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Direttore: Prof.ssa M.C. Da Mosto

# Advanced head and neck cancer: surgery and quality of life

M.C. Da Mosto  
V. Lupato

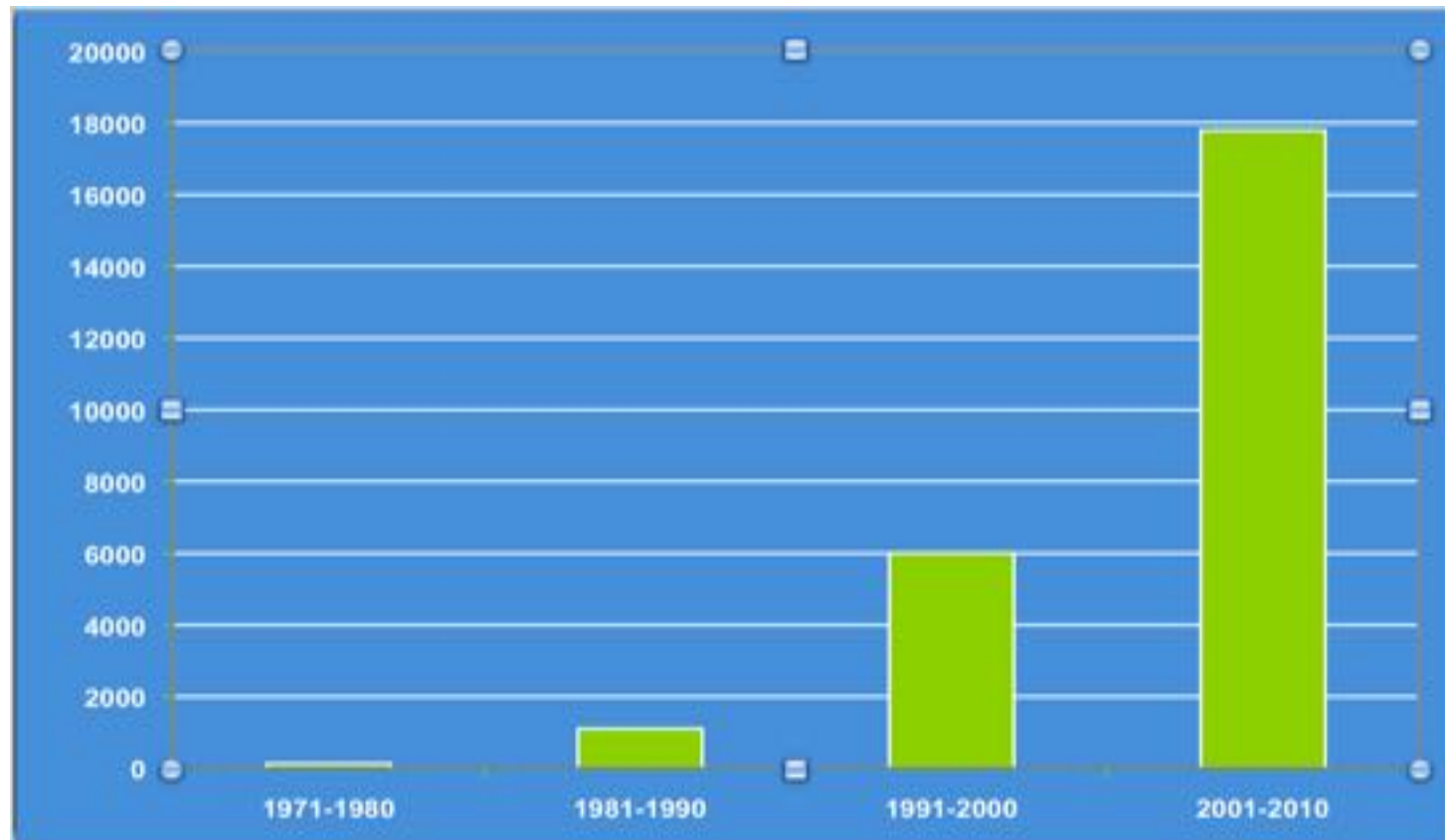
Tossicità e terapie di supporto nei trattamenti  
dei tumori del capo collo.  
Treviso, 30 Gennaio 2015



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# Definition

An individual's perception of overall well-being

**WHO:** “an individual's perception of their position in life, in the context of the culture and values systems in their life, and in relation to their goals, expectations, standards, and concerns”

**Gap theory:** “the perceived discrepancy between the reality of what one has and what one wants, or expects or has had”





