Attualità nella terapia integrata loco-regionale delle neoplasie delle Vie aeree digestive superiori
Taranto 12-14 gennaio, 2012

IRE
ISTITUTO NAZIONALE TUMORI
REGINA ELENA

Chirurgia di salvataggio e recupero

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La diagnosi iniziale è devastante per il Paziente

La diagnosi di recidiva raddoppia tutte le considerazioni negative del Paziente e diminuisce la fiducia nella cura

Definizione di recidiva

- Temporale (persistenza, recidiva, 2° T)
- Per sede (stessa, marginale / T, N, M)

TNM Classification of Malignant Tumors

UICC 2009 seventh edition

y Symbol
In those cases in which classification is performed during or following initial multimodality therapy, the cTNM or pTNM categories are identified by a “y” prefix (e.g. ycT2N1M0 or yp T2N2aM0)

r Symbol
Recurrent tumors are identified by the prefix “r” (e.g. rcT2N0M0 or rpT3pN1M0)

Recidiva

- Evitabile
- Inevitabile

Percorso diagnostico terapeutico

- Valutazione dei sintomi
- Diagnosi e stadiazione
- Selezione dei pazienti e dei tumori
- Programma terapeutico
- Somministrazione della cura
- Controllo e cura delle complicanze
- Valutazione della risposta del paziente al trattamento
- Controlli post terapici ed identificazione delle recidive
- Trattamento della recidiva
- Gestione dei postumi post terapici

Selezione dei pazienti per patologia associata

limita:

- l'impiego della chemioterapia
- l'impiego della chirurgia estesa

in misura minore:
la radioterapia esclusiva
la chirurgia minore

Programma terapeutico

- Evidence based medicine
- Linee guida
- Esperienza personale
- Reale possibilità della struttura di erogare il trattamento
- Preferenza dei pazienti

Somministrazione della cura
Qualità del trattamento

- Chirurgia con margini di resezione indenni (esame istologico estemporaneo intraoperatorio)
- Idonee indicazioni al trattamento delle stazioni linfonodali
- Corretta somministrazione della terapia adiuvante (intervallo temporale, dosaggio, estensione dei campi di irradiazione, scelta dei chemioterapici)
- Impiego corretto della radio/chemio-radioterapia eclusiva

Category of raccomandations: 2A

Radiotherapy (total laryngectomy not required most T1-2 N0)

glottic

T1: 66 Gy (2 X 33)

63 Gy (2.25 X 28) Yamazaki H. et al. Int J Radiat Oncol Biol Phys 2006

T2: 70 Gy (2 X 35)

79.2 (1.2 twice X 33) Trotti A. et al. Int J Radiat Oncol Biol Phys 2006

Supraglottic

T 66-70 Gy (2 X 33 or 1.2 twice X 32/33 or concom boost)

N0 50 Gy

Foote RL: Int J Radiation Oncology Biol Phys, 2007

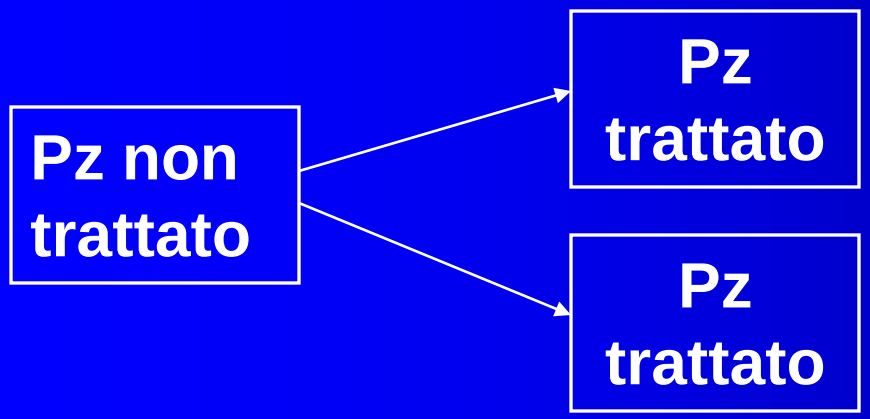
- Il recupero chirurgico delle recidive fornisce le migliori possibilità di successo nei Pazienti operabili e con tumore resecabile
- La chirurgia di recupero è spesso demolitiva
- La chirurgia di recupero può essere associata a morbidità per la cura e le eventuali complicanze, a perdita parziale o totale, ma permanente di funzione, a deformità visibile, a costi economici, ad exitus

Valore del trattamento

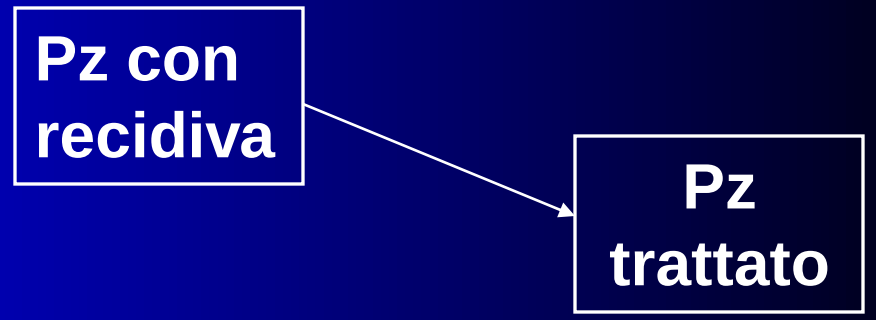
- **beneficio**
  - **durata della sopravvivenza**
  - qualità della vita (P.S. raggiunto)
- costi
  - **complicanze**
  - mortalità
  - economici (ospedalizzazione, impatto sociale)
  - non-economici (dolore, sofferenza, disagio, perdita di funzione)

QOL è il Performance Status raggiunto dopo la cura, misurato di solito con un questionario, rispetto alla valutazione di base (pre-trattamento)

TESTA-COLLO



LARINGE



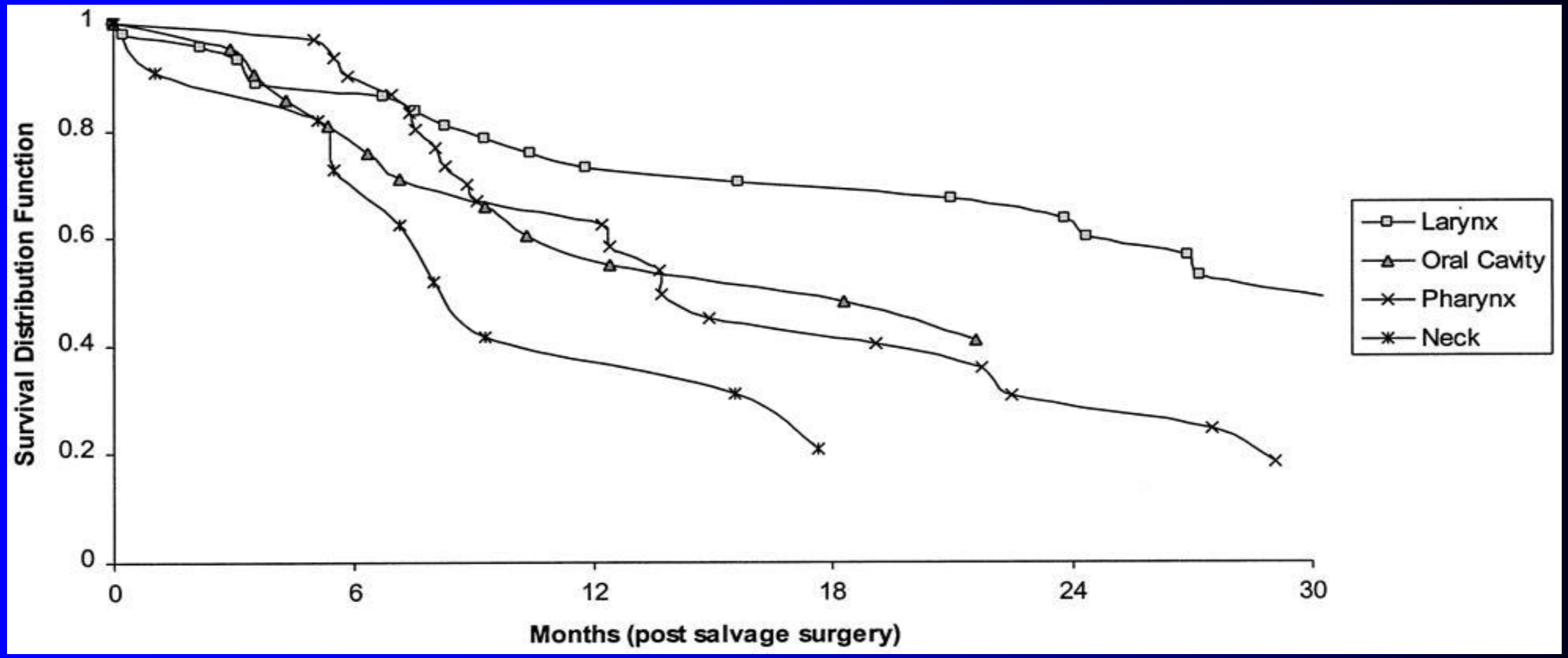
Quando il fine giustifica i mezzi ?

