCN Guidelines Version 2.2017 Cancer of the Glottic Larynx

WORKUP^a

- H&P^{b,c} including a complete head and neck exam; mirror and/or fiberoptic examination as clinically indicated
- Biopsy of primary site or FNA of the neck
- Chest CT (with or without contrast) as clinically indicated^d
- CT with contrast and thin angled cuts through larynx and/or MRI with contrast of primary and neck
- Consider FDG-PET/CT for stage III-IV disease
- EUA with endoscopy
- Preanesthesia studies
- Dental evaluation as clinically indicated^e
- Nutrition, speech and swallowing evaluation/therapy, and audiogram as clinically indicated^f
- Consider videostrobe for select patients
- Consider pulmonary function tests for conservation surgery candidates

Multidisciplinary consultation as clinically indicated

CLINICAL STAGING

Carcinoma in situ

Amenable to larynx-preserving (conservation) surgery (T1-T2 or Select T3)

T3 requiring (amenable to) total laryngectomy (N0-1)

T3 requiring (amenable to) total laryngectomy (N2-3)

T4a disease

T4b, any N or Unresectable nodal disease or Unfit for surgery

Metastatic (M1) disease at initial presentation

TREATMENT OF PRIMARY AND NECK

[See Treatment \(GLOT-2\)](#)

[See Treatment \(GLOT-2\)](#)

[See Treatment of Primary and Neck \(GLOT-3\)](#)

[See Treatment of Primary and Neck \(GLOT-4\)](#)

[See Treatment of Primary and Neck \(GLOT-6\)](#)

[See Treatment of Very Advanced Head and Neck Cancer \(ADV-1\)](#)

[See Treatment of Very Advanced Head and Neck Cancer \(ADV-2\)](#)

^aComplete workup may not be indicated for Tis, T1, but history and physical examination and biopsy are required. Direct laryngoscopy under anesthesia is generally recommended for all cases.

^bH&P should include documentation and quantification (pack years smoked) of tobacco use history. Smoking cessation counseling as clinically indicated. All current smokers should be advised to quit smoking, and former smokers should be advised to remain abstinent from smoking. For additional cessation support and resources, smokers can be referred to the [NCCN Guidelines for Smoking Cessation](#) and www.smokefree.gov.

^cScreen for depression ([See NCCN Guidelines for Distress Management](#)).

^dChest CT is recommended for advanced nodal disease to screen for distant metastases, and for select patients who smoke to screen for lung cancer. [See NCCN Guidelines for Lung Cancer Screening](#).

^e[See Principles of Dental Evaluation and Management \(DENT-A\)](#).

^f[See Principles of Nutrition: Management and Supportive Care \(NUTR-A\)](#).

Note: All recommendations are category 2A unless otherwise indicated.

Clinical Trials: NCCN believes that the best management of any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.

Surgery of laryngeal tumors - indications

Endoscopic methods (TLM, TORS)

- Tis or T1

Laryngophissura with chordectomy

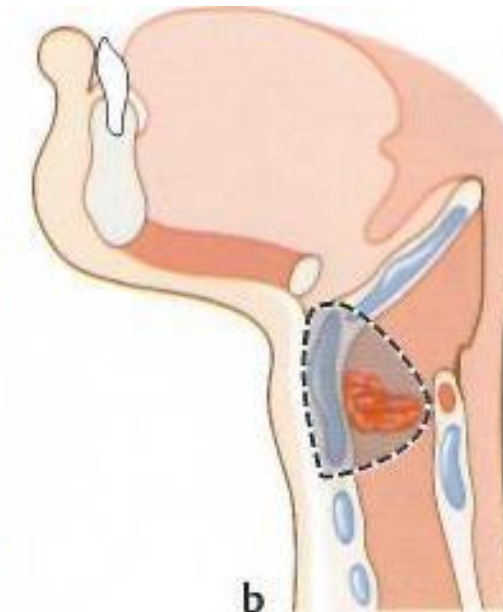
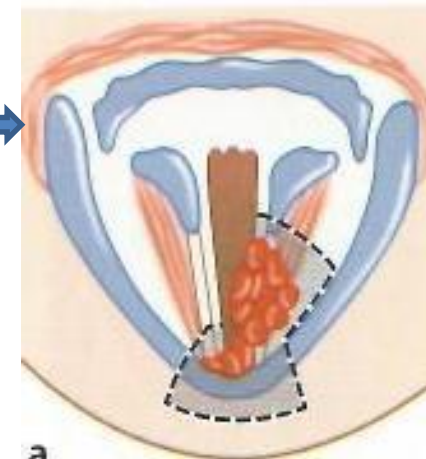
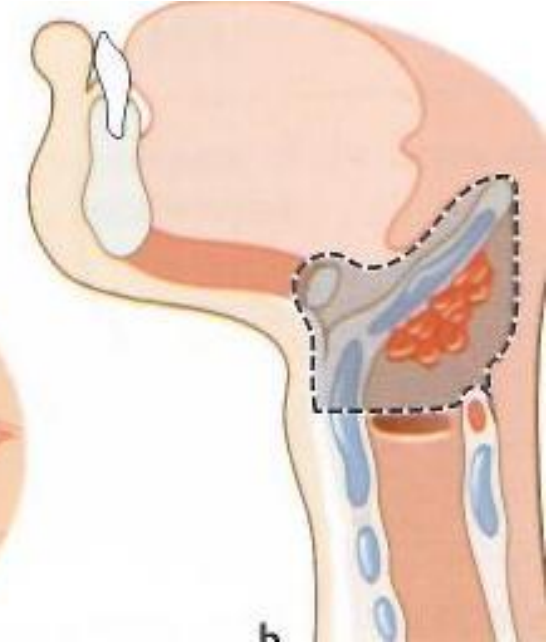
- T1