# Health-related QoL (HRQoL)

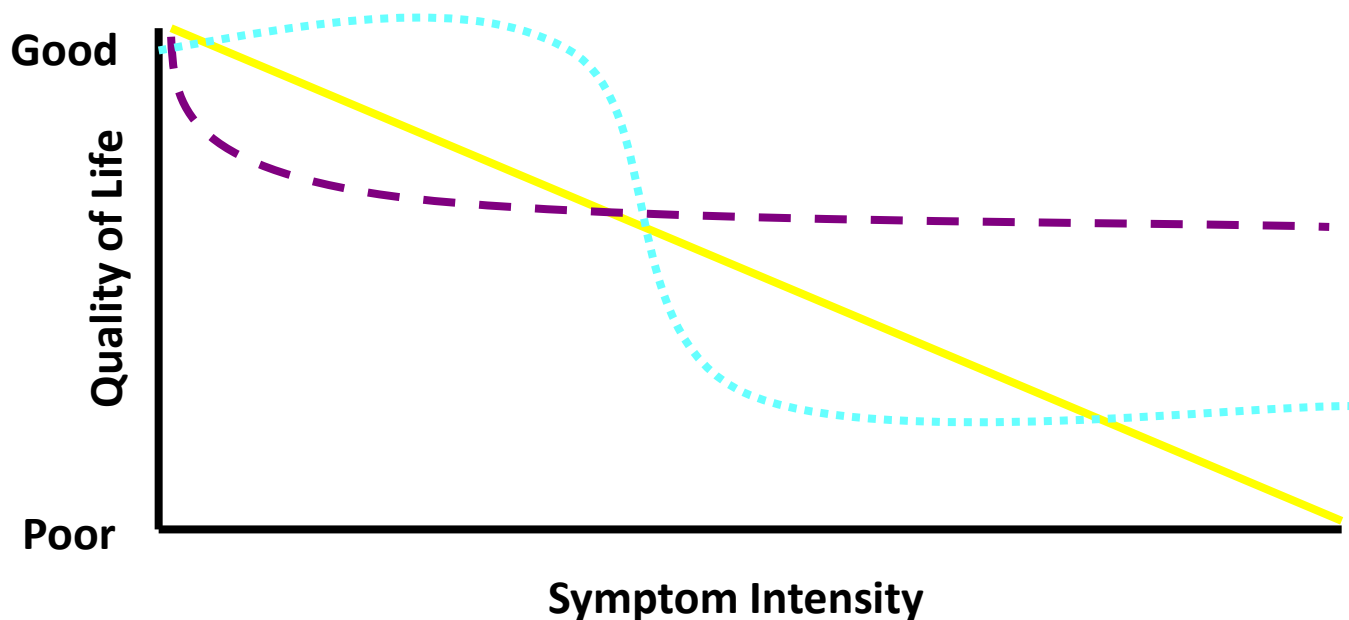
**A subset of quality of life, which revolves around four core domains:**

- physical functioning,
- psychological functioning
- social interaction
- disease and treatment related symptoms

**Objectivity - Individual's perception**

# Symptoms and QoL

**A distinction must be made between symptom assessment as a component part of a validated QOL tool and studies conducted specifically to assess a symptom**





