

Managing Early Laryngeal and Hypopharyngeal Cancer

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Early cancers?

- Early laryngeal cancers present with hoarseness
- Lymphatic drainage is poor so 'occult metastatic' rate is low
- Larynx is a complex organ critical to speech and swallowing
- Preservation of function is important
- Hypopharyngeal cancers grow silently and present late
- Lymphatic drainage to retropharyngeal plexus of nodes is rich
- It is largely a simple conduit to the passage of food
- Preservation of form is important

Larynx cancer in Peninsular Malaysia

Table 58 : **Larynx** Cancer Incidence per 100,000 population (CR) and Age-standardized incidence (ASR), by sex, Peninsular Malaysia 2006

Sex	No.	%	CR	ASR
Male	183	84.7	1.8	2.5
Female	33	15.3	0.3	0.4
Both	216	100	1.1	1.4

Table 60 : **Larynx** Cancer Incidence per 100,000 population (CR) and Age-standardized incidence (ASR), by ethnicity and sex, Peninsular Malaysia 2006

Ethnic group	Male				Female			
	No.	%	CR	ASR	No.	%	CR	ASR
Malay	63	37.7	1	1.7	16	53.3	0.3	0.4
Chinese	77	46.1	2.9	2.9	6	20	0.2	0.2
Indian	27	16.2	3	4.4	8	26.7	0.9	1.2

The ASR for hypopharyngeal cancer is 0.2 in both sexes

Indians have highest rate at 0.8

Organ preservation diminishes survival

The Laryngoscope
Lippincott Williams & Wilkins, Inc.
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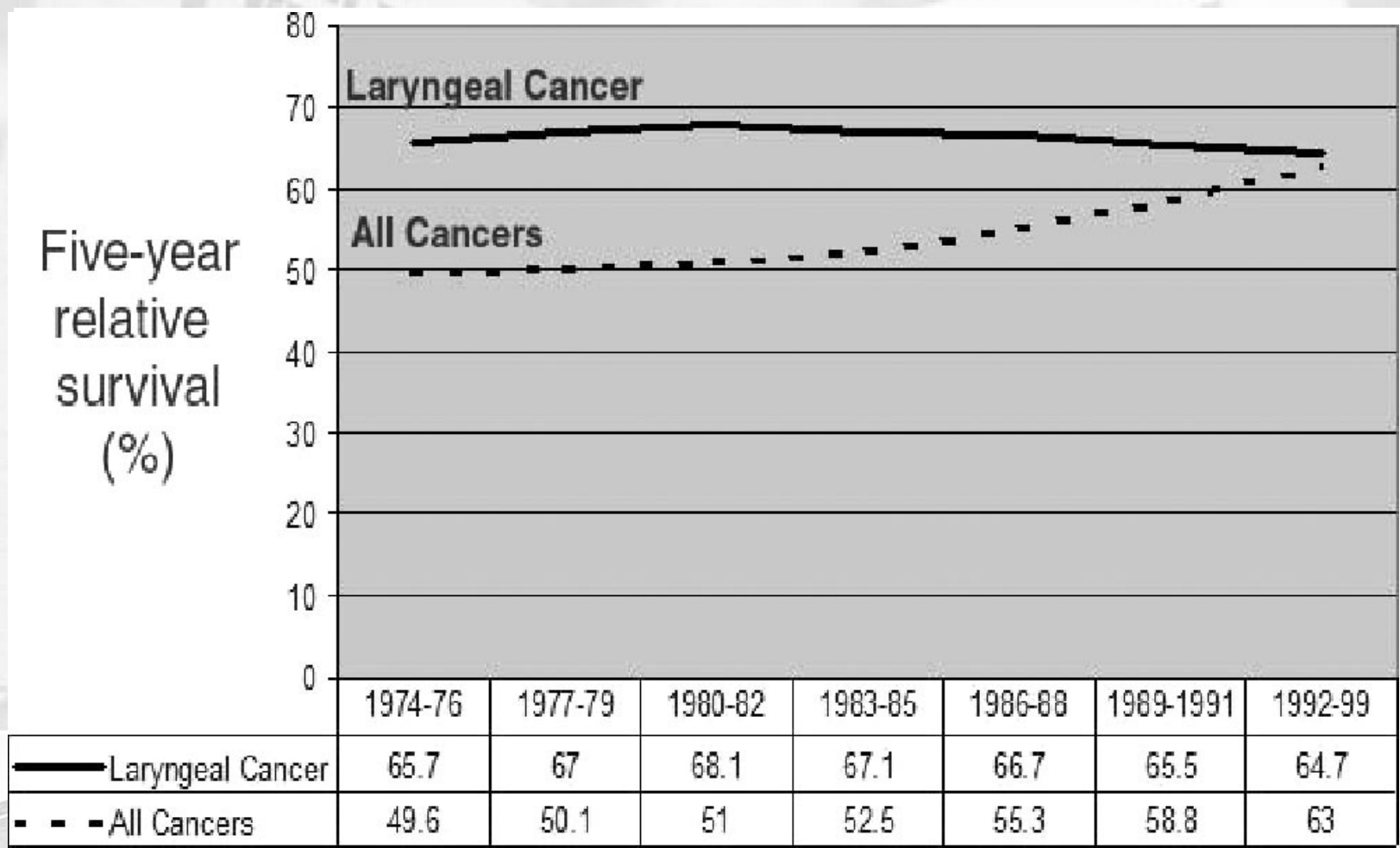
Laryngeal Cancer in the United States: Changes in Demographics, Patterns of Care, and Survival