"Salvage surgery, as a double-edge sword,... may also provide only modest benefit …at a high non-economic cost". *Da: Rehman A, "The third revolution in medical care". N Engl J Med, 1988.*

Comprendere l’utilità della cura delle recidive è importante per evitare gli errori nel trattamento iniziale

(si scelgono modalità meno invasive se la terapia della recidiva è considerata efficace)

Salvage Surgery for Recurrent Head and Neck Cancer



Goodwin, WJ: Laryngoscope, 2000

Risultati oncologici del trattamento delle recidive metanalisi di 32 studi

	Sopravvivenza 5 anni	Sopravvivenza NED a 2anni
Laringe St I°-II°	83%	84%
Laringe St III°-IV°	48%	76%

- Mortalità chirurgica:……..5,2% (0%-18%)
- Complicanze maggiori:……27% (5%-48%)

Goodwin WJ, Laryngoscope, 2000

Fattori prognostici

Tempo di recidiva	N.S.	
Chemioterapia precedente	p≤.0007	prognosticamente peggiore
Radioterapia precedente	p=.582	prognosticamente migliore
Chirurgia precedente	p=.499	prognosticamente peggiore
Sesso	N.S.	
Stadio iniziale	N.S.	
Stadio di recidiva	p=.0004	prognosticamente peggiore

Goodwin WJ, Laryngoscope, 2000

Qualità di Vita

Punteggio FLIC (Functional Living Index for Cancer)

Miglioramento espresso in percentuale

	Dieta	Voce	Mangiare in pubblico
I° Stadio	71	86	86
II° Stadio	62	58	58
III° Stadio	45	34	48
IV° Stadio	29	18	34
media	*73*	*53*	*73*

Goodwin WJ, Laryngoscope, 2000

Risultati globali per stadio della terapia della recidiva del carcinoma laringeo

	I°-II° Stadio	III° Stadio	IV° Stadio
Sopravvivenza NED a 2 aa.	70%	33%	<25%
Q.O.L. soddisfacente	60-85%	40%	30%
Complicanze	6%	30%	30%
Mortalità	0%	<2%	<2%

Goodwin WJ, Laryngoscope, 2000

Trattamento non-chirurgico delle recidive

	Risultato oncologico	Costo
Re-irradiazione	sopravvivenza a 5anni: 20%	30% complicanze gravi
Chemioterapia	●RP nel 30% ●Miglioramento sintomi: 60%-70%	modesto

Goodwin WJ, Laryngoscope, 2000

Epidemiology
Cancer of the larynx

- 615.000 new cases per year (World)
- 352.000 deaths per year

Tumori della laringe

- Terapia iniziale …….successo 65%
- Terapia della recidiva ……successo 35%

Tumori della laringe

- recidiva su T 20-30%
- recidiva su N 10-15%
- recidiva su M 1-10%

Jesse RH & Al, 1976

Shah J et Al, 1976

Primary treatment

	Therapy	Raccomandations
	Endoscopic resection	2A
*	Radiotherapy	2A
	Open partial laryngectomy	5
	Chemo-irradiation	1
**	Induction CT + CT-RT	2B
	Total laryngectomy	2A

*** Total laryngectomy not required**

**** Total laryngectomy required**

Recurrence after radiation

T1 5 – 10 %
T2 20 – 40 %

Ganly I et al. Arch Otolaryngol Head Neck Surg 2006

T1-T2 glottic lesions 21% to 37%
T1-T2 supraglottic lesions 30% to 45%

Total vs partial laryngectomy

Authors	total	partial
Pearson JT (1996)	26	4
Schwaab G (1994)	35	10
McLaughlin MP (1996)	19	4
Ganly I (2006)	22	21
Piazza C (2007)	34	37

Recurrence after radiation

- 69 cases

22 Endoscopic (rT1a, T1b, selected rT2)

15 ONPL (most rT2, selected rT3)

34 Total Lar (rT3, rT4a)

5y DSS	72%
5y DFS	61%
5y function pres.	40%

Piazza C. et al: Arch Otolaryngol Head Neck Surgvol 133(10), 2007

Recurrence after radiation

- Diagnosis of recurrence
- Stage of recurrence
- Types of surgery (when conservative?)
- Indication
- Oncological results
- Functional outcome

Diagnosis and staging problems

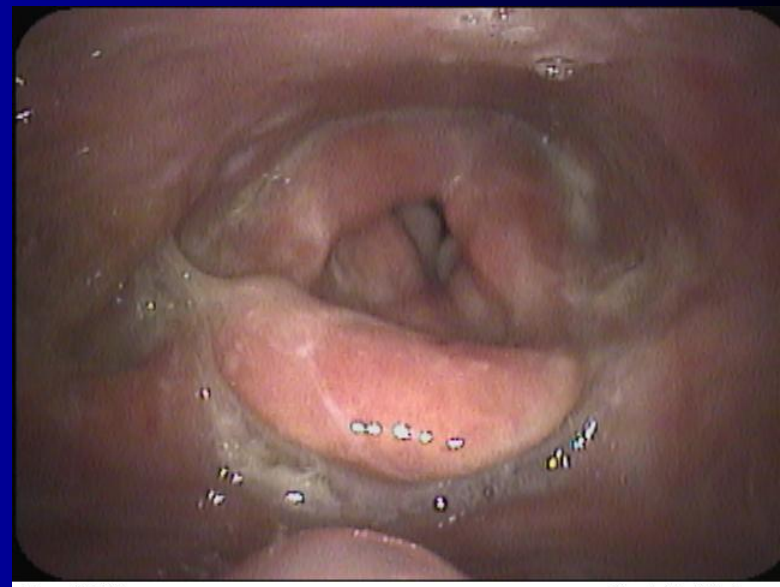
Clinical examination

- Chronic edema:
  - recurrence?
  - postirradiation sequelae?

- Cordal and arytenoid impairment:
  - posterior paraglottic space involvement and/or crico-arytenoid joint invasion (rT3)?
  - post-irradiation fibrosis?

Biopsy

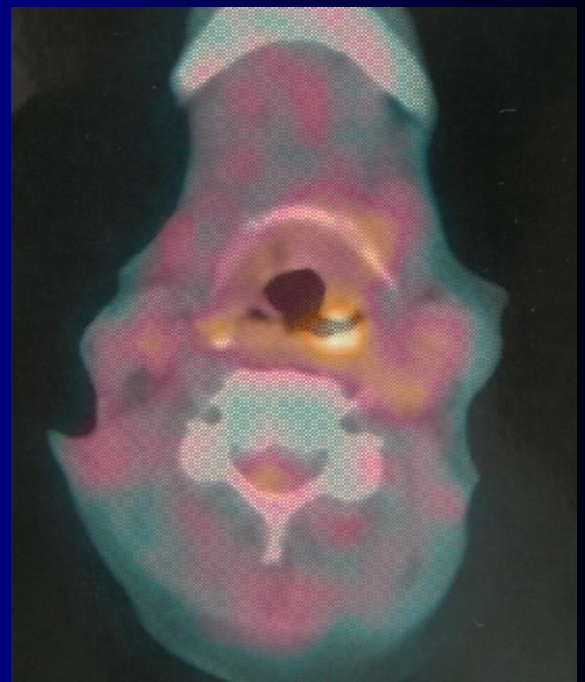
- Difficult for edema, fibrosis, etc.
- Possible “false negative” due to superficial biopsy



Diagnosis and staging problems
Imaging

- Low specificity of CT and MRI after irradiation
- 18-FDG-PET higher specificity than computed imaging in case of early recurrence (r T1-T2)

(92% vs 22% in Val J Lowe et Al. Radiology, 1999)



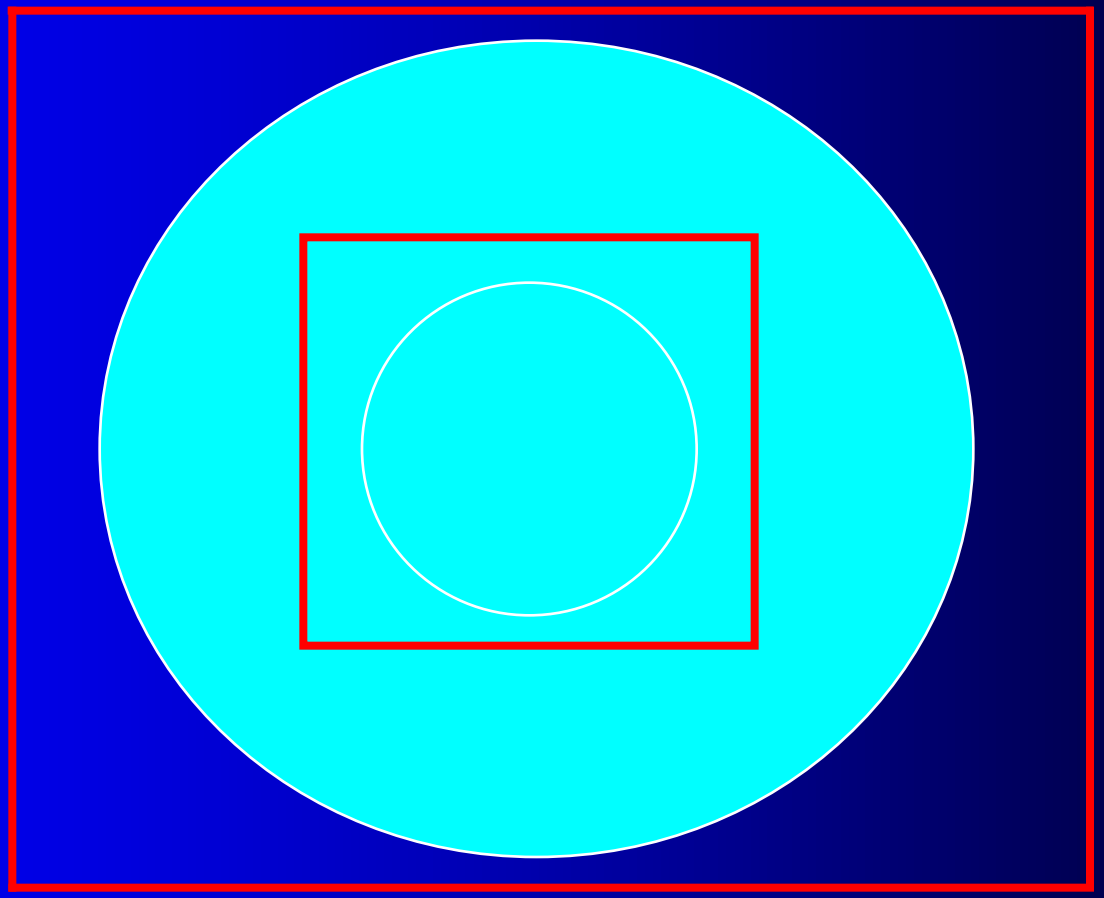
T status

- Same
- Upstaged
- Downstaged

Therapeutic strategy in salvage surgery

- Irradiation preserves the anatomical shields of pharyngo-laryngeal complex
- The risk of regional and distant metastases in recurrences is higher than untreated tumors
- Surgical treatment must be based on original extension of the disease

Salvage surgery is based on initial staging:
Surgeon must exactly know the initial stage



Laryngeal tumor: salvage surgery

Primary treatment

Irradiation

↓

RECURRENCE

↓

Salvage surgery options:

