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RUOLO DELLA CHIRURGIA NEL CARCINOMA ANAPLASTICO

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INTRODUCTION

Anaplastic thyroid cancer (ATC) is a rare form of Thyroid Cancer (**1–2%** of all thyroid cancers)

ATC accounts for the majority of deaths from thyroid carcinoma (***survival rate of <20% at 1 year***)

ATC is characterized bya *rapid growth* and the expanding neck mass: with insufficient treatment, the disease most often leads to death in suffocation

Unfortunately, very little progress has been made to improve outcomes: expecially for the rarity, aggressive nature, and refractoriness of this cancer

INTRODUCTION

The clinical management of ATC can be challenging and requires a multidisciplinary approach

In according to American Thyroid Association guidelines

SURGERY, RADIOTHERAPY AND/OR CHEMOTHERAPY

should be considered for a multidisciplinary action

Rapid evaluation and establishment of treatment goals are imperative for optimum patient management

MANAGEMENT OPTIONS

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THYROID CANCER AND NODULES

American Thyroid Association Guidelines for Management of Patients with Anaplastic Thyroid Cancer

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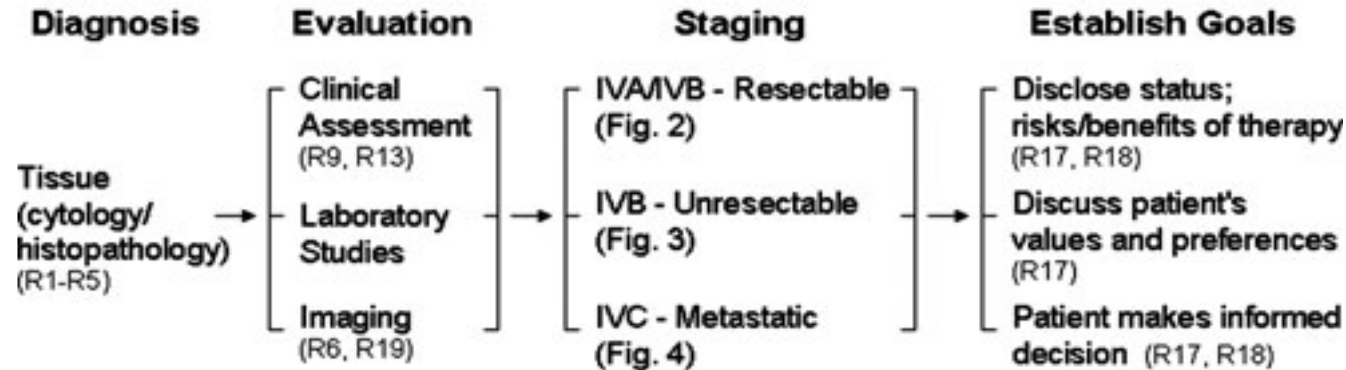
for the American Thyroid Association Anaplastic Thyroid Cancer Guidelines Taskforce

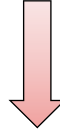
Anaplastic Thyroid Carcinoma Management Options



An overview of management options for patients with Anaplastic Thyroid Carcinoma

DIAGNOSIS

The diagnosis of ATC can often be suspected clinically



a rapidly growing neck mass with tendency to infiltrate adjacent structures
(larynx, tracheal esophagus and laringeal nerve, etc)

But the large differential diagnosis is cytological and histological

- **RECOMMENDATION 1**
  Morphologic diagnosis with appropriate immunostaining as relevant is mandatory to exclude other less aggressive and treatable entities that can mimic ATC.
  Strength of Recommendation: Strong
  Quality of Evidence: Moderate

Morphological diagnosis of Fine Needle Aspiration (FNA) biopsy is mandatory, but FNA may not always yield diagnostic material.

- **RECOMMENDATION 2**
  FNA cytology or core biopsy should play a role in the preoperative diagnosis of ATC. In cases in which the limited sampling of FNA or core biopsy yields material that is nondiagnostic, open biopsy should be performed to obtain diagnostic tissue.
  Strength of Recommendation: Strong
  Quality of Evidence: Low

If FNA biopsy is not diagnostic, core biopsy or open biopsy should be performed.

TNM

All ATC are stage IV

STAGE IVA: lesions are intrathyroidal (T4a), and N0, M0 (no distant metastases).

STAGE IVB: the primary tumor has gross extrathyroidal extension, any N, M0.

STAGE IVC: patients have distant metastases.