Horizontal partial laryngectomy (supraglottic, Allonzo 1937)

- T1-2 tumors, supraglottic larynx incl. aryepiglottic and ventricular folds and preepiglottic space

Partial frontolateral laryngectomy

- T2 tumors glottis



Indications for transoral laser micro-surgery supra glottis

- Ca supraglottic early stage inside borders of supraglottic larynx and preepiglottic space.
- Small to middle advanced tumor; **Tis,T1,T2** and **selected cases T3** (limited spread into preepiglottic space).
- age
- Pulmonary functions
- Comorbidities
- Social relations, family, patient's wish

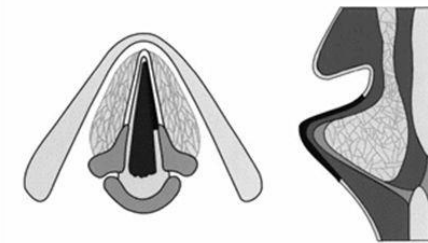


Fig. 1a, b Subepithelial cordectomy (type I)

Type I



Fig. 2a, b Subligamental cordectomy (type II)

Type II

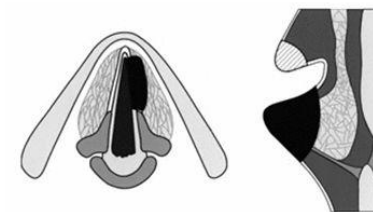


Fig. 3a, b Transmuscular cordectomy (type III). In order to expose the entire vocal fold, partial resection of the ventricular fold may be necessary (hatched area)

Type III

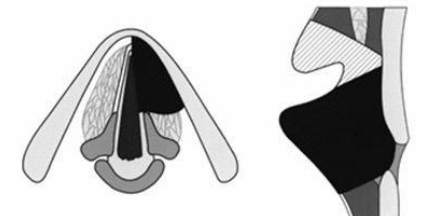


Fig. 4a, b Total or complete cordectomy (type IV). The ipsilateral ventricular fold can be removed partially or totally to ensure complete resection of the vocal fold (hatched area)

Type IV

Ca spino plicae vocalis l.dx. cT2

6 months after RT

**Narrow Band Imaging (NBI) – better
depiction of capillary net**

ID:

Name:

Sex: Age:

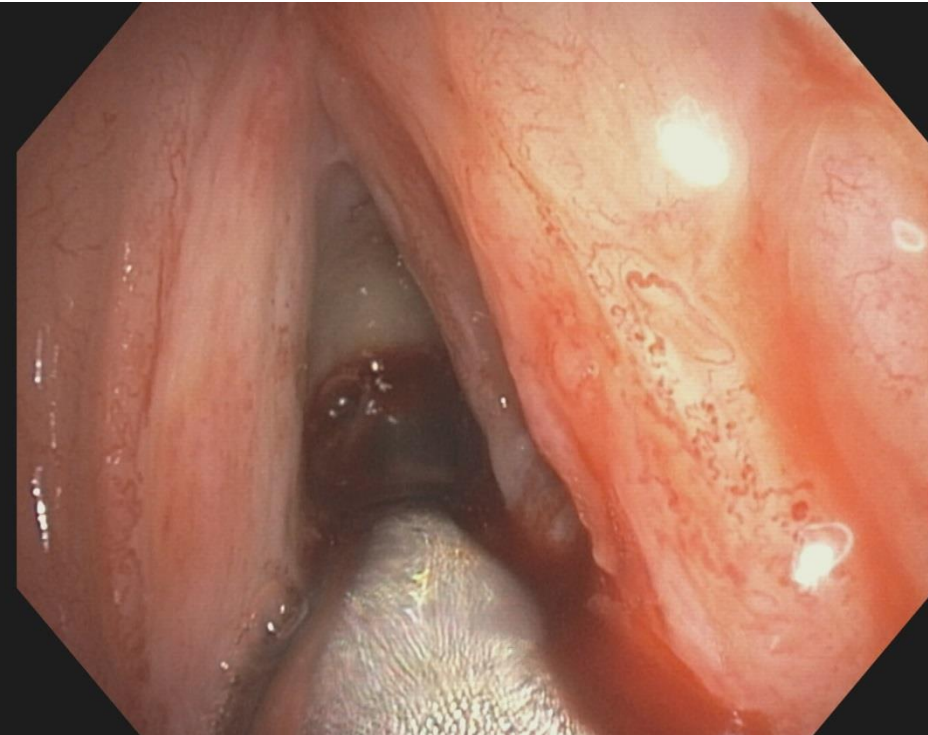
D.O.B.:

04/03/2016

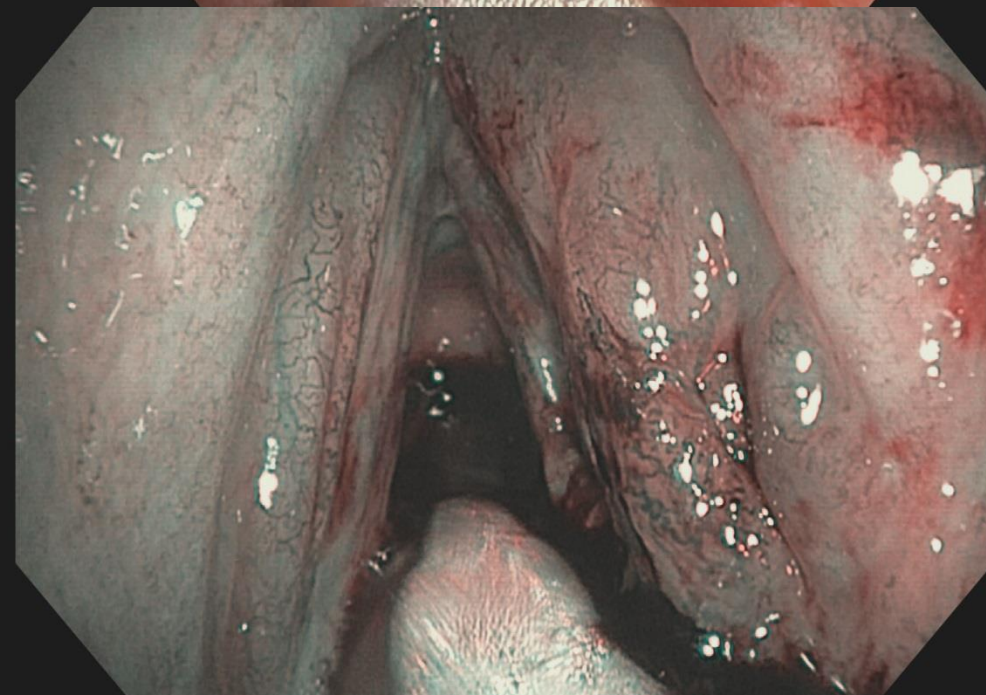
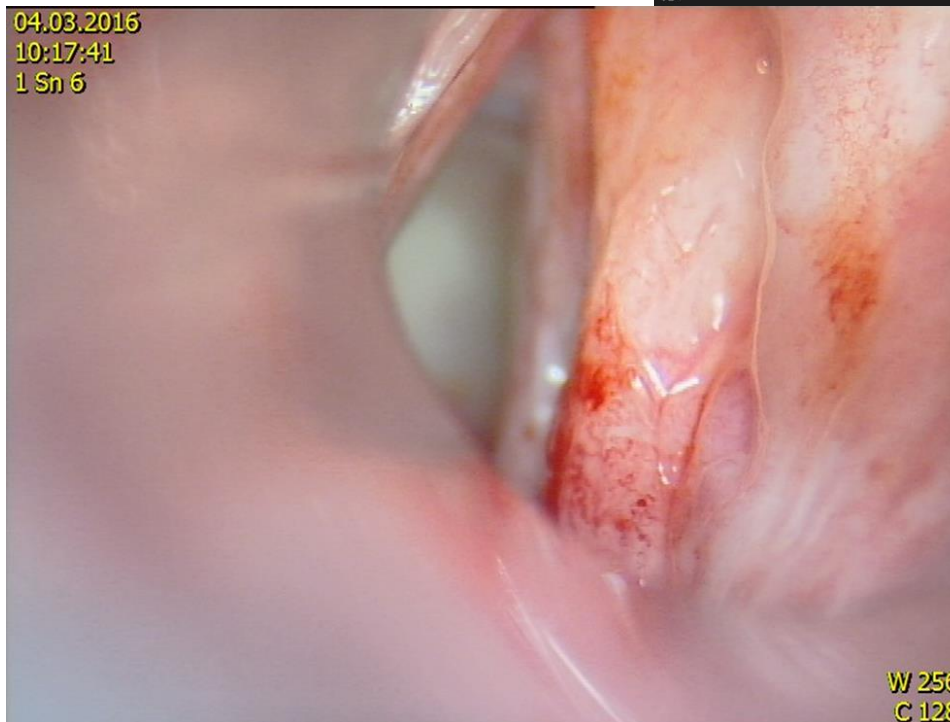
09:21:46