Henry T. Hoffman, MD, MS, FACS; Kimberly Porter, MPH; Lucy H. Karnell, PhD; Jay S. Cooper, MD; Randall S. Weber, MD; Corey J. Langer, MD; Kie-Kian Ang, MD, PhD; Greer Gay, PhD; Andrew Stewart, MA; Robert A. Robinson, MD, PhD

Background: Survival has decreased among patients with laryngeal cancer during the past 2 decades in the United States. During this same period, there has been an increase in the nonsurgical treatment of laryngeal cancer. **Objective:** The objectives of this study were to identify trends in the demographics, management, and outcome of laryngeal cancer in the United States and to analyze factors contributing to the decreased survival. **Study Design:** The authors conducted a retrospective, longitudinal study of laryngeal cancer cases. **Methods:** Review of the National Cancer Data Base (NCDB) revealed 158,426 cases of

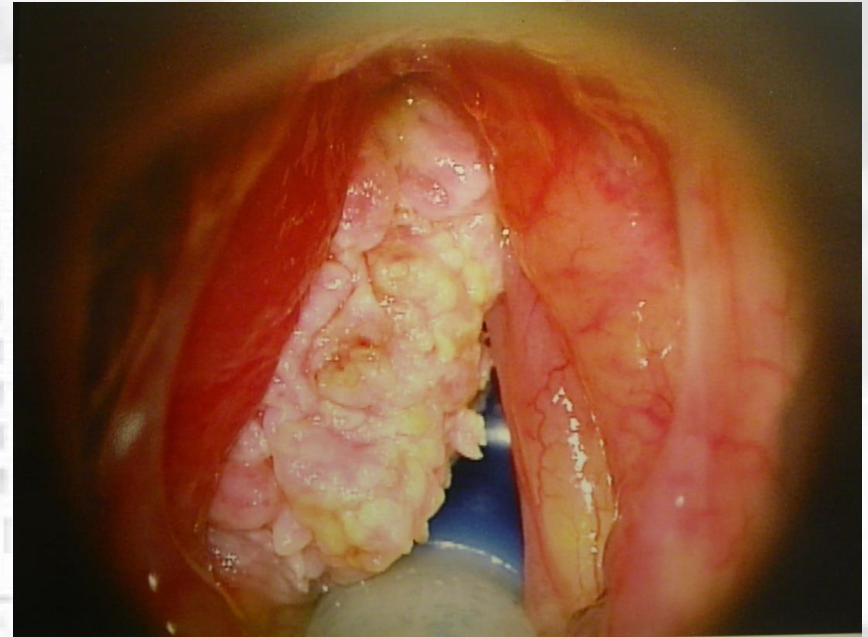
glottic cancers classified as T3N0M0. Initial treatment of T3N0M0 laryngeal cancer (all sites) in the 1994 to 1996 period resulted in poor 5-year relative survival for those receiving either chemoradiation (59.2%) or irradiation alone (42.7%) when compared with that of patients after surgery with irradiation (65.2%) and surgery alone (63.3%). In contrast, identical 5-year relative survival (65.6%) rates were observed during this same period for the subset of T3N0M0 glottic cancers initially treated with either chemoradiation or surgery with irradiation. **Conclusions:** The decreased survival recorded for patients with laryngeal cancer

Organ preservation diminishes survival



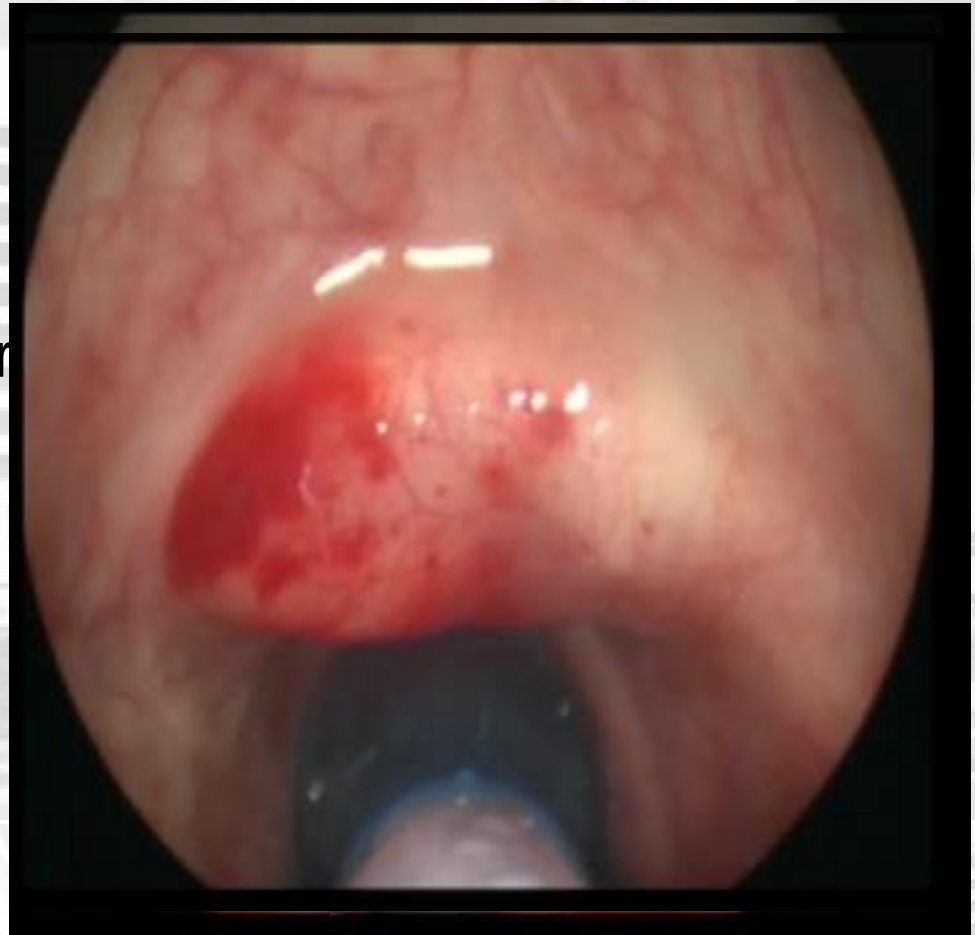
Meticulous assessment is important

- History, focus on symptoms of dysphonia, dyspnoea, stridor, dysphagia, aspiration, pain
- Office examination
 - Larynx / Pharynx
 - Neck
- Panendoscopy & ELMs
- Imaging