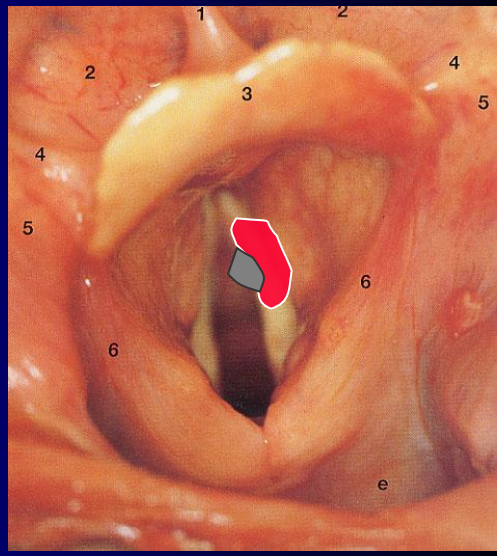
- **Total laryngectomy**
- **Endoscopic laser excision**
- **Open partial laryngectomy**

Total Laryngectomy

- Is the most applied surgical treatment in case of recurrence
- Can be extended to skin, pharynx, oesophagus, thyroid, trachea, etc
- Complete separation of respiratory and digestive tract
- High complication rate

Endoscopic LASER surgery

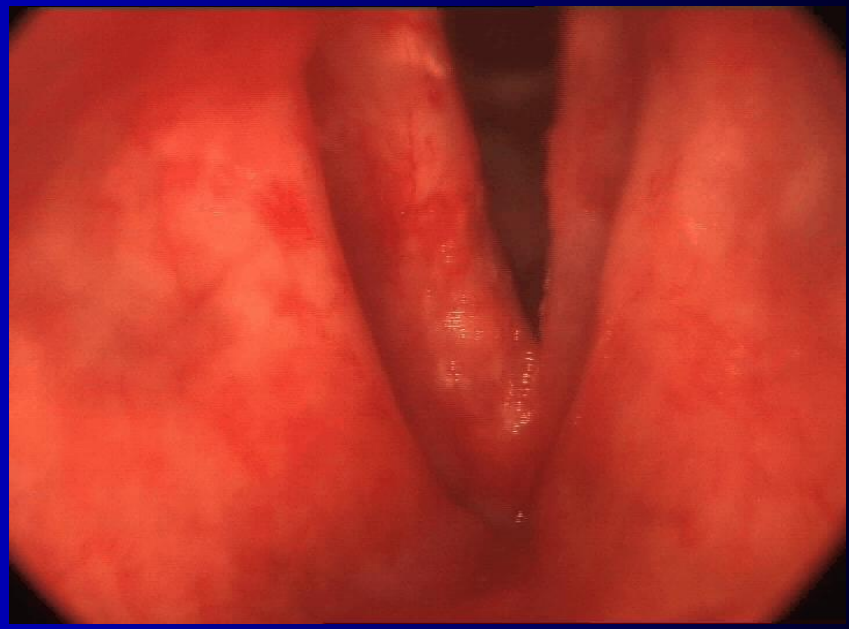
- No standard procedure
- Limited indications

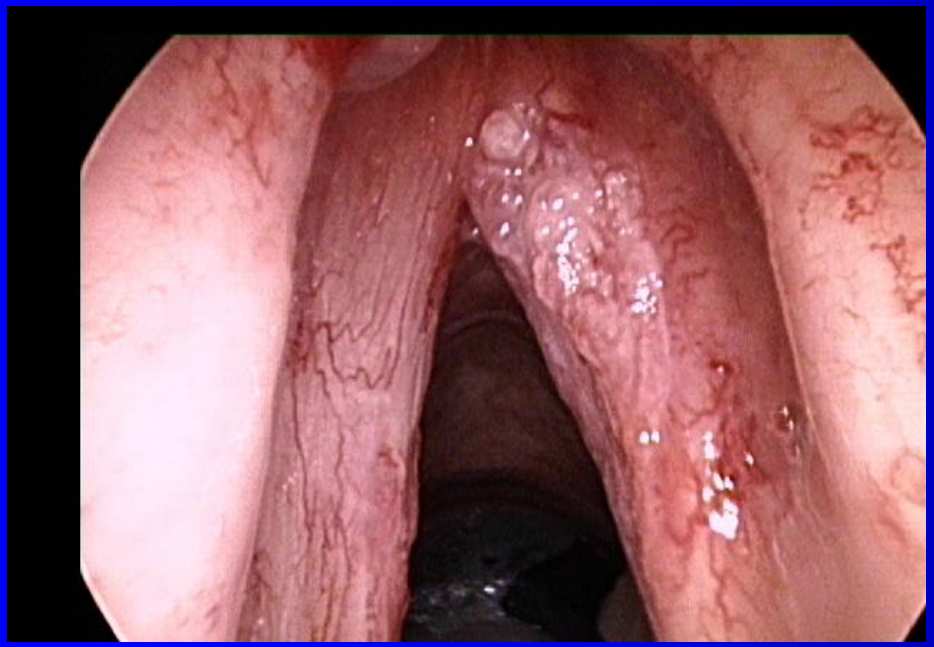


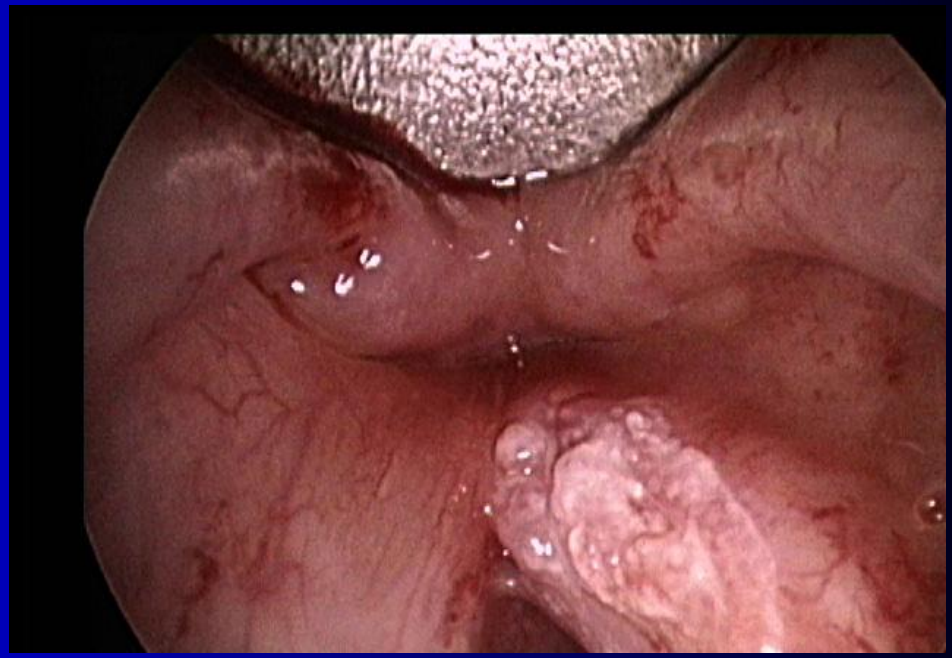
Indications

- *Expert surgeon*
- *No esofitic cancer*
- *T limited to glottic subsite and/or minimal invasion of supraglottis*
- *No sub-glottic extension*
- *Good endoscopic exposure*
- *No cordal motility impairment*
- *No anterior commissure involvement*

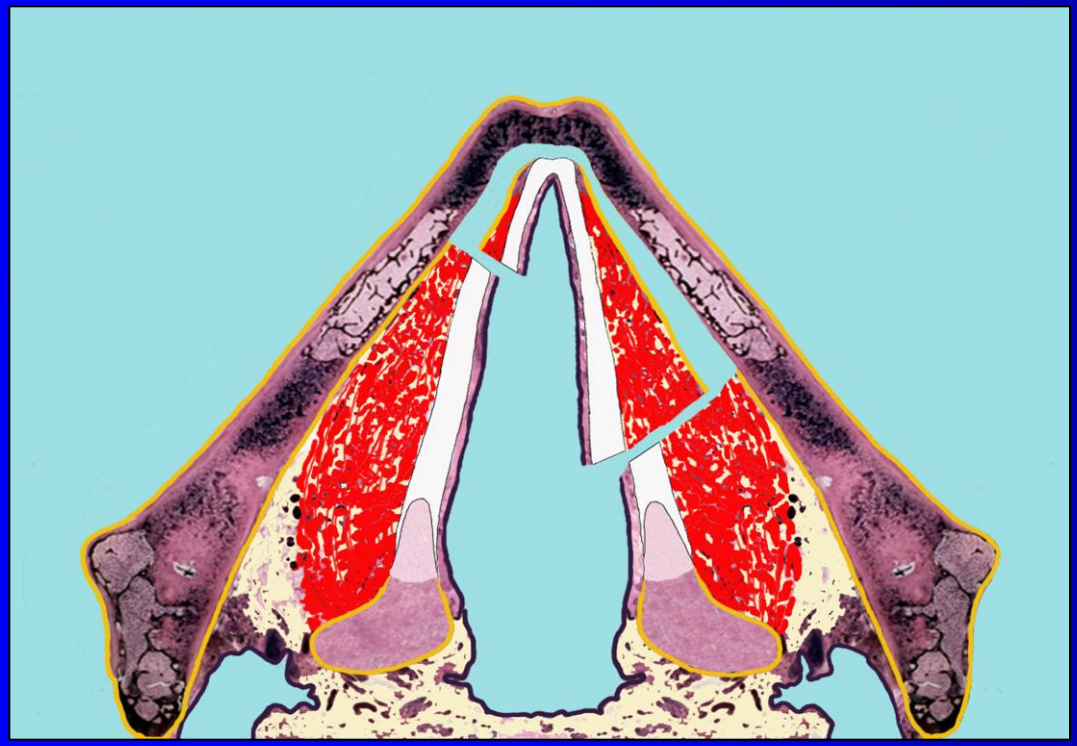
Radiotherapy for T1N0M0 glottic right vocal cord 4 years back