## Health-related QoL instruments

### 1) Generic instruments:

MOS SF-36

SIP

### 2) Cancer-specific instruments:

EORTC QLQ-C30

FACT-G

### 3) Site-specific instruments:

EORTC QLQ-H&N35

UW-QOL

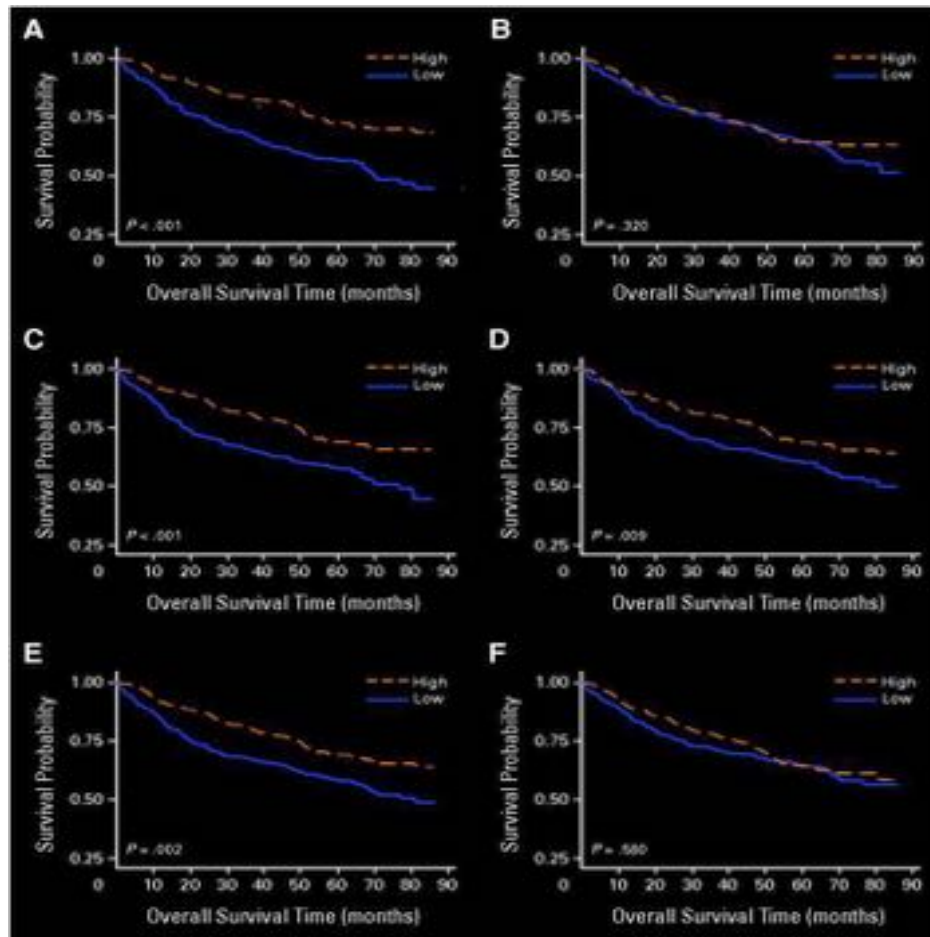


## Why is QoL evaluation critical in head and neck patients?

In head and neck cancer treatment, QoL issues and assessment of QoL outcomes are especially important for patients and their caregivers because of the potential impact on important functions such as:

- **swallowing**
- **speech**
- **breathing**
- **cosmesis**
- **communication**

## Why is QoL evaluation critical in head and neck patients?



Quality of life scores can predict survival  
among patients with head and neck cancer