Panendoscopy and ELMs

- Neck and oral palpation.
Assess tongue base
- Rigid oesophagoscopy
 - Turn scope to allow for examination of pyriform fossae
- ELMs with photos
 - 0, and angled 30 and 70 degree telescopes
 - Subglottic extension



Regions of the larynx

- Supraglottis
 - 5 parts: suprahypoid and infrahypoid epiglottis, false cords, aryepiglottic folds, arytenoids
- Glottis
 - True vocal cords, floor of ventricle and region 5 mm below true vocal cords or 1 cm below lateral border of ventricle
 - 3 parts: true cords, anterior commissure and ventricle
- Subglottis
 - Region beyond 5 mm below true vocal cords or 1 cm below lateral border of ventricle to lower border of cricoid ring

Table 1. T staging for laryngeal cancers

Supraglottis

- T1** Tumour limited to one subsite of supraglottis with normal vocal cord mobility
 - T2** Tumour invades mucosa of more than one adjacent subsite of supraglottis or glottis or region outside the supraglottis (e.g., mucosa of base of tongue, vallecula, medial wall of piriform sinus) without fixation of the larynx
 - T3** Tumour limited to larynx with vocal cord fixation and/or invades any of the following: postepiglottic area, pre-epiglottic tissues, paraglottic space, and/or with minor thyroid cartilage erosion (e.g., inner cortex)
 - T4a** Tumour invades through the thyroid cartilage and/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, oesophagus
 - T4b** Tumour invades prevertebral space, mediastinal structures, or encases carotid artery
-

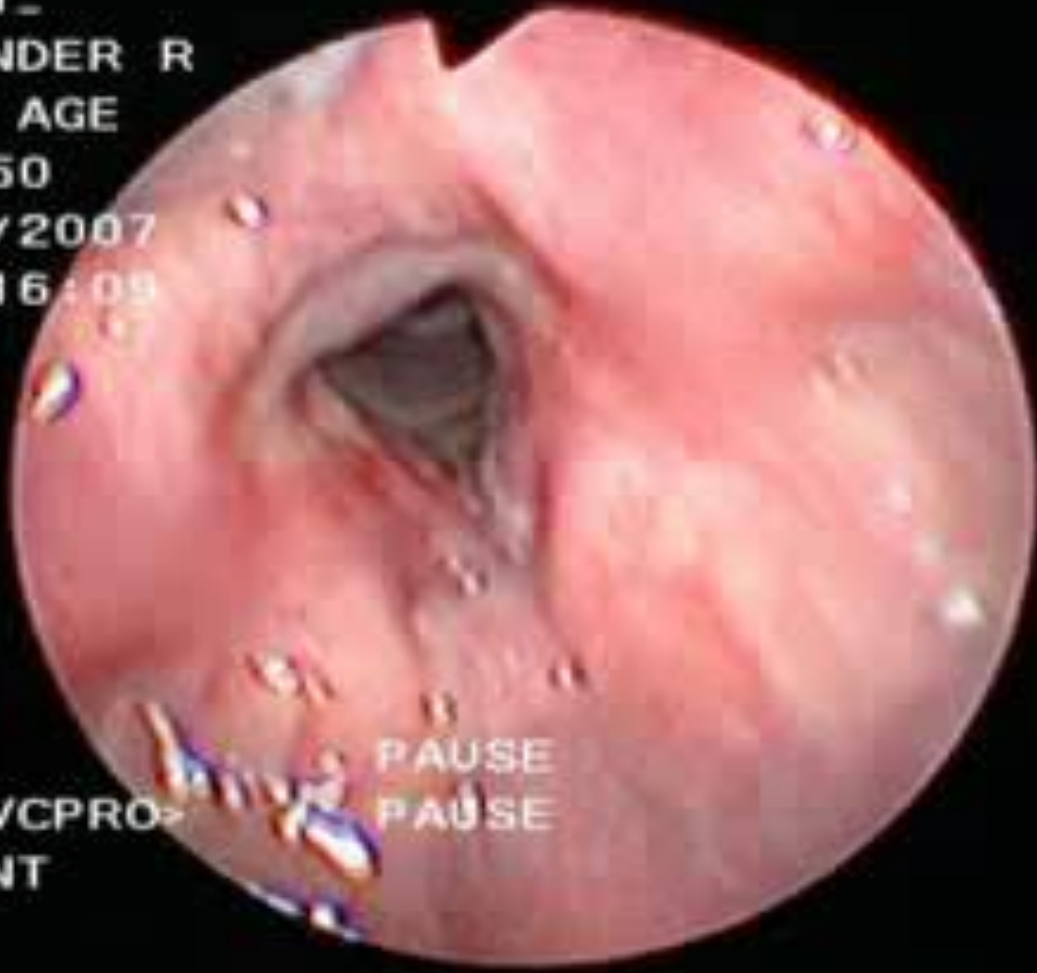
Glottis

- T1** Tumour limited to vocal cord(s) (may involve anterior or posterior commissure) with normal mobility
 - T1a.** Tumour limited to one vocal cord
 - T1b.** Tumour involves both vocal cords
- T2** **T2a.** Tumour extends to supraglottis and/or subglottis with normal vocal cord mobility
T2b. Tumour extends to supraglottis and/or subglottis 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)
- T4a** Tumour 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, oesophagus