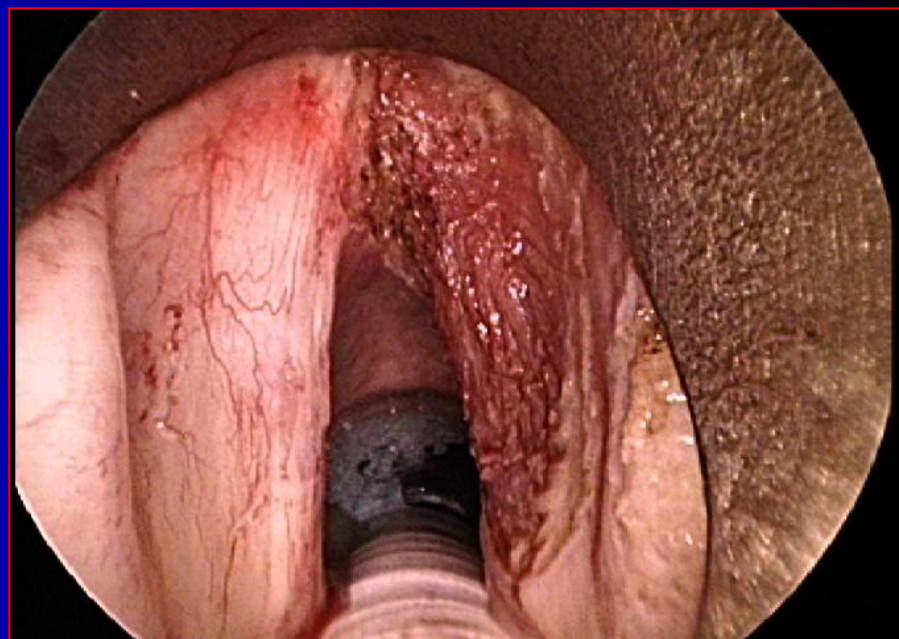






Transoral CO_2 laser right type III cordectomy

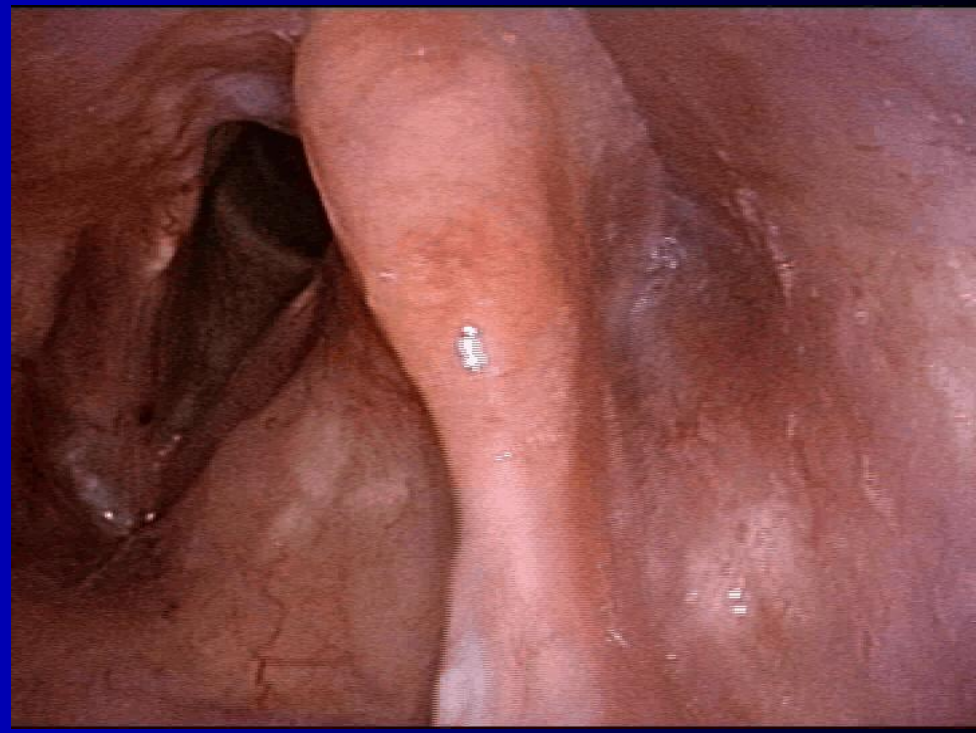




- Glottic right vocal cord SCC yrpT1aN0Mx

fat injection

early post-op



- NED, 10 mos

Endoscopic surgery: Results

Author	*Years*	*Cases*	*Salvage rate (%)*
Annayas	1983	10	50
Blakeslee	1984	15	40
Casiano	1991	16	51
Outzen	1995	10	70
Quer	2000	24	76
De Gier	2001	40	50
Steiner	2004	34	71
Puxeddu	2004	16	75
Sewnaik	2005	42	52
Ansarin	2007	37	58
Peretti	2010	23	75

Type of open partial laryngectomy

Vertical:

-Cordectomy with laryngofissure

-Fronto-lateral laryngectomy (Leroux-Robert)

-Fronto-anterior laryngectomy (Tucker)

-Emi-laryngectomy (Hautant, Gluck-Sorensen)

Horizontal:

•Epiglottectomy (Guerrier)

•Epiglottectomy extended to the tongue base (Huet)

•Horizontal glottic laryngectomy (Calearo-Teatini)

•Supraglottic Horizontal Laryngectomy (Alonso, Bocca)

•Extended Supraglottic Horizontal Laryngectomy (Bocca-Ogura)

•Supracricoid laryngectomy (CHP / CHEP)

•Tracheo-hyoid-pexis (Rizzotto)

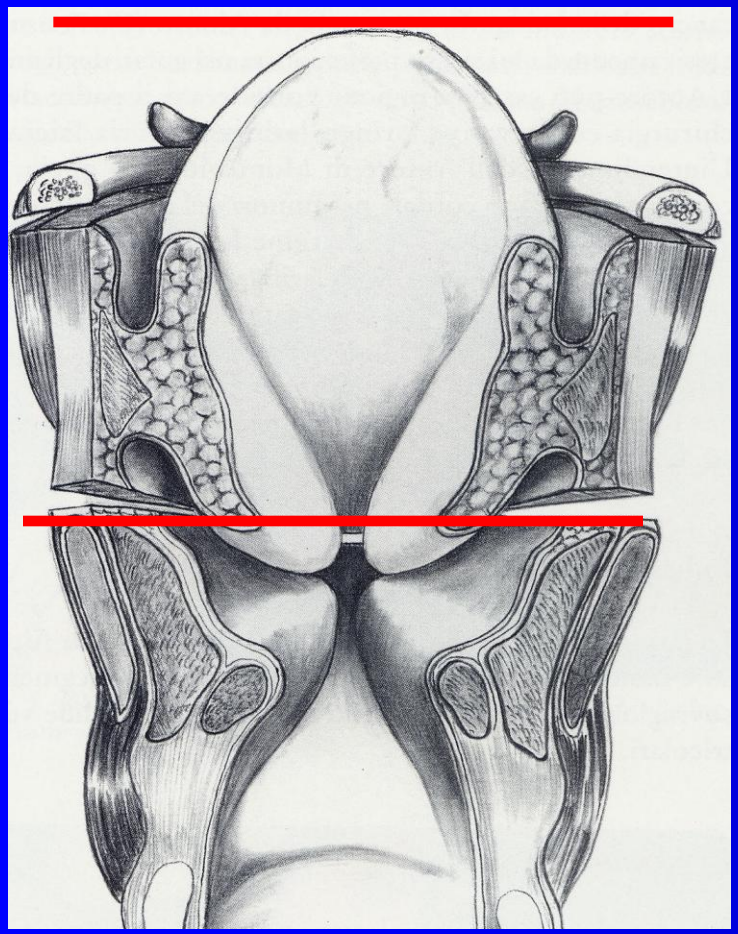
•Glottic-subglottic laryngectomy (Bartual-Serafini)

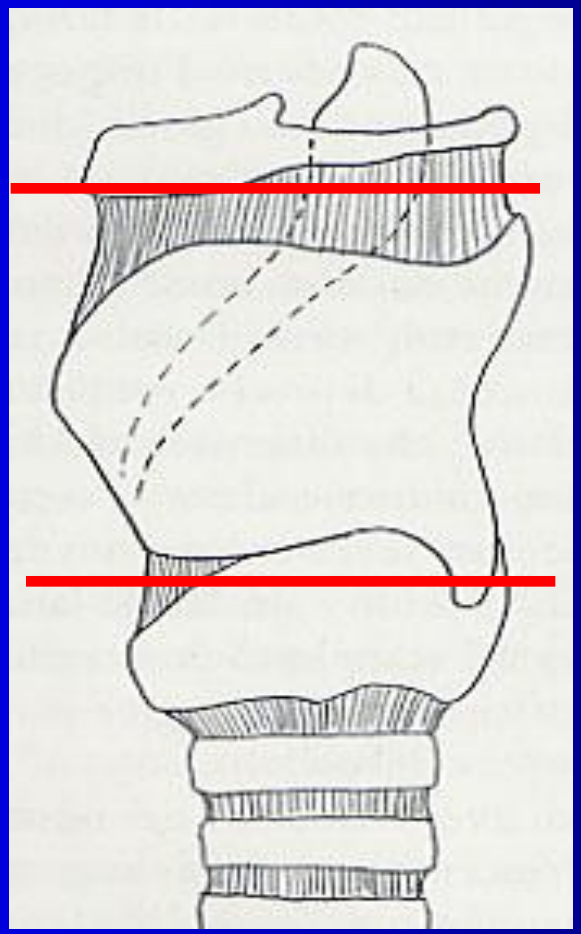
Vertical laryngectomy with external approach: Results

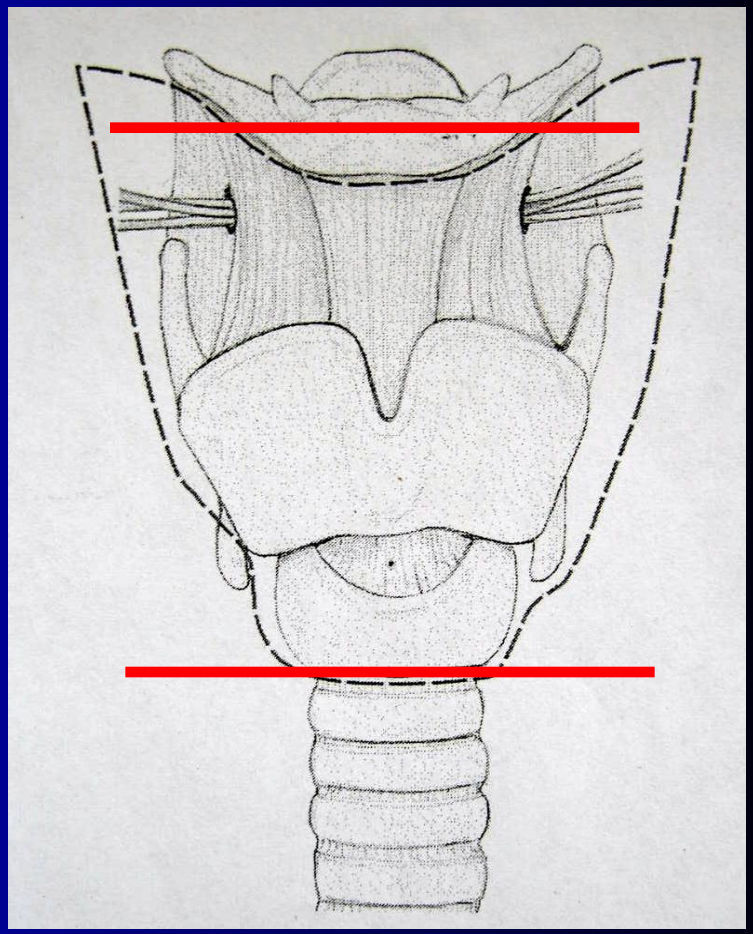
Author	*years*	*cases*	*Salvage rate (%)*
Biller	1970	18	78
Sorensen	1980	55	82
Rothfield	1990	14	79
Lavey	1991	25	96
Shaw	1991	54	83
Del Gaudio	1995	22	82
Kooper	1995	61	85
Rodriguez-Cuevas	1998	29	92
Wattes-Patel	2000	33	79
Mooney	2002	21	71
Toma	2002	19	84
Yotakis	2003	18	100
Sewnaik	2005	21	71
Jeong	2007	25	76