■■■■/■■■■(3/4)

Eh:A1 Cm:1



ID:





Surgery of advanced laryngeal tumors - indications

Total laryngectomy

- T3-4 tumors, breathing is only possible via the tracheostomy

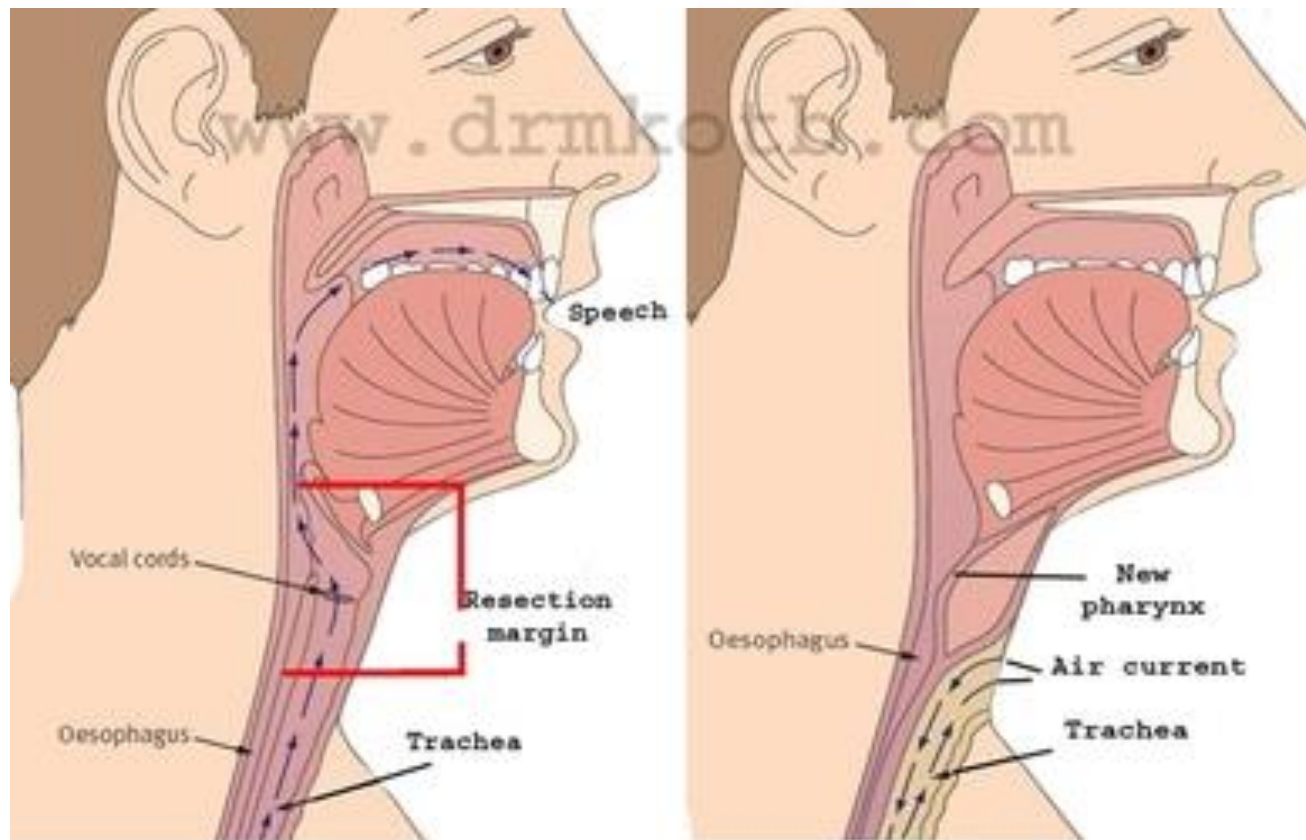
Total laryngectomy with removal of the pharynx