# Clinical predictor of quality of life

- Feeding tube status

- Comorbid conditions

- Tracheotomy tube

- Time since diagnosis

- Chemotherapy and radiation therapy

- Cancer site and stage

- Primary site surgery

- Laryngectomy

- Neck dissection

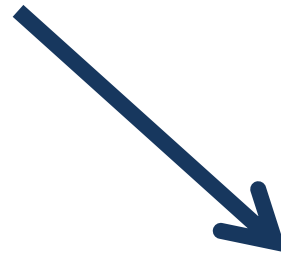
# Advanced head and neck cancer



**demolitive surgery**



**salvage surgery  
after CT-RT**



**primary treatment**



# Advanced head and neck cancer surgery

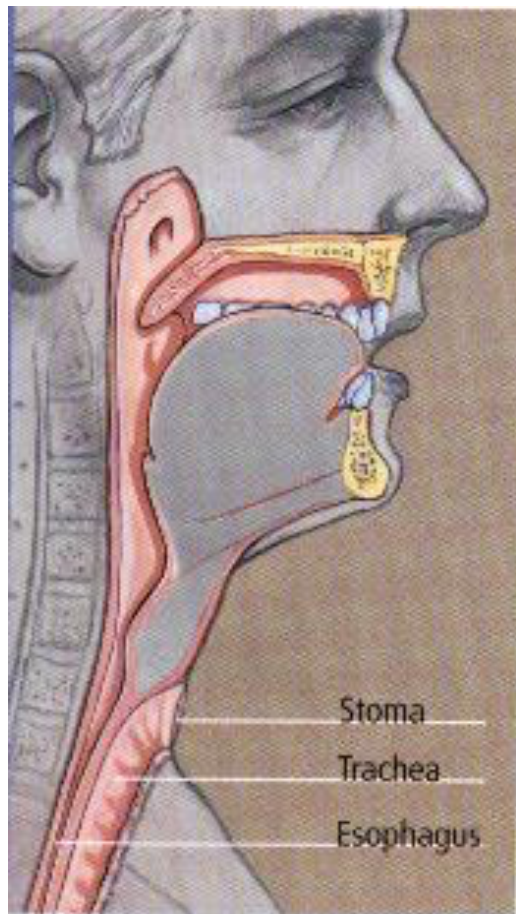
- **Demolitive surgery**

- oral cavity and oropharynx: commando, pull through, hemi-total glossectomy

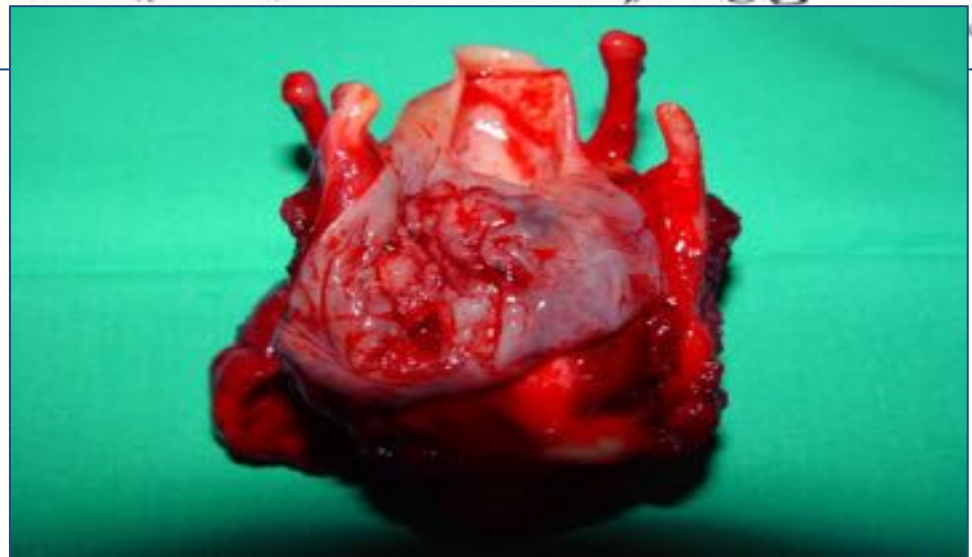
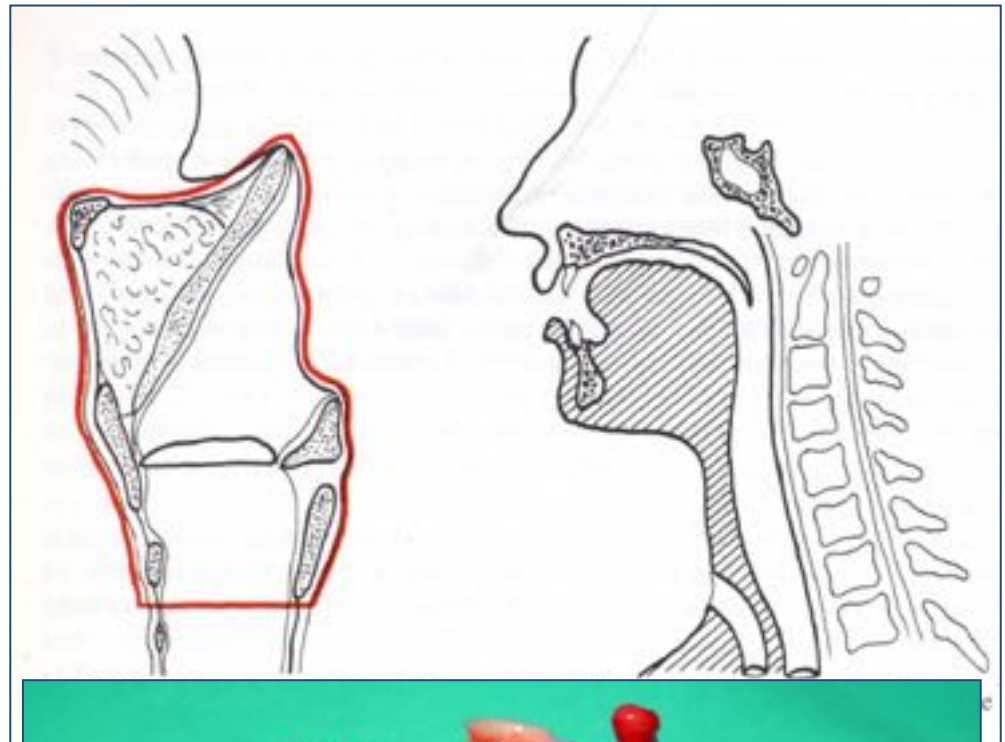
- larynx and hypopharynx: partial/total laryngectomy;  
total hypopharyngolaryngectomy