Horizontal:

LOS ***CHP*** ***THP***







Supracricoid partial laryngectomy

Less
Endoscopic
VPL
HSL

More
Total laryngectomy

- **No cartilage cut**
- **More amount of tissue removed**

40/90 (44%) total laryngectomy specimens were resectable by SCPL
(Weinstein GS. Laryngoscope 2001)

If hyoid bone and cricoid cartilage are free of disease can be preserved

Excision

Crico-hyoido epiglottopexy

- **True and false cord**
- **Both paraglottic space**
- **Thyroid cartilage**

Crico-hyoido pexy

- **Pre-epiglottic space**
- **Epiglottis**

Subtotal Laryngectomy: CHEP and CHP

Selection Criteria by Patient

- Age alone is not a contraindication
- Cardiocirculatory disease
- Metabolic disorders
- Severe GERD
- Psycological and socio - cultural aspects

Broncopulmunar apparatus

- spyrometric values < 50 %
- M. E. F. < 200 l/min
- F.E.V.1 / F.V.C. < 50 %
- impaired cough reflex
- inability to climb two flights of stairs

Supracricoid Laryngectomy Contraindications

Tumor Related

- Subglottic extension greater than 10 mm anteriorly and 5 mm posteriorly
- Arytenoid cartilage fixation
- Massive invasion of the pre-epiglottic space
- Invasion of pharyngeal wall, vallecula, base of the tongue, postcricoid region and inter-arytenoid region
- Cricoid cartilage invasion

Goals in management of post-RT recurrence

- Local control and survival
- Acceptable morbidity of the treatment
- Good quality of life (function preservation)

Does supracricoyd laryngectomy allow to satisfy these goals ?

SUPRACRICOID PARTIAL LARYNGECTOMY AS SALVAGE SURGERY AFTER RADIATION FAILURE

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SUPRACRICOID PARTIAL LARYNGECTOMIES AFTER RADIATION FAILURE: A MULTI-INSTITUTIONAL SERIES

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Supracricoid Partial Laryngectomy after radiation failures

78 cases (1987 – 2004)

included: only T1 and T2 treated by radiotherapy alone

Demographics

Gender: all male

Age: 59.6 (33 – 76)

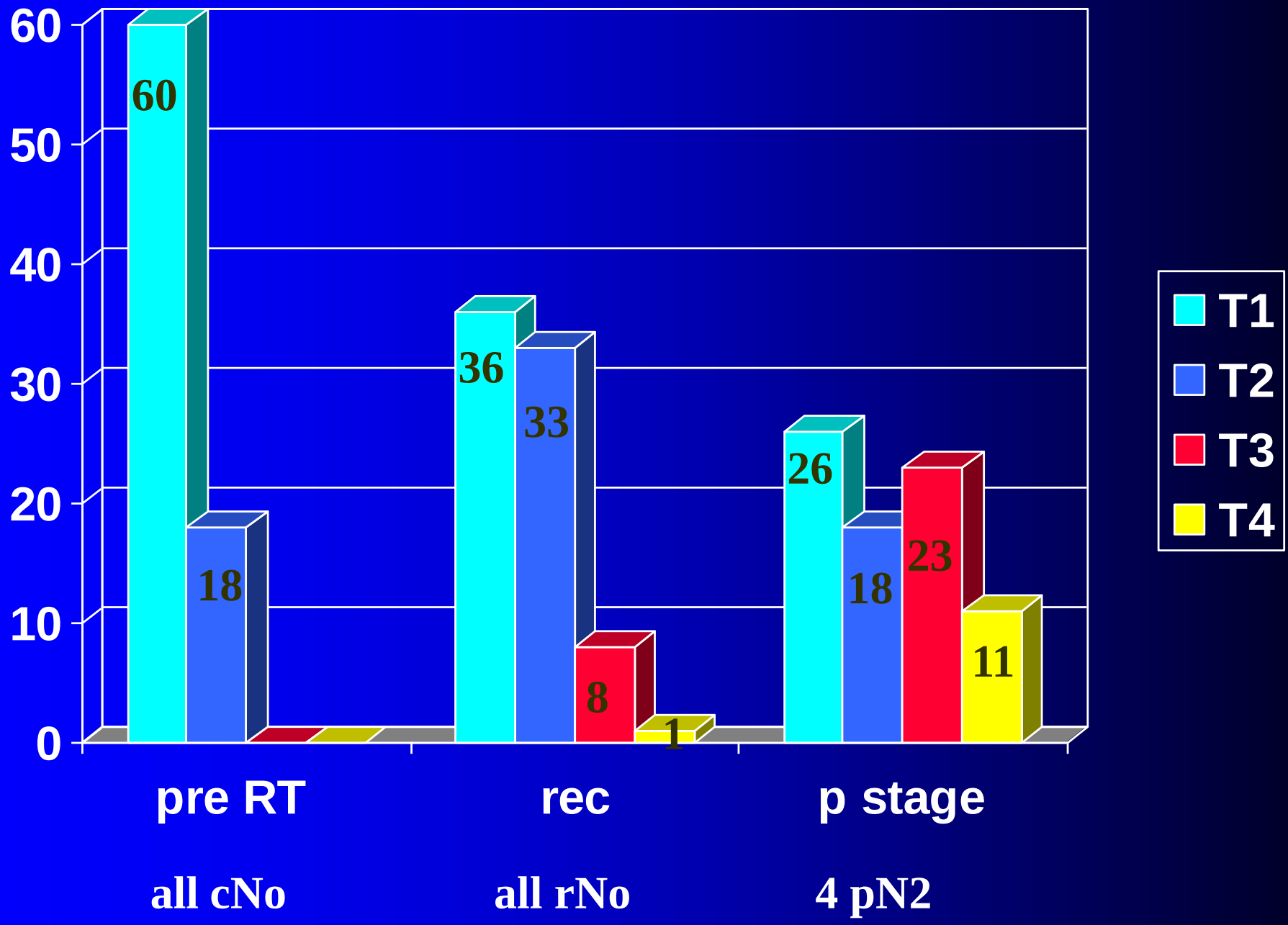
Previous radiotherapy

60 cases: 63 Gy (+/- 3 Gy) on T

18 cases: 66 Gy (+/- 6 Gy) on T and N

Type of surgery

- 62/78 (79,5%) CHEP
- 16/78 (20,5%) CHP
- 41/78 (52,5%) arytenoid resection
- 15/78 (19,2%) Homolateral ND
- 6/78 (7,7%) Bilateral ND


60
50
40
30
20
10
0
60
18
36
33
8
1
26
18
23
11
T1
T2
T3
T4
pre RT
rec
p stage
all cNo
all rNo
4 pN2

Supracricoid laryngectomy

78 cases

Oncological results

Overall survival: 85.2%, 81.8%, at 3 and 5 yrs
Disease free survival on T: 95.5% at 3 and 5 yrs

4 recurrences on T (1 recovered with total laryngectomy)
4 died for lung metastases
3 died for 2 nd primary
1 died for heart failure in 30 th POD
6 died for other causes without disease

Supracricoid Laryngectomy

78 cases

Post-op Complications

Early: (before p.o.day 30)

27% (21 / 78)

- Neck abscess 6.4%
- Partial cervical flap necrosis 2.5%
- Cervical bleeding 1.3%
- Acute thrombophlebitis IJV 1.3%
- Subcutaneous emphysema 2.5%
- Arytenoid edema 6.4%
- Aspiration pneumonia 8.9%
- Dehiscence of the pexy 1.3%