- Extended about piriform sinus

Organ saving protocols

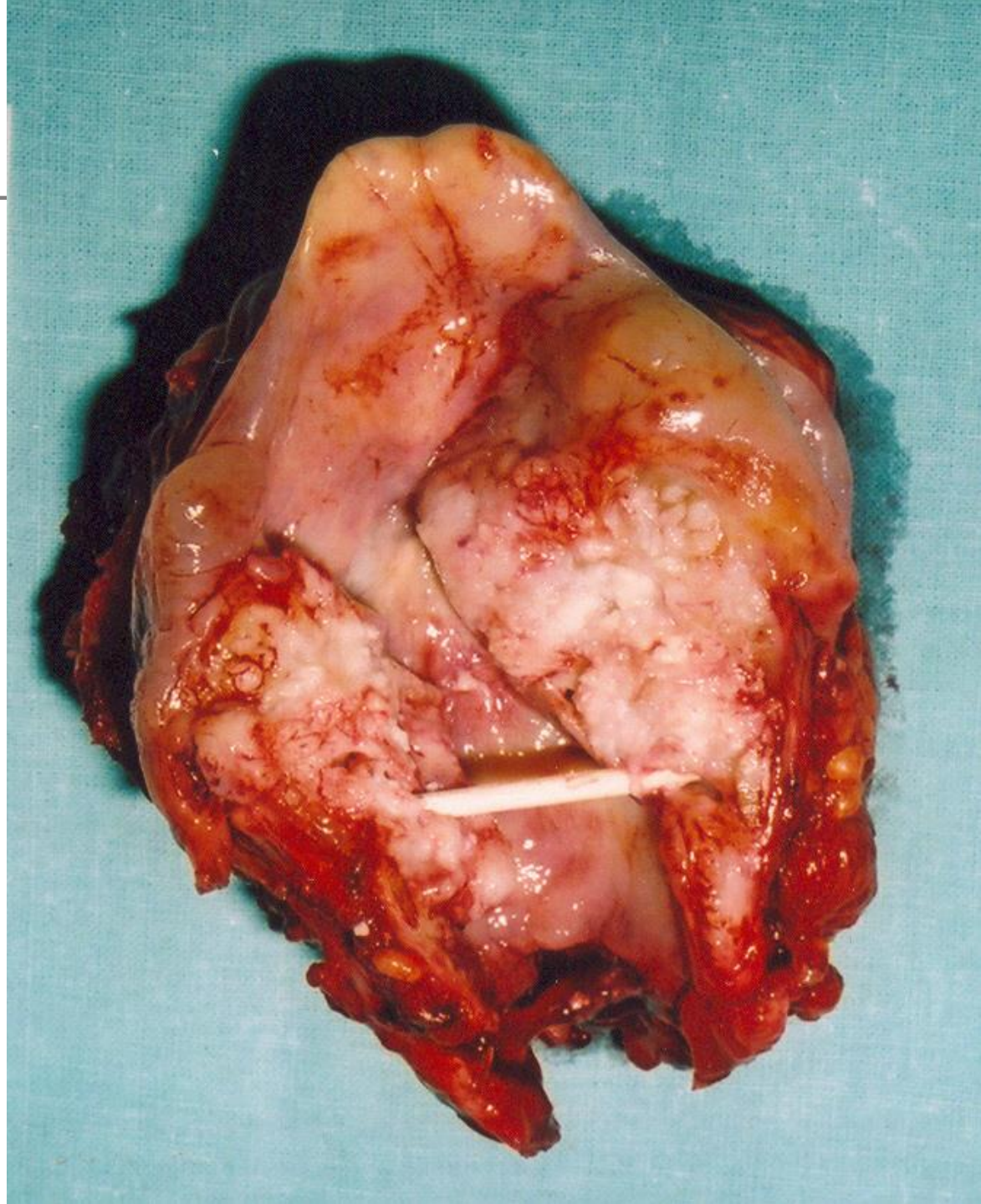
- Combined not surgical treatment - Radiotherapy, chemotherapy, targeted („biologic“) treatment, monoclonal antibodies