Imaging

- Contrast-enhanced CT of the larynx and thorax for all patients
- No need for bone scans / liver ultrasound
- MRI is fast becoming modality of choice but problems with
 - Movement artefact
 - Cost
- For the hypopharynx, MR is modality of choice (Royal College of Radiologists, UK)

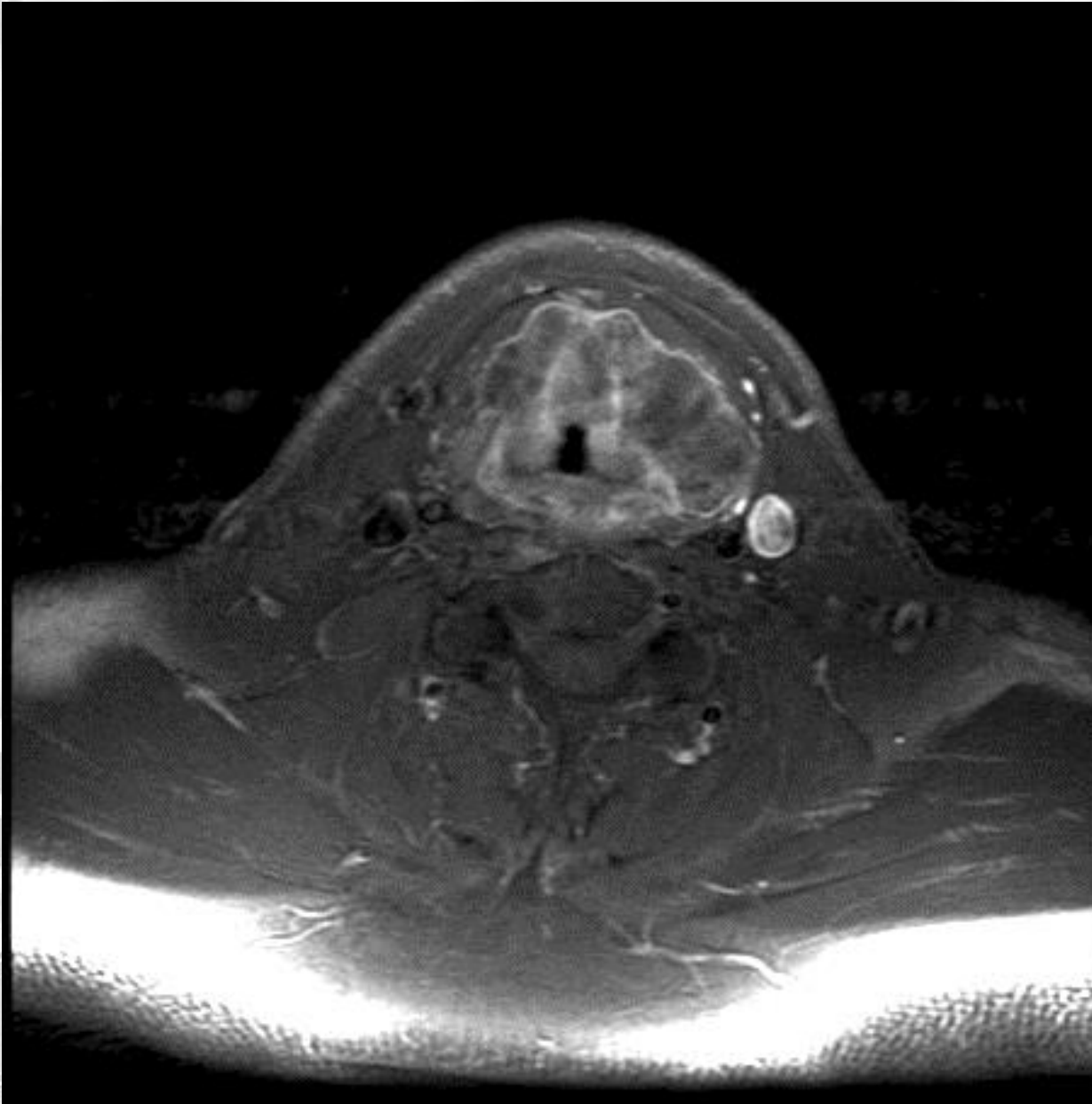
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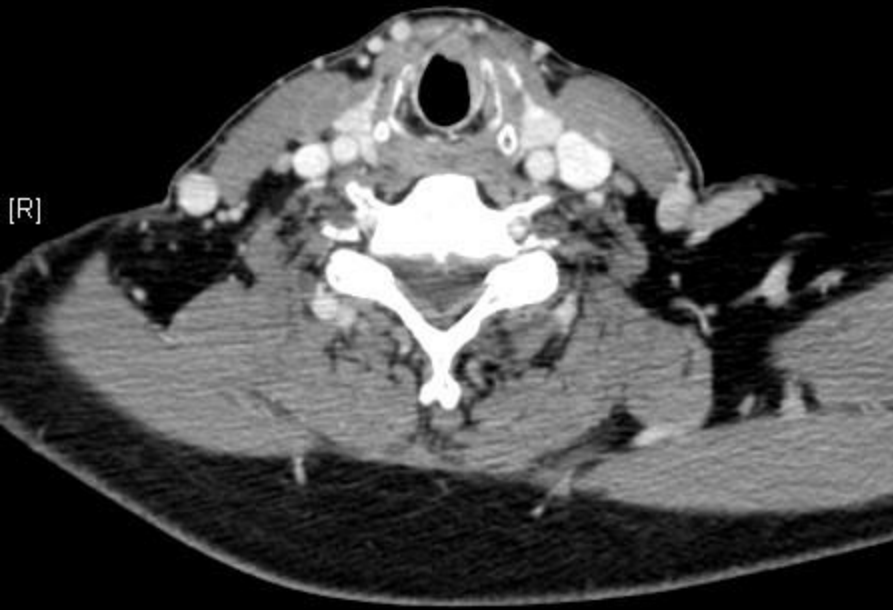
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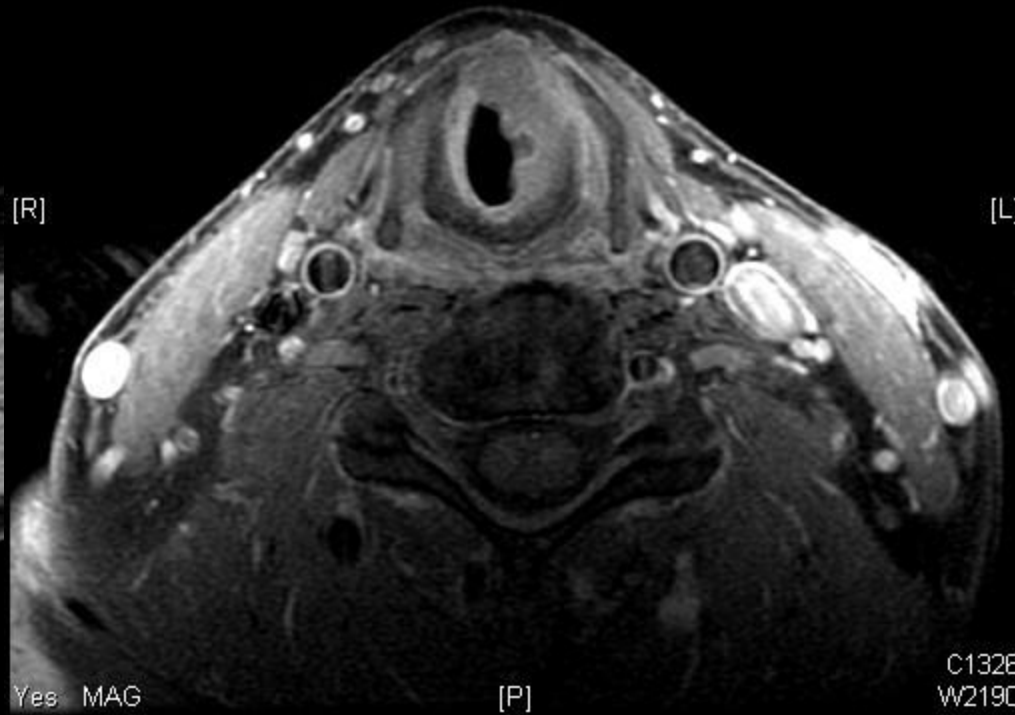
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Early hypopharyngeal cancers often missed on CT