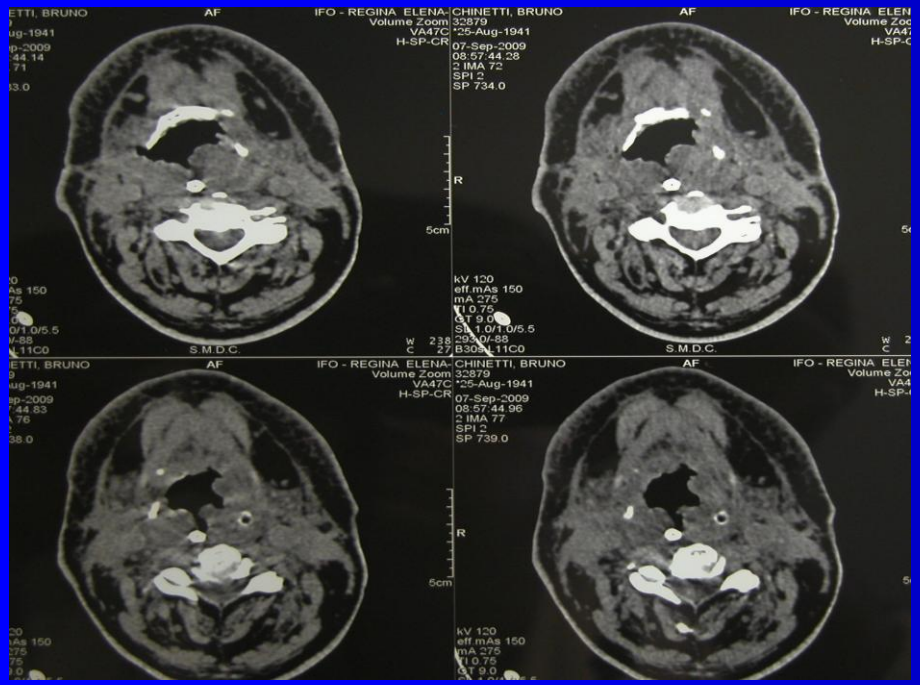
Neck dissection related

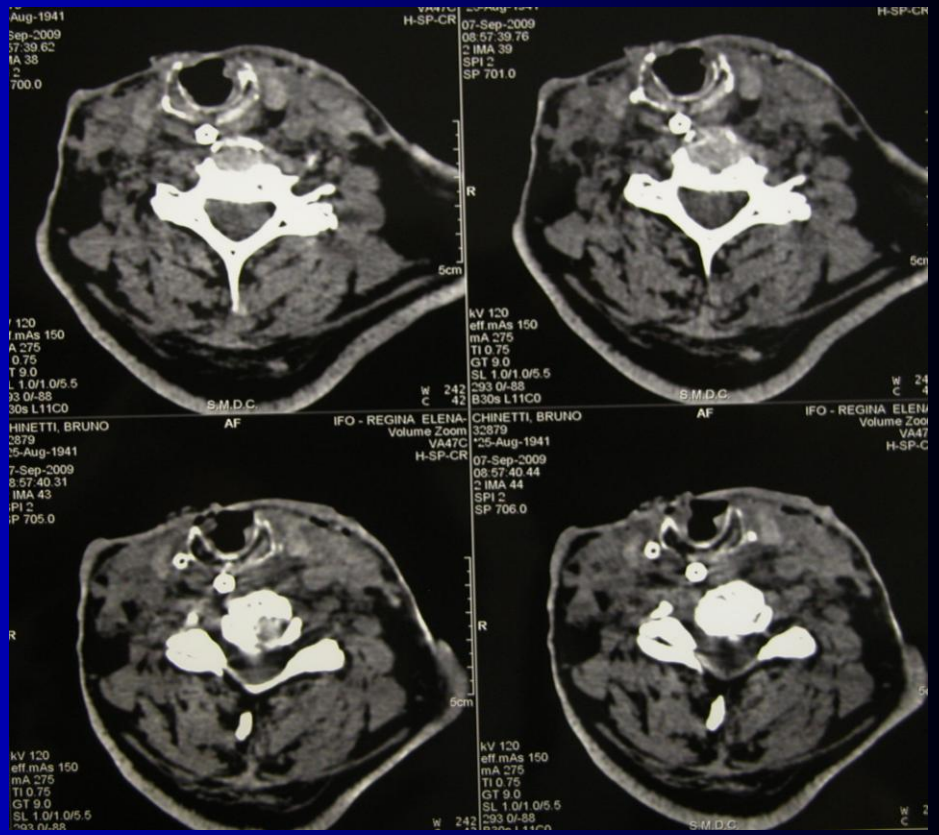
Late:(beyond p.o.day 30)

17.9% (14 / 78)

- Permanent post-op aspiration 5.1%
- Endolaryngeal infection 1.3%
- Persistent Arytenoid edema 7.7%
- Hypoglottic granulation tissue 2.5%
- Tracheo-coutaneous fistula 1.3%
- Laryngocele ?

Sopracricoidea dopo RT





Supracricoid Laryngectomy

78 cases

Functional results

Decannulation

Within 1 months	**30/78 (35.7%)**
Within 3 months	**72/78 (92.3%)**
Within 1 year	**76/78 (97.4%)**

Hospitalization: **13-95 days (median 23 days)**

Supracricoid Laryngectomy

78 cases

Functional results

Swallowing 3 months after surgery

0-5 Point Scale

0 - Normal function without any simptom

1 - Nearly normal function with occasional daily cough during meals

2 - Moderately impaired function with constant cough during meals, modified diet, and prolonged meals

3 - Impaired function with limited weigh loss and respiratory risk

4 - Severely impaired function with loss of more than 10% of weight, and pulmunary complications

5 - No safe swallowing

Supracricoid Laryngectomy

78 cases

Functional results

Swallowing

NGFT removing 12 – 90 days (mean 15 days) 78 / 78 (100%)

48/78 (61,5%) grade 0-1
26/78 (33.3) grade 2-4

4/78 (5.8%) aspiration pneumonia

6/78 (7.6%) PEG (2 cases definitive)

Within 3 months 76/78 (97,4%) grade 0-1

Supracricoid Laryngectomy

76/78 cases

Functional results

Voice (Maximum Phonation Time in seconds)

Normal Adult Laryngeal Speakers	Supracricoid Laryngectomy Speakers
12-28 sec (mean 16 sec)	**2-18 sec (mean 7.9 sec)**

Supracricoid Laryngectomy

76/78 cases

Functional results

Voice (5-point scale)

SCALE	RESULTS
0 Normal Voice	
1 Minor Hoarseness	Grade 1 : 19 Pts
2 Grossly Hoarseness	Grade 2 : 49 Pts
3 Nearly Aphonic	Grade 3 : 08 Pts
4 No Intelligible Speech	

Literature Review

Author	N° Cases	Survival	Swallowing	% Decannulat.	Complications
Spriano G Head Neck, 2004	11 CHEP 4 CHP	3yrs 75%	100%	100%	28%
Marchese-Ragona R Acta Oto-Laryn. 2005	7 CHP	6/7	100%	100%	4/7
Makeieff M Laryngoscope, 2005	18 CHEP 5 CHP	5 yrs 69.4 % l. c. 74%	83 %	100 % 28 days	2/23 died because of aspiration
Rifai M Am J Otolaryngol 2002	37 SCPL	2 yrs 95.4%	100%	86.3%	1/37 mortality
Clark J ANZ J. Surg, 2005	4 CHEP 2 CHP	5 yrs 85% l.c. 76%	100%	100%	3/6 morbidity 2/6 mortality
Laccourreye O Laryngoscope 1996	12 SCPL	3 y 83.3% l. c. 100%	95 %	90 %	5/12 major
Personal experience Head Neck, 2007	62 CHEP 16 CHP	5 yrs 81.8 % l.c. 95,5 %	97% (2 PEG)	97%	27 % early 17.9 % late

Comparison

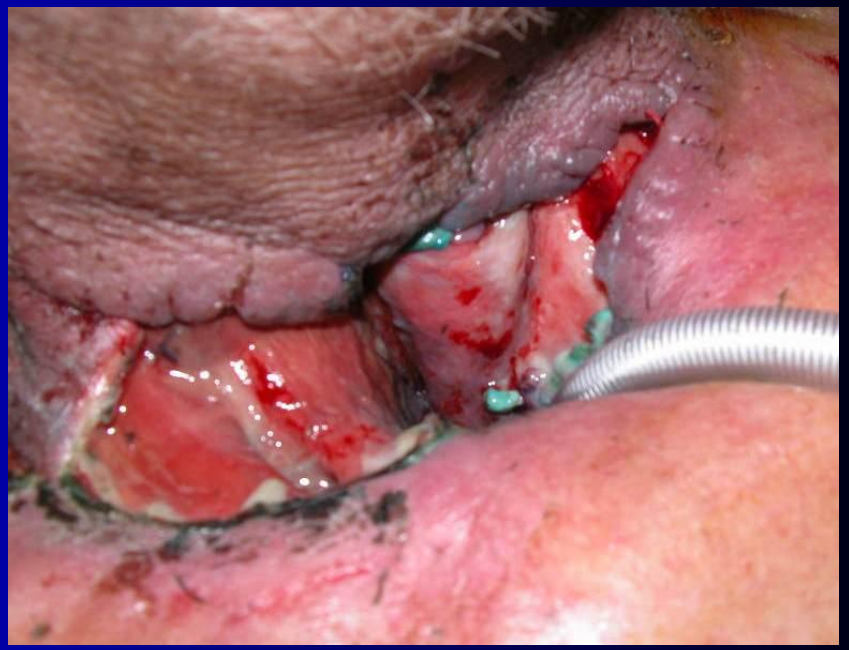
Supracricoid laryngectomy

Vs.

Total laryngectomy with TEP

“Complication in total laryngectomy after radiation failure”

(Spriano G. et al, 1992)



- Global incidence: 32/106 (30.18%)
- General complications 5: (respiratory and urinary infections)
- Local complications 27: 6 mild
  15 medium
  6 severe (2 deaths)

Quality of Life
SCL vs TL

Weinstein GS, et. Al: Laryngoscope, 2001

31 cases using:

- SF-36 general health status measure
- Un. of Michigan HNQOL
- Un. Of Michigan Voice-Related QOL

SCL had significantly higher domain scores than TL and TEP for:

- Physical function, physical limitations, general health, vitality, social function, emotional limitations and physical health summary for the SF 36
- Eating and pain for the HNQOF
- Voice related quality of life assessed with the V-RQOL

Prosthetic voice rehabilitation after laryngectomy. Failures and complications after previous radiation therapy
Kummer P et al HNO 2006

145 cases

- **128 no RT**
- **17 after RT**

Complications	HR
Functional failures	2.9
Aspiration	1.51
Widening of shunt	2.32
Esophageal dislocation	2.51
Tracheal dislocation	3.29
Spontaneuos closure	2.51
Surgical closure	3.76

Recurrence after chemo-radiation

Is conservative surgery possible?

↓

NO

↓

Why?

Primary treatment

	Therapy	Raccomandations
	Endoscopic resection	2A
*	Radiotherapy	2A
	Open partial laryngectomy	5
	Chemo-irradiation	1
**	Induction CT + CT-RT	2B
	Total laryngectomy	2A

*** Total laryngectomy not required**

**** Total laryngectomy required**

cT3 N2b sovraglottico dopo RT-CT concomitante

Trattamento della recidiva

Terapia Primaria	Salvataggio
Laser	Laser ? RT Chirurgia parziale Laringectomia totale
RT	Laser Chirurgia parziale Laringectomia totale
RT-Chemio	Laringectomia totale
Chirurgia parziale	RT ? Laringectmia totale
Laringectomia totale	Ipofaringectomia totale

Conclusioni

- La recidiva è un evento sfavorevole
- Il corretto percorso terapeutico ne riduce la comparsa
- La diagnosi è più difficile
- La recidiva è più estesa
- Accurata selezione dei pazienti e dei tumori
- Valutazione costi benefici
- La chirurgia conservativa laringea è possibile
- Il recupero dopo RT o resezione endoscopica è più facile
- Le complicanze sono maggiori

Thanks and see you in Rome

Functional Outcome of Supracricoid Partial Laryngectomy with Cricohyoidopexy Radiation Failure vs Previously Untreated Cases

Raul Pellini, MD; Valentina Manciocco, MD; Giuseppe Spriano, MD

Arch Otolaryngol Head Neck Surg. 2006;132:1221-1225.