Total laryngectomy



Total laryngectomy

Ca spino
laryngis glottic
form
pT4 pN0 M0







Subglottic carcinoma

**In the case, that it is find out in resectable stage,
every time it is treated by surgery.**

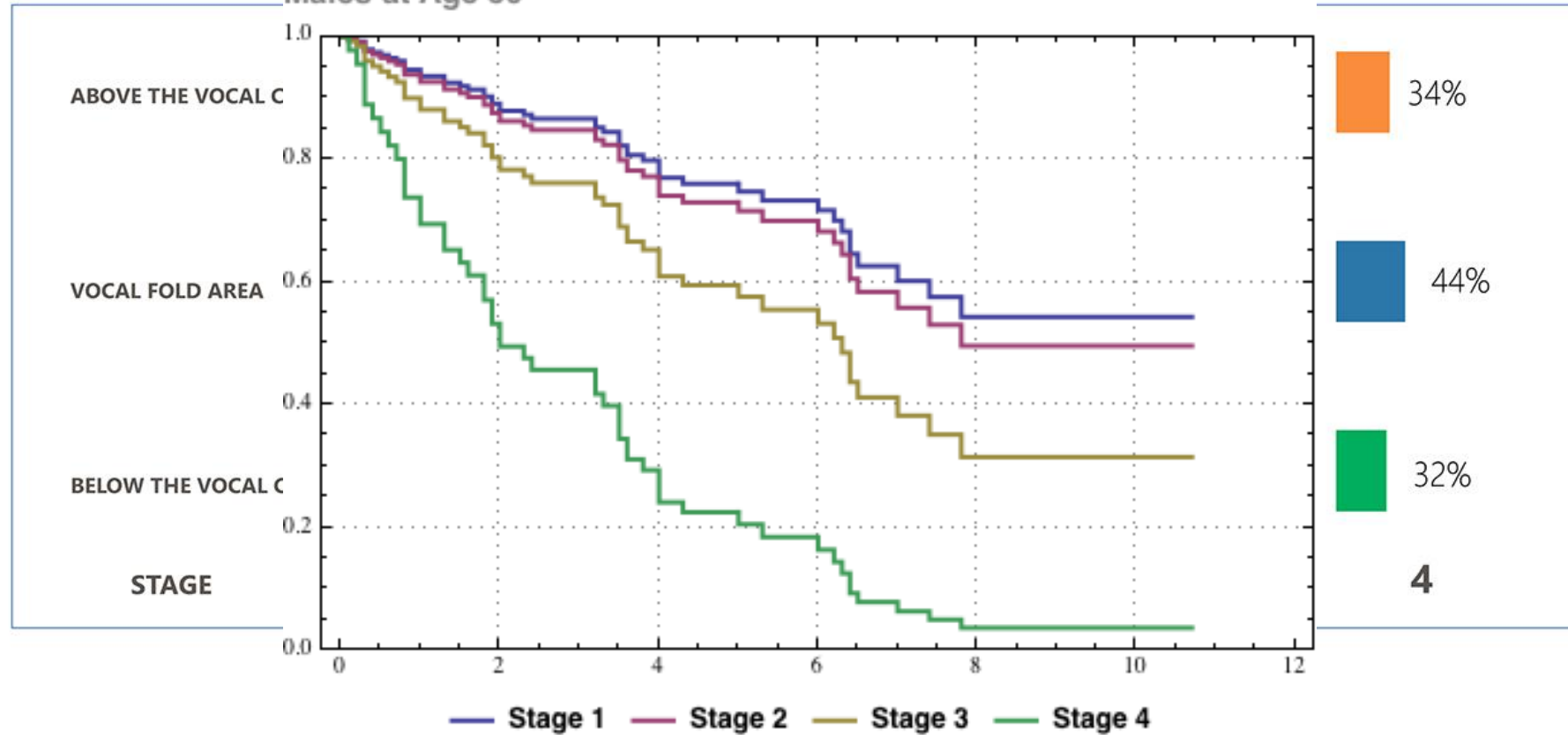
**Inoperable stage of all sites – palliative
radiotherapy.**