The initial approach to patients with stage IVA or IVB disease depends on whether the tumor is **resectable or unresectable** at the time of diagnosis.

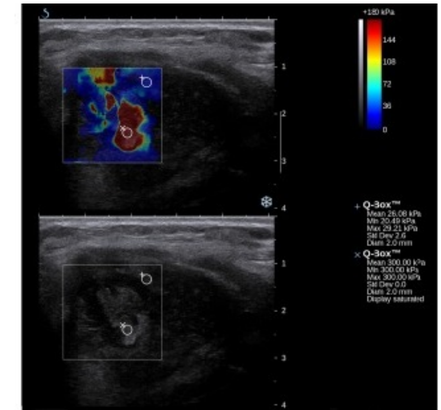
CRITERIA FOR RESECTABILITY

2 CRITERIA

Extent of local invasion and the structures involved

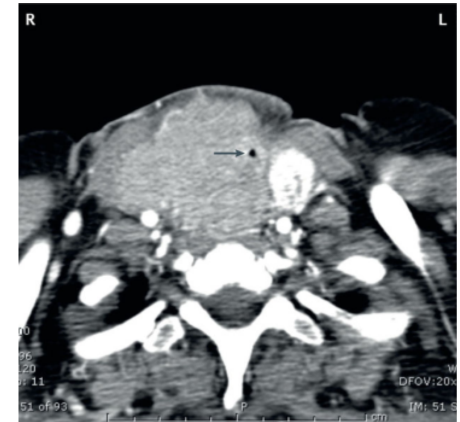
Routine preoperative imaging in all patients should be performed to evaluate the extent of disease locally and to exclude the presence of distant metastasis

CRITERIA FOR RESECTABILITY



NECK ULTRASOUND:

A high-resolution ultrasound of the neck should be obtained to evaluate the primary thyroid tumor and to assess for involvement of the central and lateral lymph node basins.



MRI and/or CT scan:

Cross-sectional imaging of the neck and chest with MRI and/or CT scan is also imperative to determine the presence of regional disease and exclude distant metastasis.

CRITERIA FOR RESECTABILITY

The determination of whether the tumor is resectable should be based on

What structures are involved
(by direct tumor invasion or by lymphatic Invasion)

Vessels (Internal jugular vein, Carotid artery, Superior vena cava)
Nerves (e.g., recurrent laryngeal, vagus, spinal accessory and phrenic)
Sternocleidomastoid muscle
Esophagus
Trachea

Whether a satisfactory resection can be achieved (R0/R1)

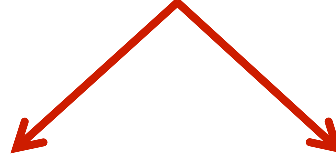
Complete resection (R0/R1) is associated with prolonged disease-free survival

Whether resection of the involved structure results in significant morbidity or mortality

In patients with **systemic disease**, **resection** of locoregional disease **for palliation** may be considered if there is **impending airway or esophageal obstruction**.