+ ND

- **+/- Reconstruction with pedunculated or free flaps**

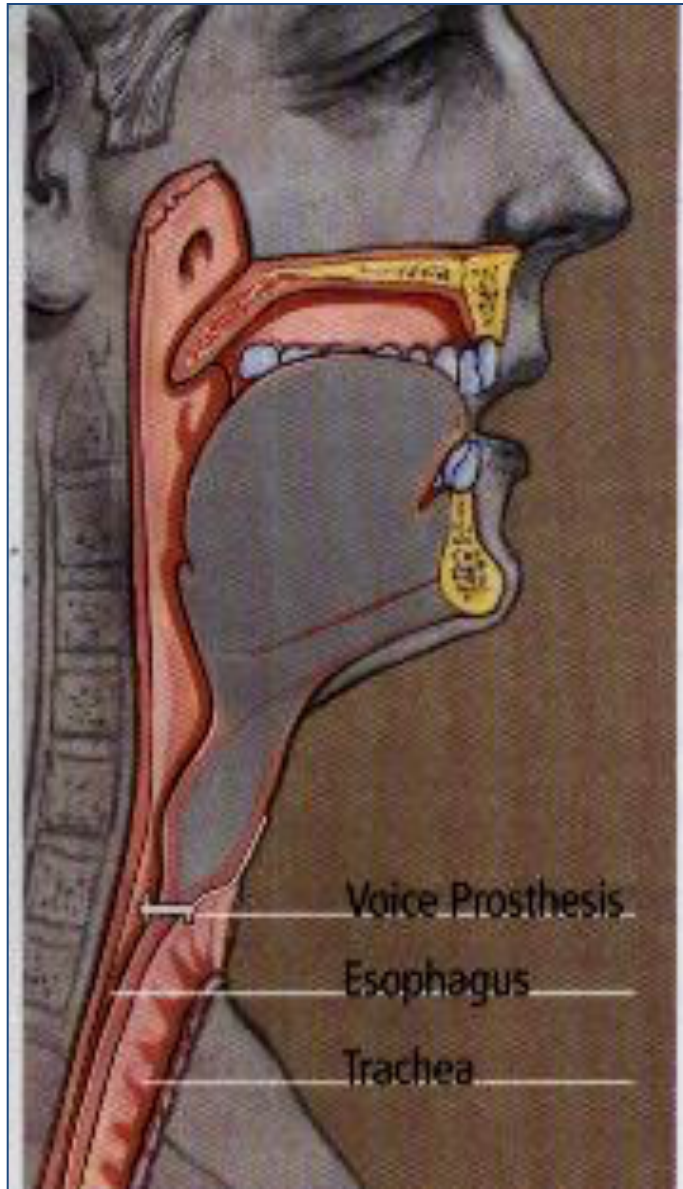


*After laryngectomy*



## Total laryngectomy

## Total laryngectomy with t-e prosthesis



# Total hypopharyngolaryngectomy and reconstruction with pectoralis major myocutaneous flap





**Right «commando» with  
partial faryngectomy and  
glossectomy, partial  
mandibulectomy and ND**

**and reconstruction with  
rectus abdominis free flap**





## Neck dissection

**Radical neck dissection**

late 19<sup>o</sup> century

**Functional neck dissection**

Suarez 1952

**Selective neck dissection**

Byers 1985

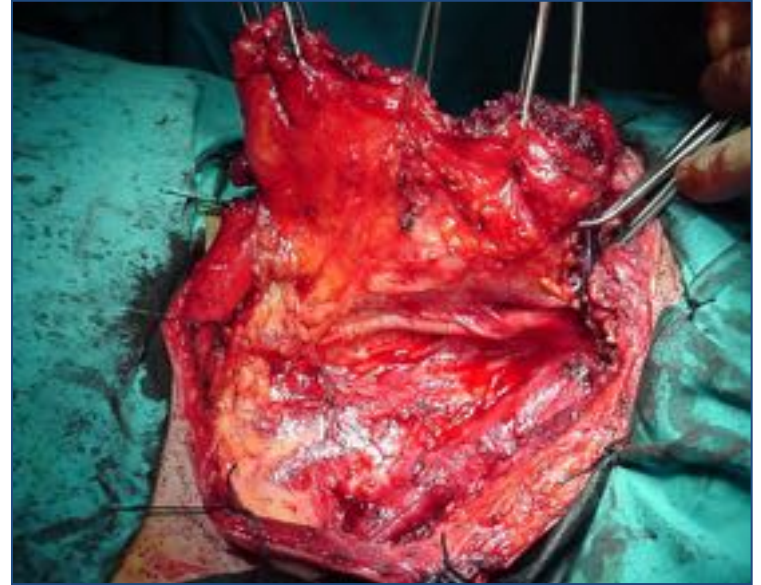
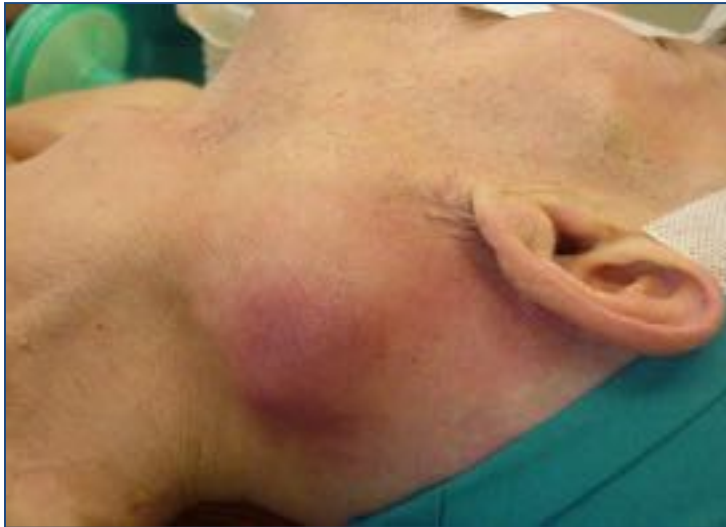
**Superselective neck dissection**