Prognosis of laryngeal cancer

Larynx Cancer Survival by Stage

Males at Age 50



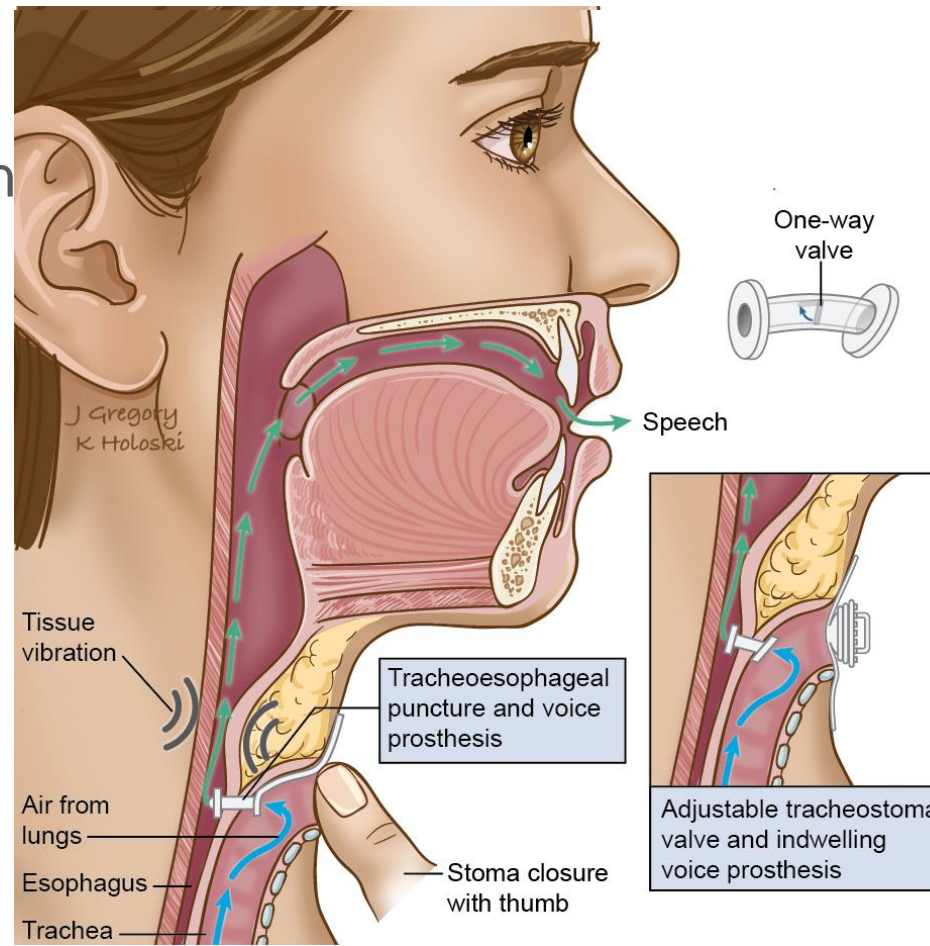
Rehabilitation after laryngectomy

Partial laryngectomy

Hoarseness, aspiration – rehabilitation
of swallowing

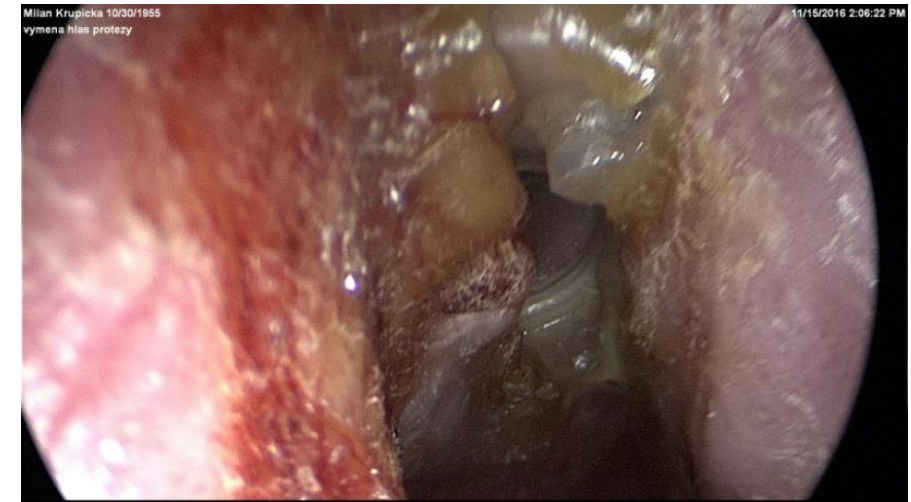
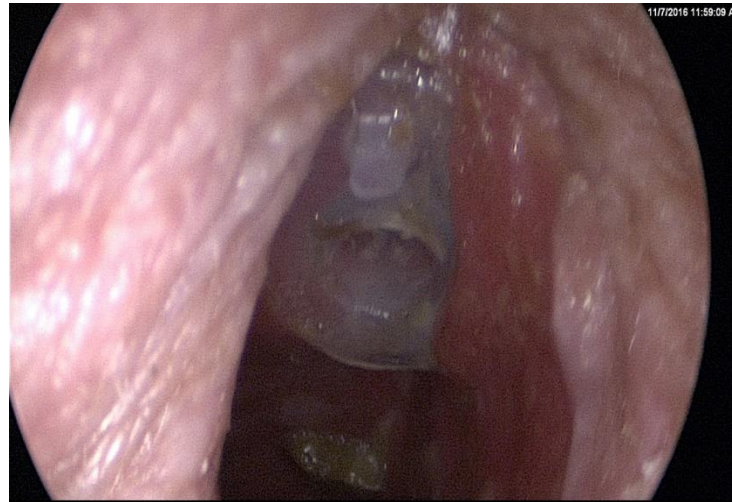
Total laryngectomy