Early hypopharyngeal cancers often missed on CT



Early hypopharyngeal cancers often missed on CT



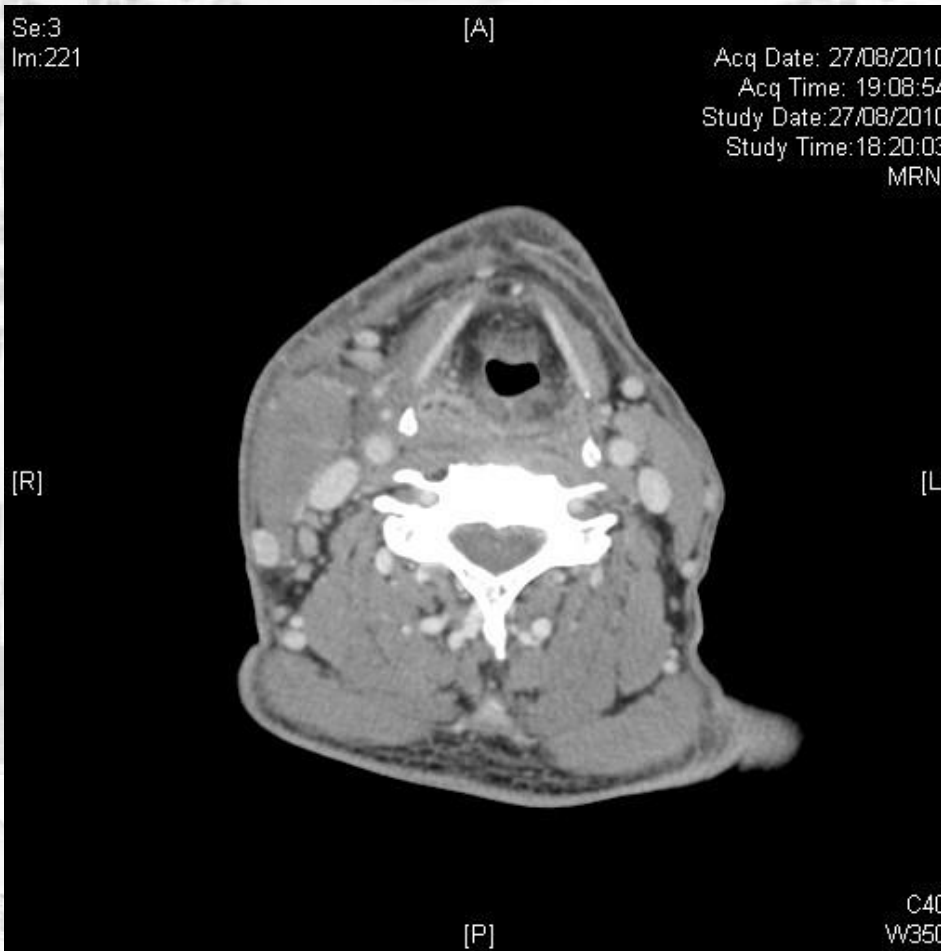
Early hypopharyngeal cancers often missed on CT



Early hypopharyngeal cancers often missed on CT



Early hypopharyngeal cancers often missed on CT



Careful examine the hypopharynx

- Sit patient up in the 'sniffing the air' position
- Valsalva or whistle to open up the pharynx
- Observe for any pooling
- Transnasal oesophagoscopy can be useful

HPV and laryngeal cancer?