More recently

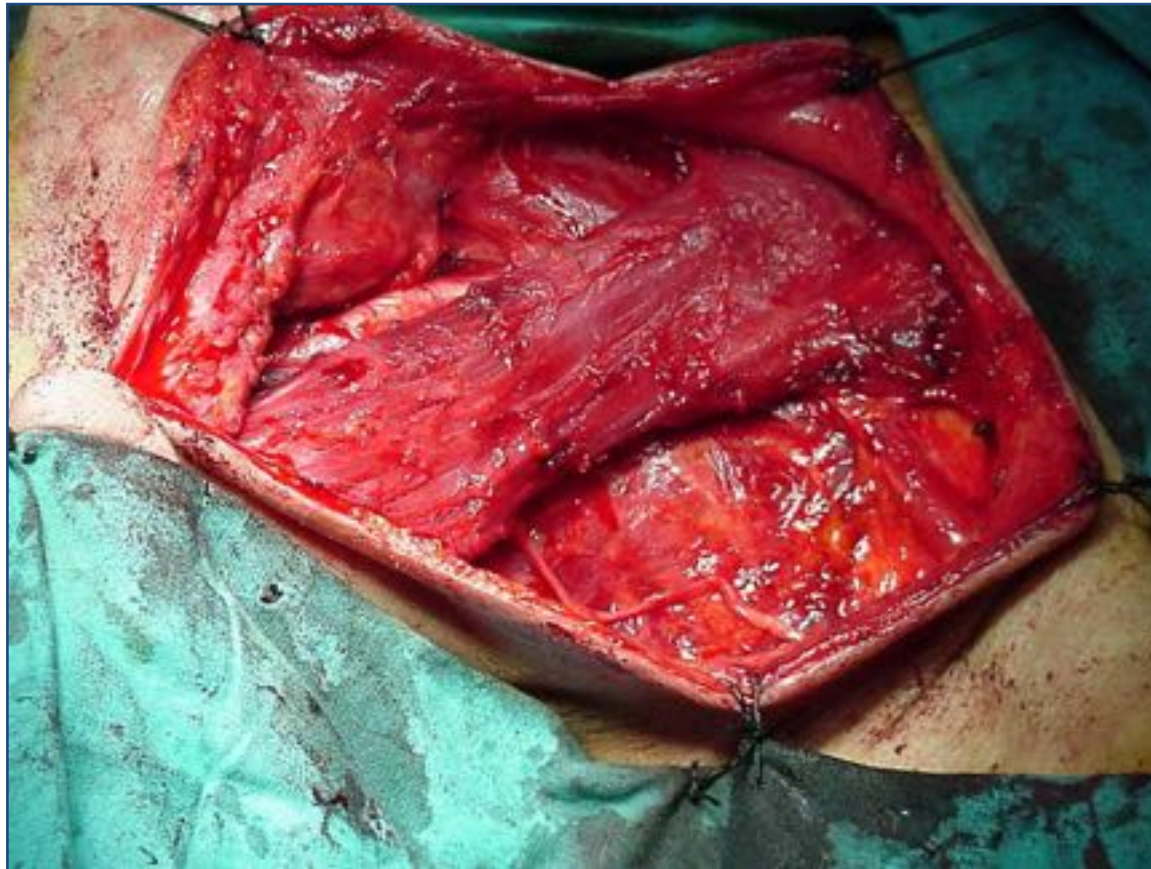


| 1991 Classification  | 2002 Classification   | 2008 Update   | 2011 Classification proposed<br>by Ferlito et al.   |
|--|---|---|---|
| (Committee for Head and Neck Surgery and Oncology of the American Academy of Otolaryngology–Head and Neck Surgery)                 | (American Head and Neck Society and Committee for Head and Neck Surgery and Oncology, American Academy of Otolaryngology–Head and Neck Surgery) | (American Head and Neck Society and Committee for Head and Neck Surgery and Oncology, American Academy of Otolaryngology–Head and Neck Surgery) | (Members of International Head and Neck Scientific Group)   |
| Radical neck dissection  | Radical neck dissection   | Classification and terminology of neck dissection has not changed.  | Any neck dissection is designated as “ND” and the removed lymph node levels or sublevels and/or non-lymphatic structures are denoted in parentheses |
| Modified radical neck dissection   | Modified radical neck dissection  | New recommendations have been made regarding the following:   |   |
| Selective neck dissection  | Selective neck dissection:  | - Boundaries between levels I and II and between levels III/IV and VI   |   |
| <ul style="list-style-type: none"> <li>• Supraomohyoid</li> <li>• Lateral</li> <li>• Posterolateral</li> <li>• Anterior</li> </ul> | each variation is depicted by “SND” and the use of parentheses to denote the levels or sublevels removed  | - Terminology of the superior mediastinal nodes (level VII)   |   |
| Extended neck dissection   | Extended neck dissection  | - The method of submitting surgical specimens for pathologic analysis   |   |

# Radical neck dissection



## Modified radical neck dissection type 3 (Functional neck dissection)



# Modified radical neck dissection type 1





## **Selective neck dissection**

## **Superselective neck dissection**

if correctly used in selected patients in the absolute respect of the oncological safety, are procedures that allow to shorten the surgical times and to reduce functional and cosmetic morbidities improving the quality of life.