- Rehabilitation of smell
- Voice:
 - Esophageal speech
 - Electrolarynx
 - Voice prosthesis



Voice prosthesis

- Introduction into tracheostoma – primary or secondary
- Complication – fungal infection, leak, granulations, displacement of prosthesis



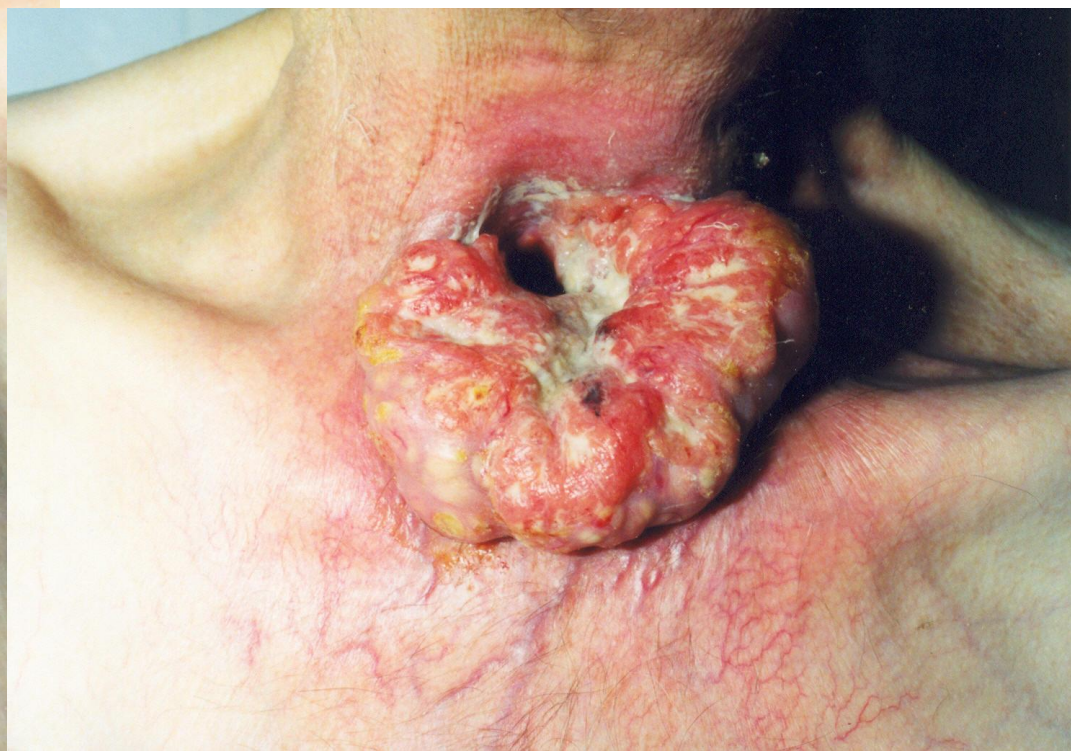
Voice rehabilitation

Elektrolarynx, arteficial larynx generator of vibration, produce mechanical sound, this sound is articulated by the tongue, lips and teeth as understandable speech





Laryngeal cancer – local recurrences





Ca spino oro- et
hypopharyngis l.sin.
cum meta colli
Reccurentio (1 year
after neck dissection)





what we should do

- ✓ **Prevention**
- ✓ **Early detection of tumors**
- ✓ **Prognosis depends on general status of patient before treatment (alimentation)**
- ✓ **Management – evaluation and treatment in the as short as possible time (ultrasound, stomatology evaluation)**

Early detection of oncologic disease

- ✓ Not healing efflorescence on the skin
- ✓ One side nose blocking, recurrent epistaxis
- ✓ Asymmetry in the region of isthmus faucium
- ✓ Hoarseness in risk group of inhabitants lasting longer time as 14 days should be evaluated by otolaryngology physician
- ✓ Feeling of foreign body in the throat
- ✓ Neck mass