- Retrospective study in Detroit
- Up to 27%
- Appears to have no effect on survival

Tumour biology

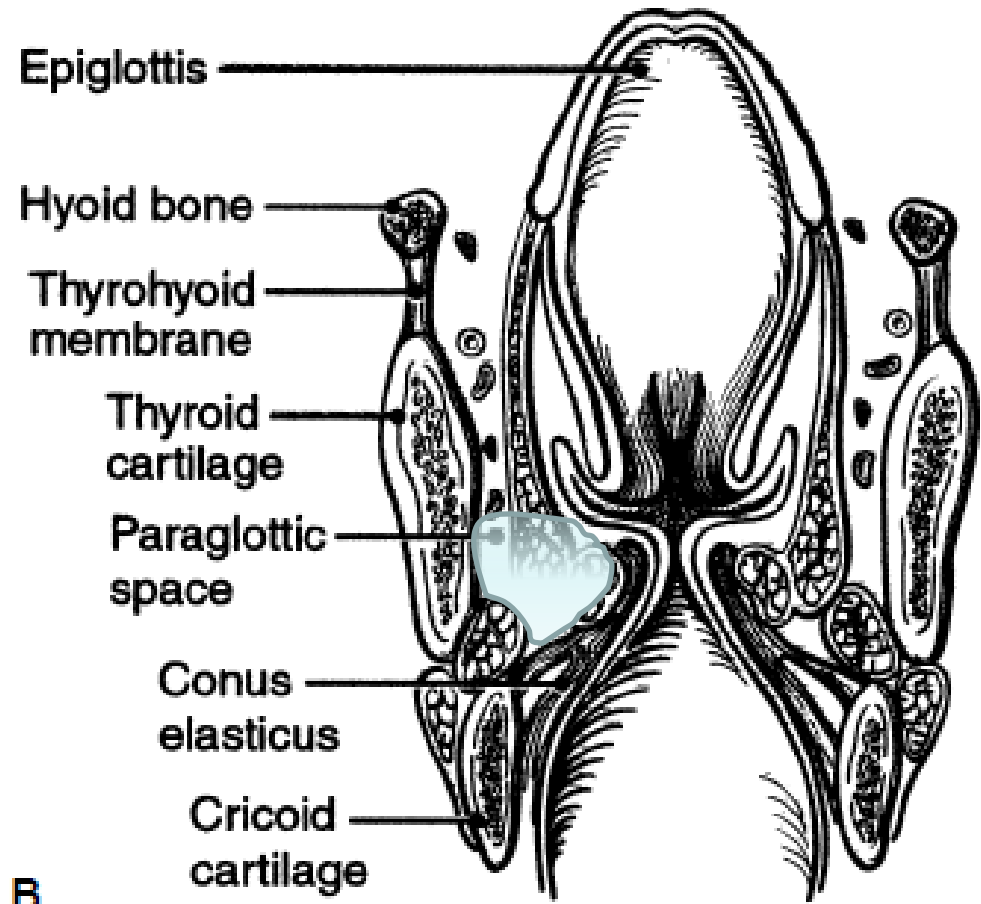
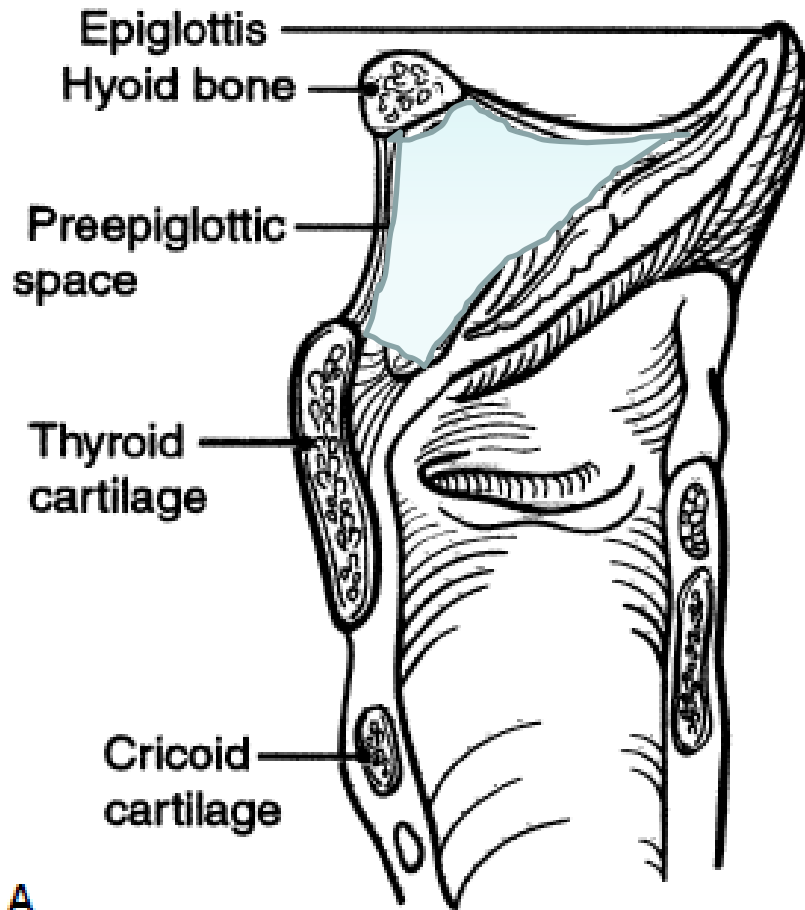


Figure 8-2. A, Sagittal section of larynx demonstrating the preepiglottic and B, coronal section of larynx demonstrating the paraglottic space.