CRITERIA FOR RESECTABILITY

In patients with symptoms suggesting local invasion

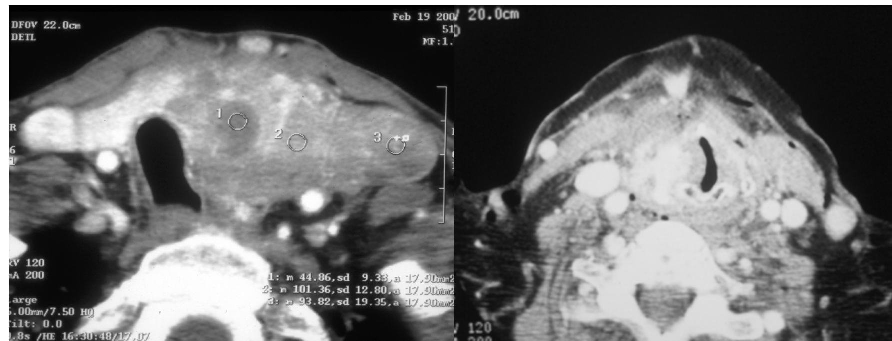


Recurrent Laryngeal Nerve **invasion**

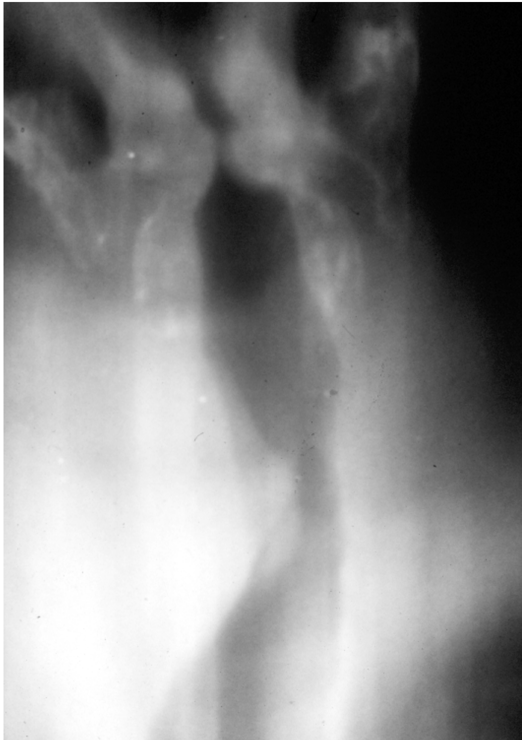
Tracheal and/or esophageal **invasion**

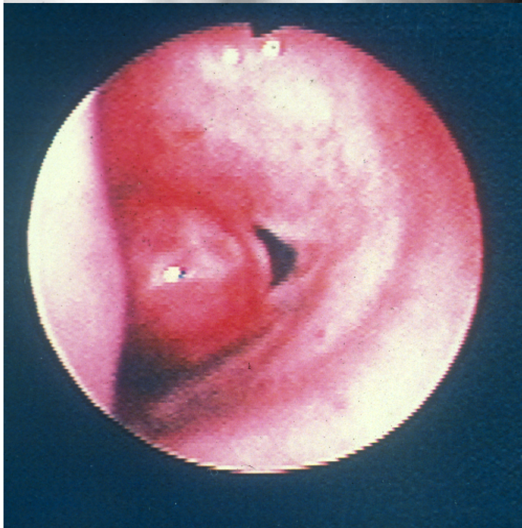
A direct laryngoscopy

Bronchoscopy and esophagoscopy

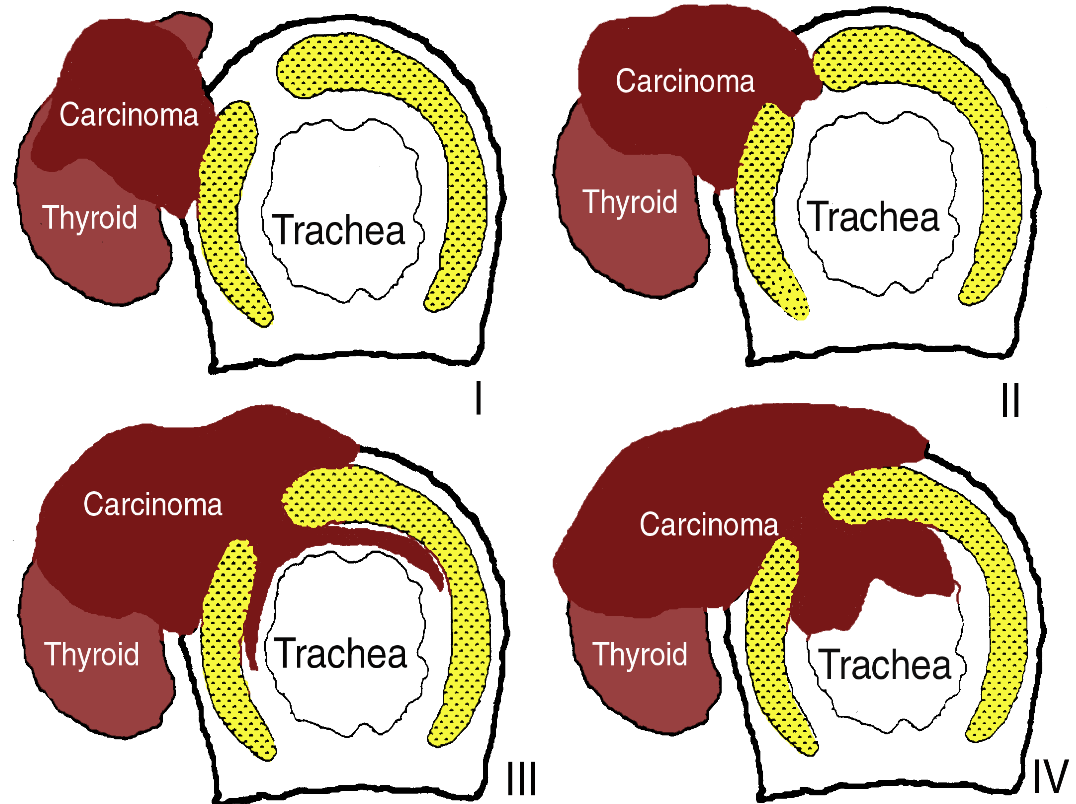


TRACHEAL INFILTRATION





Staging of tracheal infiltration related to histological extension of the invasion