Early complications:

65 previously untreated:
15/65 (23%)
vs
17 RT Failure
6/17 (35.2%)

P= 0.47

Late complications:

65 previously untreated:
18/65 (27.6%)
vs
17 RT Failure
4/17 (23.5%)

P= ns

Decannulation:

65 previously untreated
59/65 (90.7%)

P= ns

17 RT Failure
16/17 (94%)

Swallowing:

65 previously untreated
57/65 (87.6%)

P= ns

17 RT Failure
14/17 (82.3%)

Voice:

65 previously untreated
2 -18 sec (mean 7.9 sec)

17 RT Failure
3 -16 sec (mean 9.5 sec)

Category of raccomandations: 2A

Radiotherapy (total laryngectomy not required most T1-2 N0)

glottic

T1: 66 Gy (2 X 33)

63 Gy (2.25 X 28) Yamazaki H. et al. Int J Radiat Oncol Biol Phys 2006

T2: 70 Gy (2 X 35)

79.2 (1.2 twice X 33) Trotti A. et al. Int J Radiat Oncol Biol Phys 2006

Supraglottic

T 66-70 Gy (2 X 33 or 1.2 twice X 32/33 or concom boost)

N0 50 Gy

Foote RL: Int J Radiation Oncology Biol Phys, 2007

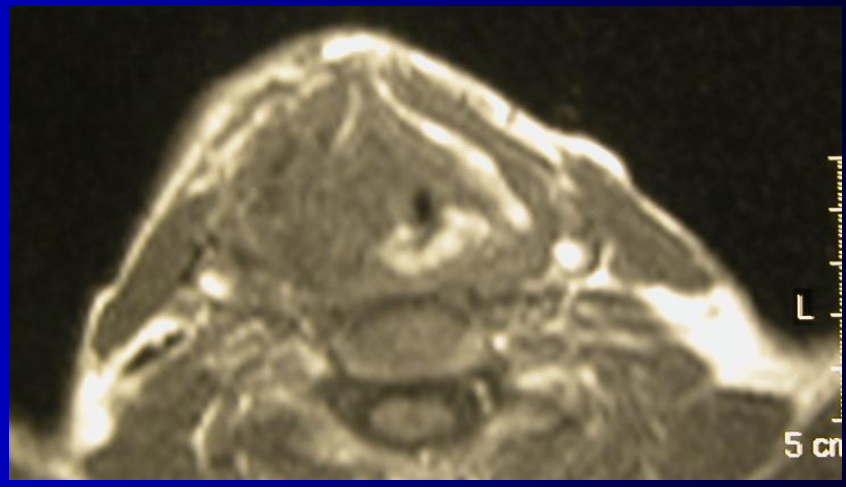
Propensity in Italy

T3 N0-1-2 glottic and supraglottic
Selected T4a (anterior extension)

Open partial laryngectomy for Candidates
RT or CT-RT for unsuitable cases

T3-4 or N3

Total laryngectomy



The selection of treatment comes out from the analysis of results

Results:

Oncological: local control

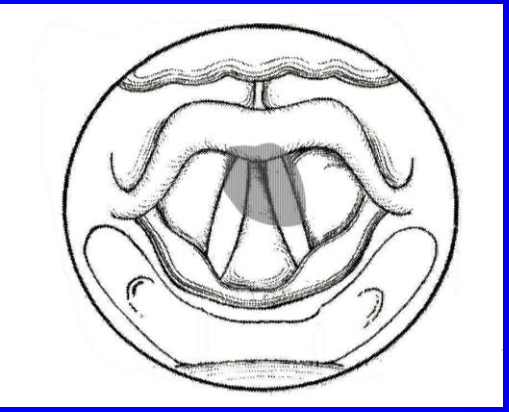
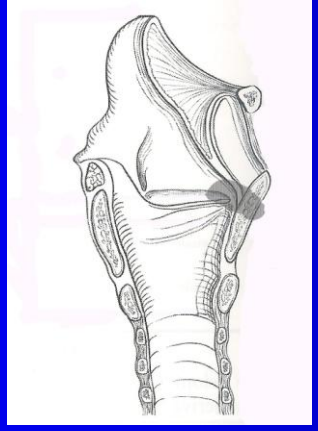
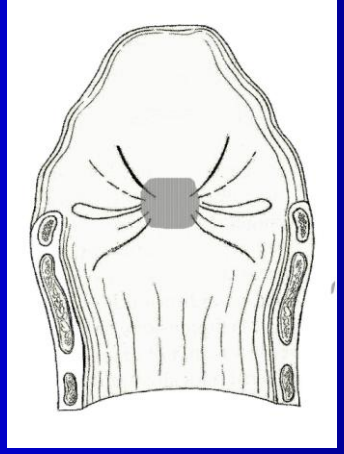
determinate and overall survival

Functional: laryngeal preservation

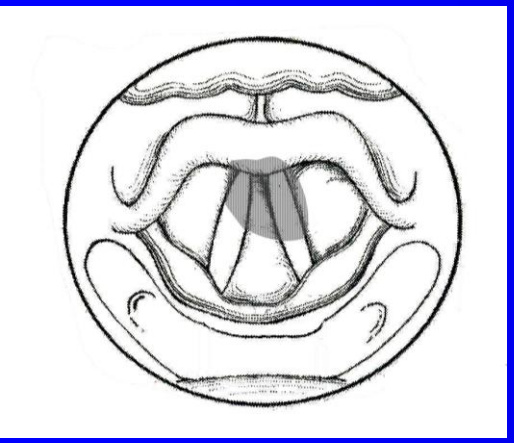
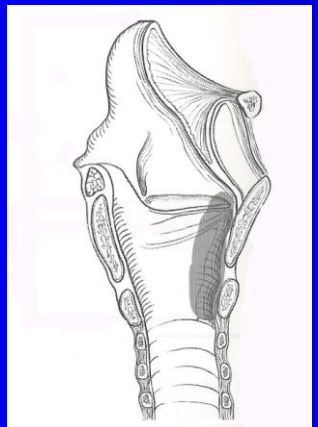
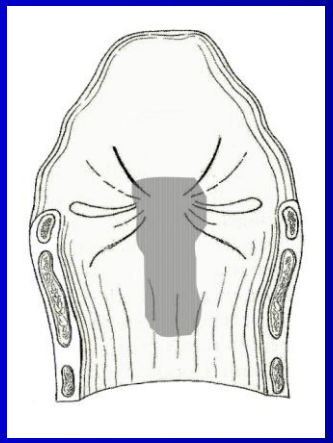
anatomical vs functionating

breathing, swallowing, voice

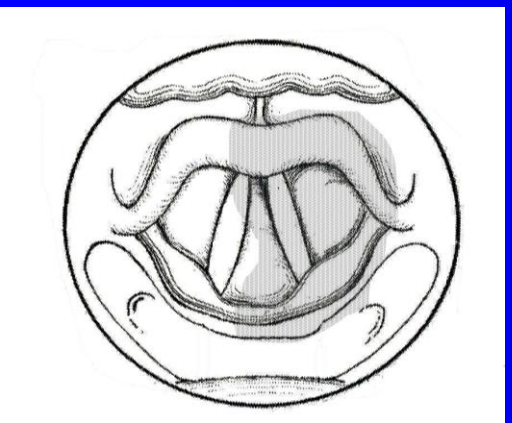
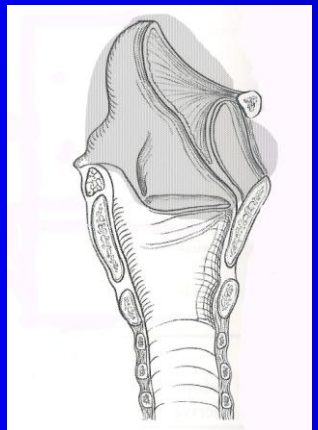
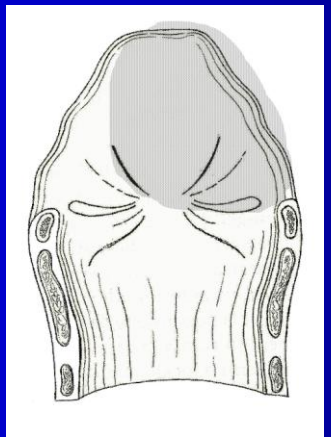
Cost: Toxicity

cT4

cT3

cT3

Emifaringo-emilaringectomia destra +
svuotamento radicale del collo
pTNM: pT2 N2b margini con Tis
RT post-operatoria su T e su N

svuotamento radicale del collo
+ RT per cT2N3 seno piriforme

R91-11: Stratification Factors

- glottis, supraglottis
- T2, T3 fixed cord,

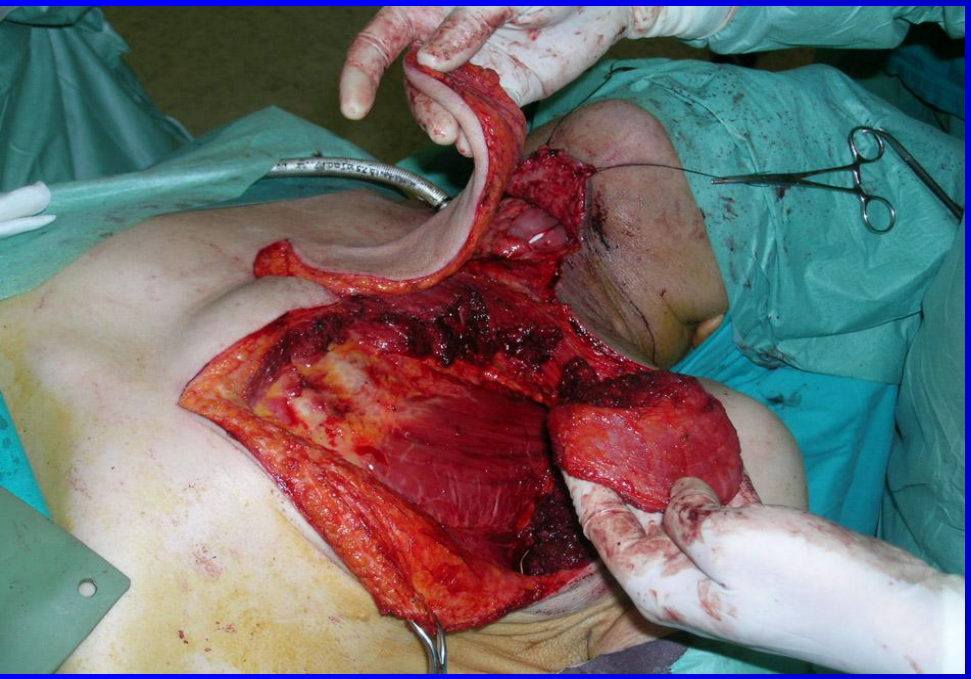
  T3 no cord fixation, T4
- N0 or N1, N2 or N3