## Long-term quality of life after treatment for locally advanced oropharyngeal carcinoma: Surgery and postoperative radiotherapy versus concurrent chemoradiation

Paolo Boscolo-Rizzo<sup>a\*</sup>, Marco Stellin<sup>a</sup>, Roberto Fuson<sup>a</sup>, Carlo Marchiori<sup>a</sup>, Alessandro Gava<sup>b</sup>,  
Maria Cristina Da Mosto<sup>a</sup>

cCRT (31) vs Surg and RT (26) [EORTC-QOQ30-EORTC QLQ-H&N35]

**better long term QoL in cCRT group**

**cCRT:** greater problems with teeth, open mouth, dry mouth and sticky saliva.

**Surg and RT:** higher problems with fatigue, pain, swallowing, social eating and social contact



# Long-Term Quality of Life After Total Laryngectomy and Postoperative Radiotherapy Versus Concurrent Chemoradiotherapy for Laryngeal Preservation

Paolo Boscolo-Rizzo, MD; Francesca Maronato, MD; Carlo Marchiori, MD; Alessandro Gava, MD; Maria Cristina Da Mosto, MD

cCRT (28) vs Surg and RT (39) [EORTC-QOQ30-EORTC QLQ-H&N35]

**better long term QoL in cCRT group**

**cCRT:** sticky saliva, dry mouth

**TL:** lower social, role, and physical functioning  
sleep disturbances, speech, senses,  
pain (EORTC-QOQ30)



## **REVIEW**

Comparison of quality of life outcomes in laryngeal cancer patients following chemoradiation vs. total laryngectomy

MARIA M. LOTEMPIO, MD, KEVIN H. WANG, BS, AHMED SADEGHI, MD, MARK D. DELACURE, MD, GUY F. JUILLARD, MD, and MARILENE B. WANG, MD, Los Angeles, California, and New York, New York

cCRT (20) vs Surg and RT (44) [UW-QOL]

**overall QoL score of both groups seems similar**

cCRT: pain, swallowing

TL: speech, shoulder function



# The effects of indwelling voice prosthesis on the quality of life, depressive symptoms, and self-esteem in patients with total laryngectomy

Beldan Polat • Kadir Serkan Orhan •  
Mustafa Caner Kesimli • Yasemin Gorgulu •  
Murat Ulusan • Kemal Deger

| Before voice prosthesis |                 |                     |                   | After voice prosthesis |                 |                     |                   |
|-------------------------|-----------------|---------------------|-------------------|------------------------|-----------------|---------------------|-------------------|
| No depression           | Mild depression | Moderate depression | Severe depression | No depression          | Mild depression | Moderate depression | Severe depression |
| 6                       | –               | –                   | –                 | 6                      | –               | –                   | –                 |
| –                       | 16              | –                   | –                 | 12                     | 4               | –                   | –                 |
| –                       | –               | 5                   | –                 | –                      | 4               | 1                   | –                 |
| –                       | –               | –                   | 3                 | –                      | –               | 1                   | 2                 |

## Indwelling voice prosthesis :

improve quality of life, self-esteem, and sexual function ( $p < 0.05$ ), symptoms of depression and anxiety were regressed ( $p < 0.05$ ).



## **Tumor site and disease stage as predictors of quality of life in head and neck cancer: a prospective study on patients treated with surgery or combined therapy with surgery and radiotherapy or radiochemotherapy**

Dennis Veldhuis • Gunther Probst • Astrid Marek •  
Volker Noack • Ahmet Ural • Irenaeus Adamietz •  
Stefan Dazert • Amir Minovi

OF group 32, larynx group 35  
EORTC QLQ-C30 and H&N35

**QoL score of both groups 10 months after the end of the therapies is similar**

OF group : fatigue and oral cavity pain

Larynx group: loss of sensual function and coughing

## ORIGINAL ARTICLE

# Quality of Life After Neck Dissection

Hiroyuki Inoue, MD; Ken-ichi Nibu, MD, PhD; Miki Saito, MD; Naoki Otsuki, MD; Haruhiko Ishida, MD; Tetsuro Onitsuka, MD; Takashi Fujii, MD; Kazuyoshi Kawabata, MD; Masahisa Saikawa, MD