Treatment

- Glottic
- Supraglottic
- Subglottic

Glottic - early stage (T1 -2a)

- T1-T2 disease should be treated with either radiation or larynx preserving surgery (transoral laser or open partial laryngeal surgery)
- Surgery should be with the aim of achieving clear margins
- Avoid combined modality therapy
- Usual RT is 50-52 Gy in 16# or 53-55 Gy in 20#
- No need for elective treatment of nodes
- Local control rates for T1a (90-93%) and T1b (85-89%) at 5 years

Larynx-preserving surgery

- Transoral Laser
- Vertical Partial Hemilaryngectomy
- Fronto-lateral Partial Hemilaryngectomy
- Supraglottic Laryngectomy
- Supracricoid Laryngectomy + CHP /
CHEP

Transoral Laser Surgery

- Utilises Carbon Dioxide laser beam to resect tumour
- Offers a quick alternative to radiotherapy
- Is organ sparing
- Useful in managing laryngeal recurrence



Fig. 1

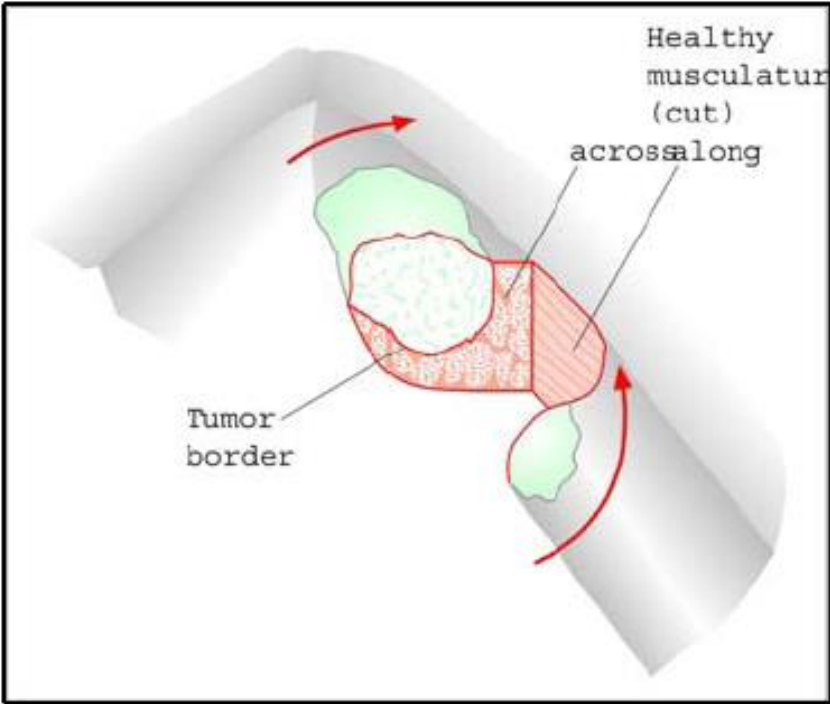
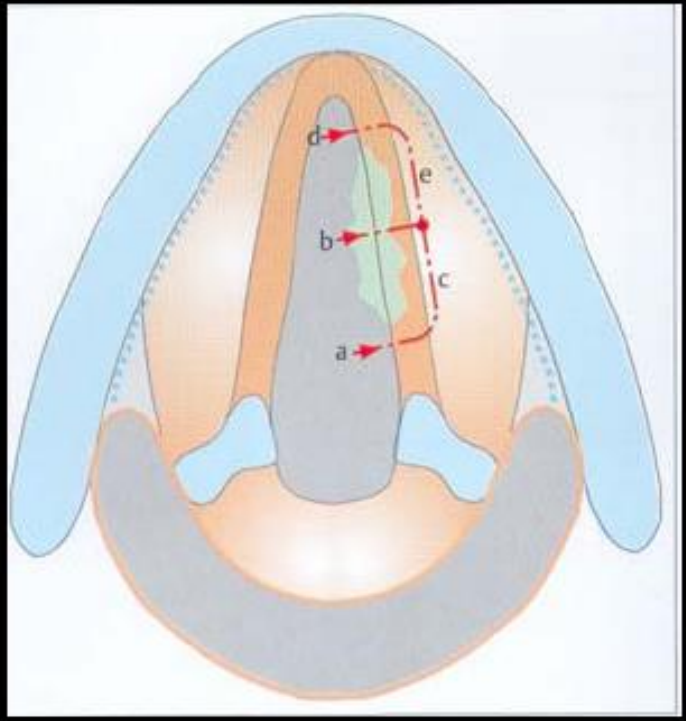


Fig. 2



Results of 333 cases of vocal cord carcinomas pT1a (1979 - 2001)

Tumor extent: more than 1/3 of the vocal cord: 68%; anterior commissure involvement: 22%; only midcordal lesion: 14%.
Complication rate: 1.2% (postoperative hemorrhage 2, edema 2; no tracheostomy, no feeding tube)
Median follow-up: 72 months

Table 1: Oncologic Results of Laser Microsurgery for pT1a vocal cord carcinomas (n=333)