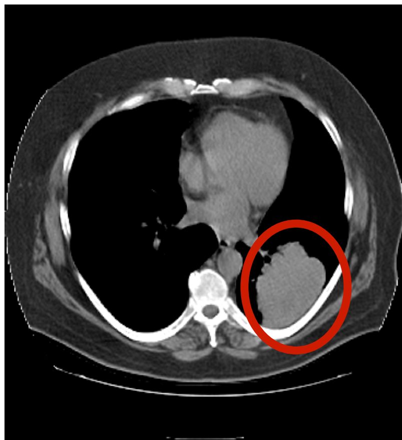
INCIDENCE OF DISTANT METATASIS

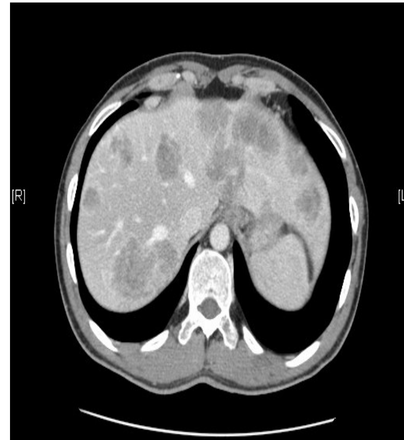
80
70
60
50
40
30
20
10
0

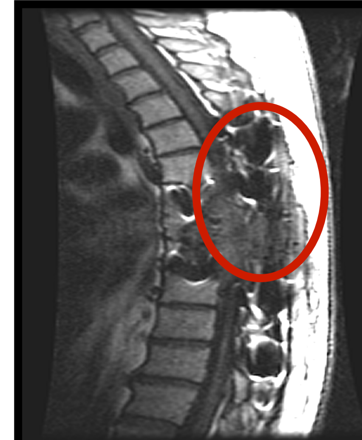
78 % | 58 % | 29 % | 24 % | 20 % | 18 % | 13 % | 13 %

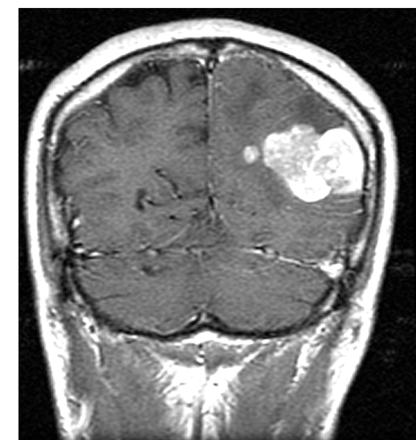
- Lungs
- Intrathoracic Lymphnodes
- Pleura
- Adrenal Gland
- Liver
- Brain
- Bones
- Kidney

Besic N, Gazic B.
Sites of metastases of anaplastic thyroid carcinoma: autopsy findings in 45 cases from a single institution. Thyroid. 2013.









SURGERY

CRITERIA FOR RESECTABILITY

2 CRITERIA

- Distinguishing between locoregional disease and distant metastatic disease
- Extent of local invasion and the structures involved

Patients **with resectable disease** and **without distant metastases** should be considered for surgery and locoregional radiation therapy (with or without systemic therapy)