**Table 4. Impact of Preservation of Sternocleidomastoid Muscle (SCM) on Postoperative Quality of Life**

| Question        | No. of Sacrificed SCMs |               |               | P Value                      |
|-----------------|------------------------|---------------|---------------|------------------------------|
|                 | 0<br>(n = 15)          | 1<br>(n = 39) | 2<br>(n = 20) |                              |
| Dressing        | 3.7                    | 3.5           | 3.0           | .046 (0-1 vs 2)              |
| Combing         | 3.8                    | 3.7           | 3.1           | .06 (0-1 vs 2)               |
| Facial swelling | 4                      | 4.1           | 4.0           | .52                          |
| Work            | 4.5                    | 3.6           | 3.3           | .006 (0 vs 1-2)              |
| Leisure         | 4.1                    | 3.8           | 3.2           | .11 (1 vs 2)<br>.02 (0 vs 2) |

**Table 5. Impact of Preservation of Spinal Accessory Nerve (SAN) on Postoperative Quality of Life**

| Question        | No. of Sacrificed SANs |               |               | P Value        |
|-----------------|------------------------|---------------|---------------|----------------|
|                 | 0<br>(n = 36)          | 1<br>(n = 27) | 2<br>(n = 11) |                |
| Dressing        | 3.7                    | 3.2           | 3.2           | .08 (0 vs 1-2) |
| Combing         | 3.7                    | 3.4           | 3.5           | .30            |
| Facial swelling | 4.0                    | 4.2           | 3.7           | .24            |
| Work            | 4.1                    | 3.3           | 3.5           | .02 (0 vs 1-2) |
| Leisure         | 3.9                    | 3.4           | 3.1           | .04 (0 vs 1-2) |

Sacrifice of SCM and /or SAN :  
significant effect on daily activity, work and leisure

## The effect of neck dissection on quality of life after chemoradiation

Comparing change in QOL scores between baseline and 1-year for patients treated with chemoradiation alone versus those requiring neck dissection.<sup>a</sup>

| Measure                    | Chemoradiation<br>N=65 | + Neck dissection<br>N=38 | p-value      |
|----------------------------|------------------------|---------------------------|--------------|
| <b>SF36</b>                |                        |                           |              |
| Physical Functioning       | -8.3                   | -8.2                      | .993         |
| Role Physical              | -10.9                  | -8.6                      | .829         |
| <b>Body Pain</b>           | <b>8.0</b>             | <b>-2.2</b>               | <b>.041*</b> |
| General Health Perceptions | -0.4                   | 1.6                       | .661         |
| Vitality                   | 1.8                    | 1.2                       | .901         |
| Social Functioning         | 2.5                    | 8.2                       | .338         |
| Role Emotional             | 6.3                    | 7.9                       | .877         |
| Mental Health              | 6.2                    | 7.8                       | .700         |
| <b>HNQOL</b>               |                        |                           |              |
| Eating                     | -20.9                  | -24.8                     | .511         |
| Communication              | -5.2                   | -6.6                      | .834         |
| Emotional Distress         | 11.0                   | 11.1                      | .977         |
| Pain                       | 4.7                    | 3.3                       | .801         |

*Stage IV oropharyngeal cancer patients*

**After post-treatment ND decrement only in bodily pain domain score, but other QoL scores are similar to those of patients undergoing CT-RT alone**

# THE EFFECT ON QUALITY OF LIFE OF NECK DISSECTION AFTER CHEMORADIATION

Table 4b

Comparing change in QOL scores between baseline and 1-year for patients treated with modified radical neck dissection versus those treated with selective neck dissection.<sup>a</sup>

| Measure                    | Modified Radical Neck Dissection<br>N=16 | Selective Neck Dissection<br>N=22 | p-value |
|----------------------------|--|-----------------------------------|---------|
| <b>SF36</b>                |  |                                   |         |
| Physical Functioning       | -12.0                                    | -5.5                              | .440    |
| Role Physical              | -3.1                                     | -12.5                             | .620    |
| Body Pain                  | -1.9                                     | -2.4                              | .955    |
| General Health Perceptions | -1.8                                     | 4.0                               | .461    |
| Vitality                   | 0.9                                      | 1.4                               | .952    |
| Social Functioning         | 10.9                                     | 6.3                               | .632    |
| Role Emotional             | -2.1                                     | 15.1                              | .322    |
| Mental Health              | -0.3                                     | 13.6                              | .029*   |
| <b>HNQOL</b>               |  |                                   |         |
| Eating                     | -25.0                                    | -24.6                             | .967    |
| Communication              | -8.6                                     | -5.1                              | .778    |
| Emotional Distress         | 8.9                                      | 12.7                              | .575    |

# Perspectives

Patient Priorities

Pretreatment Patient Optimization

Customized Treatment

↑ QoL