5 yrs Kaplan-Meier local control rate	96.2%
Larynx preservation rate	97.6%
5 yrs Kaplan-Meier disease-specific survival rate	100%
5 yrs Kaplan-Meier overall survival rate	86.8%

Fig. 4

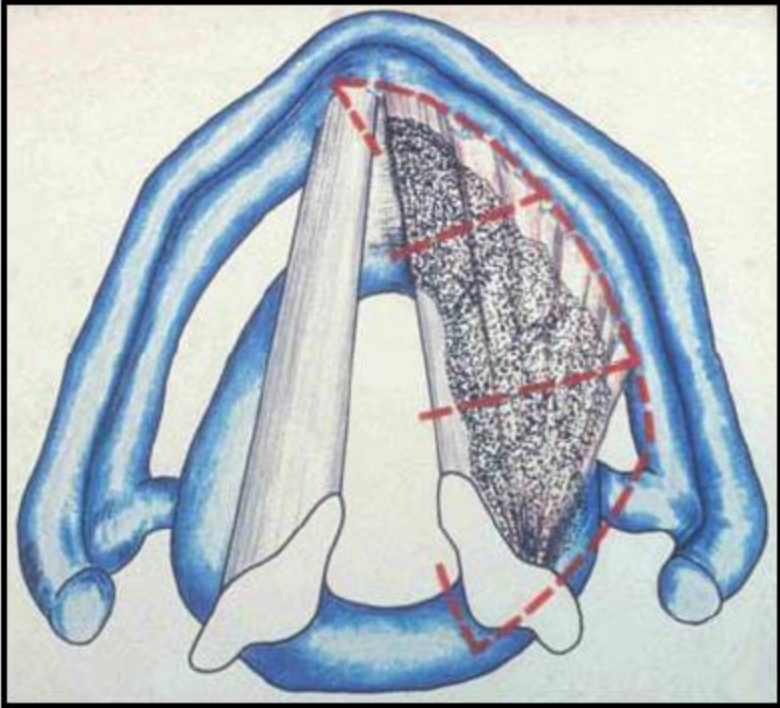
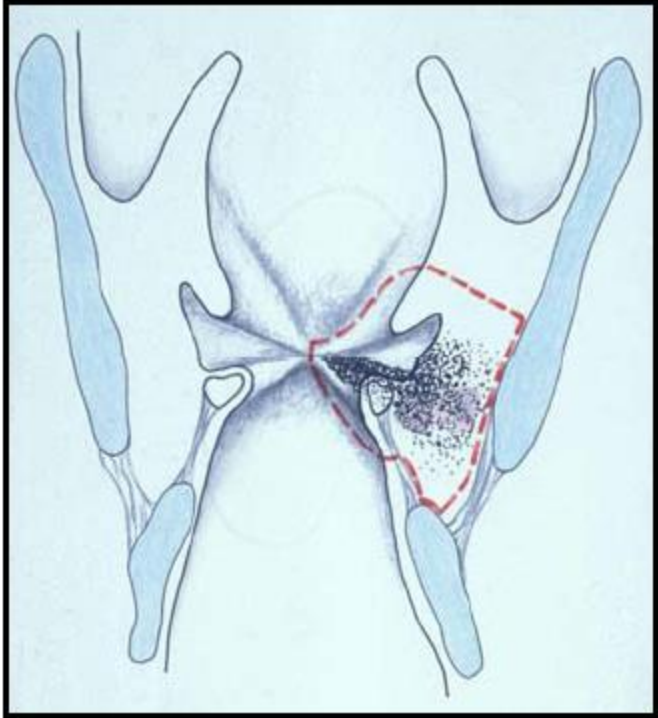


Fig. 5



Results of 338 patients with pT2 and pT3 glottic cancer (1979 - 2001)

Stage Distribution: stage II 71%, stage III 27%, stage IV 2%

Median follow-up: 69 months

Table 3: Therapy of Glottic Carcinomas (n=338)

	pT2a (n=128)	pT2b (n=115)	pT3 (n=95)
Laser	116 (91%)	87 (76%)	42 (44%)
Laser + ND	12	15	41
Laser + RT	-	11	3
Laser + ND + RT	-	2	9

	pT2a (n=128)	pT2b (n=115)	pT3 (n=95)
5 yrs Kaplan-Meier local control rate	85%	65%	68%
5 yrs Kaplan-Meier larynx preservation rate	96%	84%	80%
5 yrs Kaplan-Meier recurrence-free survival rate	82%	61%	60%
5 yrs Kaplan-Meier overall survival rate	75%	65%	58%



DIAGNOSIS

A. LEFT VOCAL CORD TUMOUR:

* MODERATELY DIFFERENTIATED SQUAMOUS CELL CARCINOMA

* <0.5MM FROM THE DEEP MARGIN FOCALLY

B. ANTERIOR MARGIN, LEFT VOCAL CORD: NEGATIVE FOR MALIGNANCY

C. MIDDLE MARGIN, LEFT VOCAL CORD: NEGATIVE FOR MALIGNANCY

D. POSTERIOR MARGIN, LEFT VOCAL CORD: NEGATIVE FOR MALIGNANCY

E. LEFT VENTRICLE OF LEFT VOCAL CORD: NEGATIVE FOR MALIGNANCY

F. ANTERIOR COMMISURE, LEFT VOCAL CORD: NEGATIVE FOR MALIGNANCY

End of Report

Video 6

Supracricoid laryngectomy

Supraglottic - early stage

- T1-T2 disease should be treated with either radiation or larynx preserving surgery (transoral laser or supraglottic laryngectomy)
- Due to rich lymphatic supply elective treatment of the node-negative neck bilaterally is necessary

Thank You