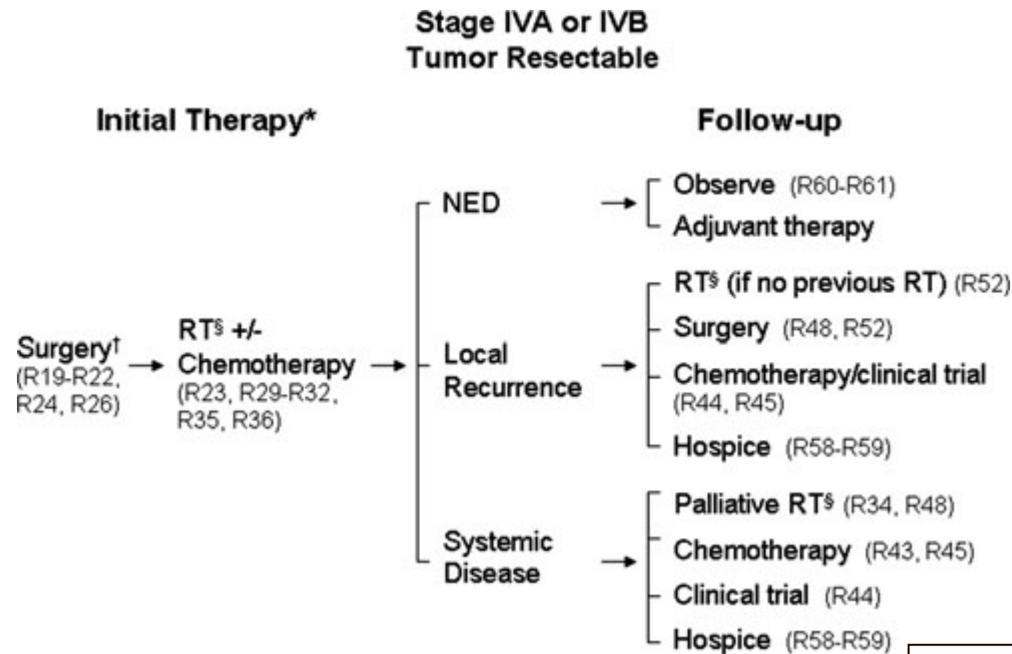
Gross tumor resection, not debulking, is the goal of surgery!

SURGERY

RECOMMENDATION 19

Resectability of ATC should be determined by routine preoperative imaging studies (ultrasound, CT, MRI, and/or PET scan of the neck and chest). If locoregional disease is present and a grossly negative margin (R1 resection) can be achieved, surgical resection should be considered. In patients with systemic disease, resection of the primary tumor for palliation should be considered to avoid current or eventual airway or esophageal obstruction.

Strength of Recommendation: Strong
Quality of Evidence: Moderate



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SURGERY

INTRATHYROIDAL ATC

A total lobectomy (???) or total or near-total thyroidectomy with a therapeutic lymph node dissection should be performed.

R1 RESECTION

In patients with extrathyroidal invasion, an en-bloc resection should be considered if grossly negative margins (R1 resection) can be achieved.

DEBULKING

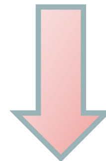
Incomplete resection or tumor debulking (R2) should also not be performed because it is unlikely to be beneficial for local control and/or survival.

SURGICAL RISK TO RECURRENT LARYNGEAL NERVE

Frequently the patient presents a ipsilateral recurrent laryngeal nerve palsy at time of diagnosis

RECOMMENDATION 24

Every attempt should be made to identify the contralateral recurrent laryngeal nerve, especially if the ipsilateral nerve is paralyzed, to protect the nerve from injury, which may lead to bilateral vocal cord paralysis and requirement for tracheostomy.



A nerve monitor may be quite helpful to confirm nerve function (?)

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Surgery after radiotherapy and/or chemotherapy in initially unresectable ATC

In rare case an ATC unresecable who receive initial radiotherapy with or without chemotherapy ***may become resectable***

Patients who have a durable response and who have residual disease may be considered operative candidates if there is no other disease outside the neck.

CONCLUSION

Anaplastic thyroid cancer (ATC) is a rare but highly lethal form of thyroid cancer (1–2% of all thyroid cancers)

All ATC are stage IV

Surgery depends
on whether the tumor is resectable

STAGE IVA
STAGE IVB (Resectable)

Patients with **resectable disease** and **without distant metastases** should be considered for surgery and locoregional radiation therapy
(with or without systemic therapy)

Gross tumor resection, not debulking, is the goal of surgery!

CONCLUSION

In the assessment of a rapidly growing neck mass,
necessary preoperative evaluations must be completed quickly

A multimodality management plan should be rapidly formulated and implemented by a **multidisciplinary** thyroid cancer management team

For this reason a multidisciplinary approach and the treatment in high volume centres are necessary

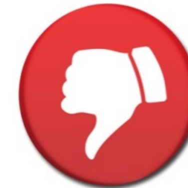
CONCLUSION

PREVENTION IS THE CARE

ATC: peak incidence **6-7th decade**
female 55-77%

Multinodular goiter in elderly

Wait & see



SURGERY IN HIGH VOLUME CENTRES

Gemelli

Fondazione Policlinico Universitario A. Gemelli
Università Cattolica del Sacro Cuore

Grazie !