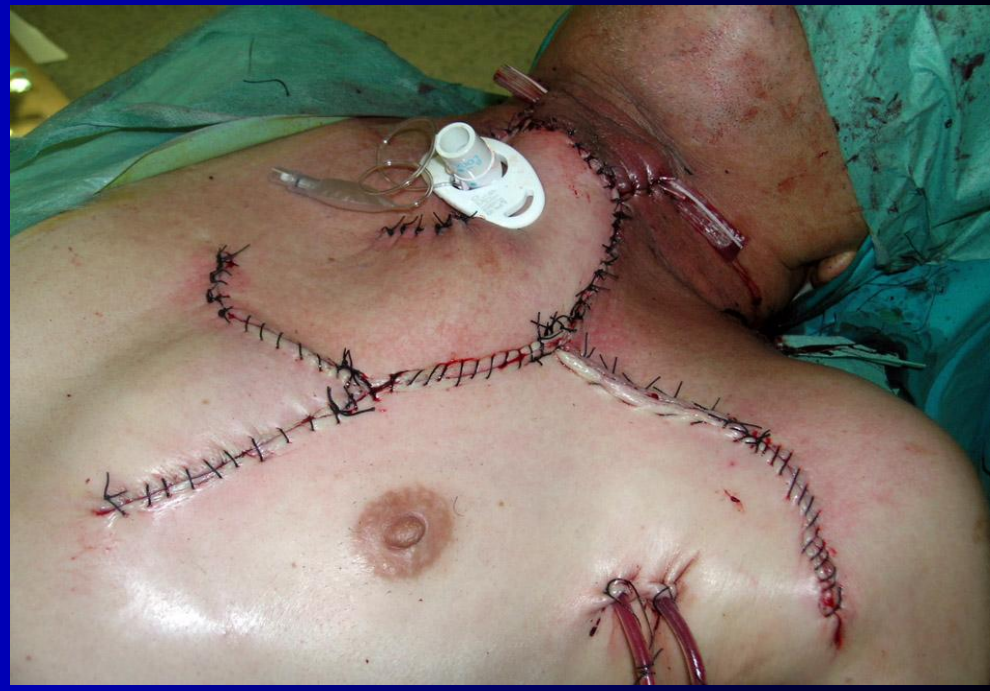
Eligibility Criteria

- Stage III or IV

  T1 excluded

  T4 excluded if tumor penetrated through cartilage or invaded > 1cm into base of tongue





Level of evidence	Grade of Recommendation
I: large randomized trials with clear cut-results (low risk of error)	A
II: small randomized trials with (mod to high risk)	B
III: non-randomized, contemporaneous controls	C
IV: non-randomized, historical controls	C
V: No controls, case series only	C

The selection of treatment comes out from the analysis of results

Results:

Oncological: local control

determinate and overall survival

Functional: laryngeal preservation

anatomical vs functionating

breathing, swallowing, voice

Cost: Toxicity

Selezione dei pazienti per aspettative

- ***Speech and survival: Tradeoff between quality and quantity of life in laryngeal cancer***

  (McNeil BJ, Weichselbaum R, Pauker SG. N Engl J Med, 305: 982-7, 1981)

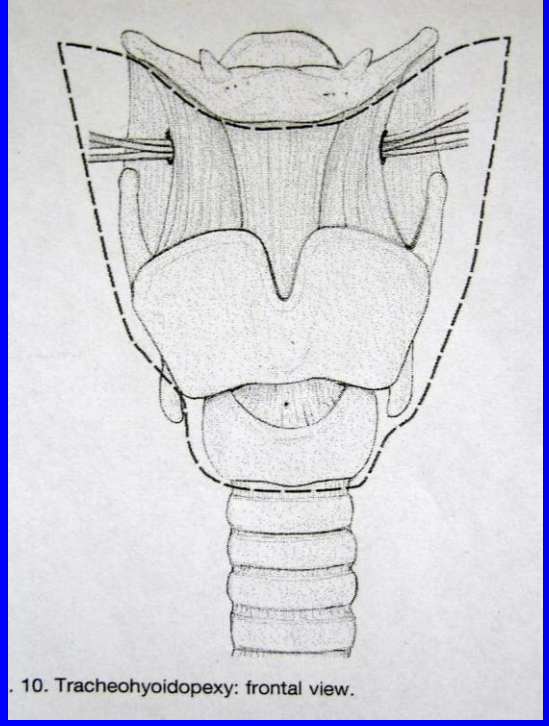
- **25% dei malati intervistati erano disposti a barattare il 20% di differenza in sopravvivenza di fronte all'opportunità di salvare la loro voce.**

Selezione dei pazienti per aspettative

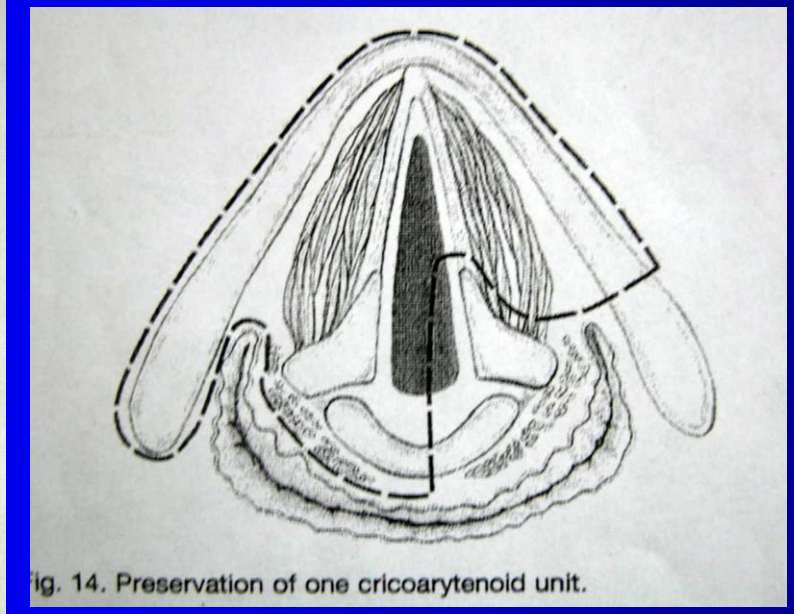
- ***How do head and neck cancer patients prioritize treatment outcomes before initiating treatment?***

  (List MA et al., *J Clin Oncol*, 2000)

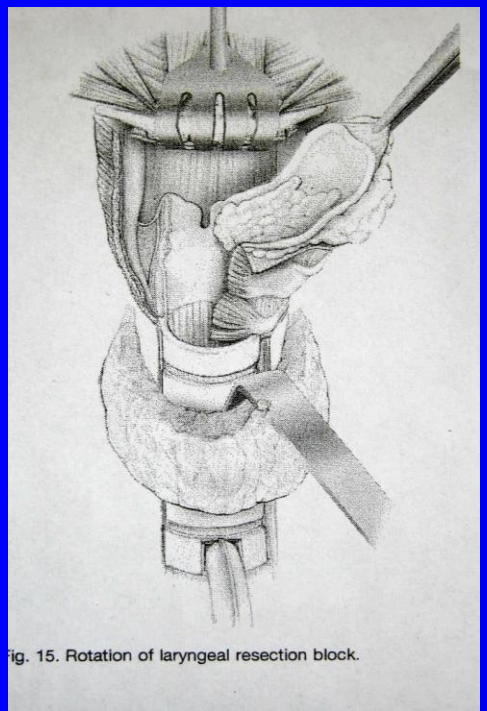
- **Priorità per il paziente:**
  - **Essere curato (75%)**
  - **Vivere il più a lungo possibile (56%)**
  - **Non avere dolore (35%)**
- **Aspetti funzionali**
  - **Fra le prime tre priorità nel 10-24%**



. 10. Tracheohyoidopexy: frontal view.



ig. 14. Preservation of one cricoarytenoid unit.



ig. 15. Rotation of laryngeal resection block.

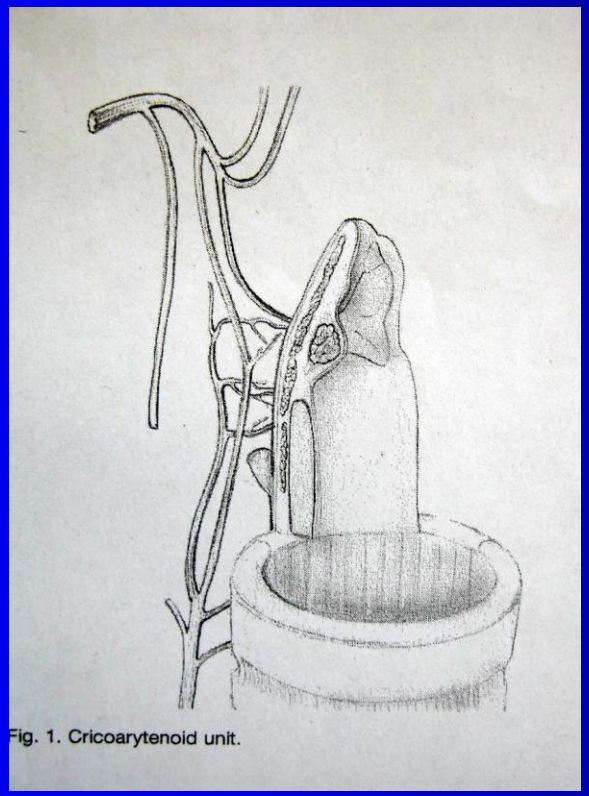


Fig. 1. Cricoarytenoid unit.

Fig. 11. Tracheohyoidopexy: lateral view.

Subtotal laryngectomy with tracheohyoidopexy: a possible alternative to total laryngectomy.
Rizzotto G, Succo G, Lucioni M, Pazzaia T
Laryngoscope. 2006 Oct; 116(10):1907