



ANAPLASTIC THYROID CARCINOMA



ITALIAN CHAPTER

Roma, 9-12 novembre 2017

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Regione
Lombardia

ASST Valle Olona





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Conflitti di interesse



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Ai sensi dell'art. 3.3 sul conflitto di interessi, pag 17 del Regolamento Applicativo Stato-Regioni del 5/11/2009, dichiaro che negli ultimi 2 anni non ho avuto rapporti diretti di finanziamento con soggetti portatori di interessi commerciali in campo sanitario



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Anaplastic Thyroid Carcinoma, Version 2.2015: Clinical Practice Guidelines in Oncology

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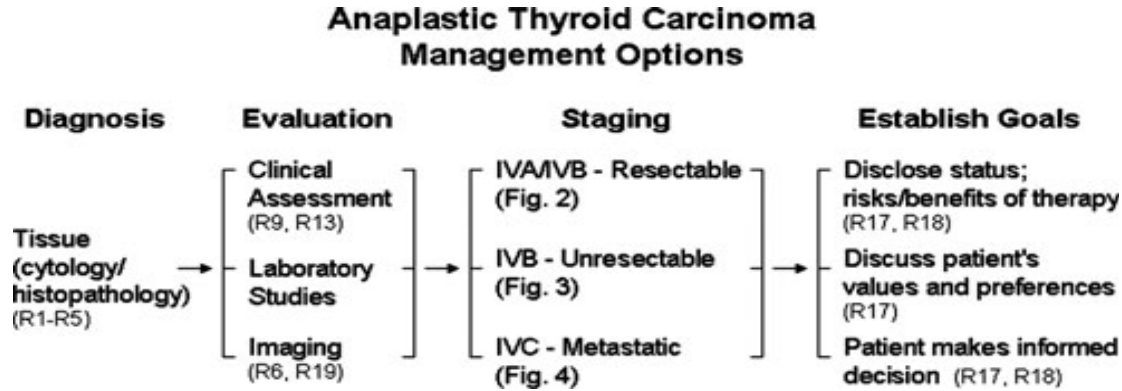


FIG. 1. An overview of management options for patients with anaplastic thyroid carcinoma includes confirming the diagnosis, thoroughly evaluating the patient to permit accurate staging of the disease, and subsequently establishing treatment goals according to the patient's wishes. Recommendations and figures that pertain to each topic are noted in this and subsequent figures.



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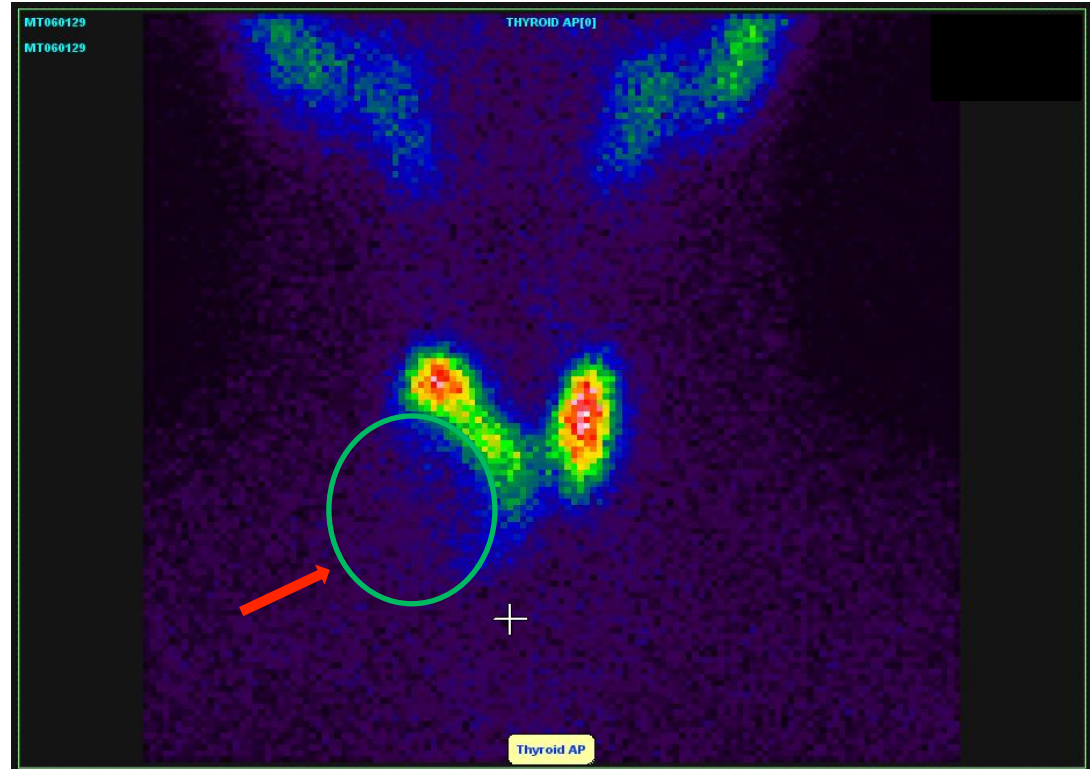
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ANAPLASTIC THYROID CARCINOMA (ATC)

Initial Diagnosis:

Diagnosis is usually based
on the functional finding
of a scintigraphically
“cold” primary mass in
the thyroid bed and
FNAb (Red Arrow)





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ATC is typically diagnosed based on clinical symptoms, unlike differentiated thyroid carcinoma, which is typically diagnosed after fine-needle aspiration (FNA) on a suspicious thyroid nodule

Morphological diagnosis of FNA biopsy may be diagnostic, but FNA may not always yield diagnostic material.



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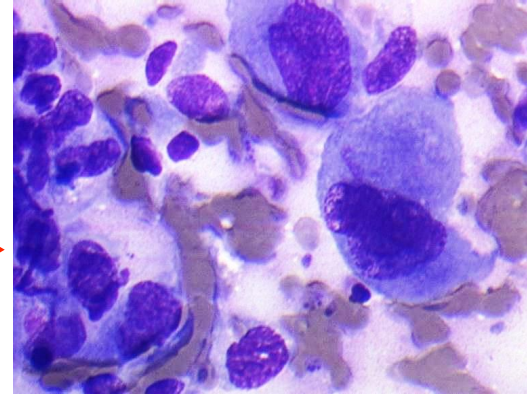
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In cases in which the limited sampling of FNA biopsy yields mainly necrotic or inflamed tissue, there may be a need for core biopsy or open biopsy.

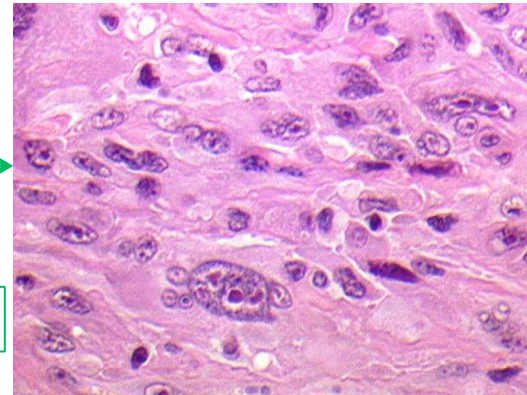
There is no cytologic description of the paucicellular variant of ATC, likely due to an inability to obtain diagnostic tissue in this setting; core biopsy or open biopsy is usually required for this diagnosis

* G. Serio - Medical Pathologist

*ATC - Cytology



*ATC - Histology



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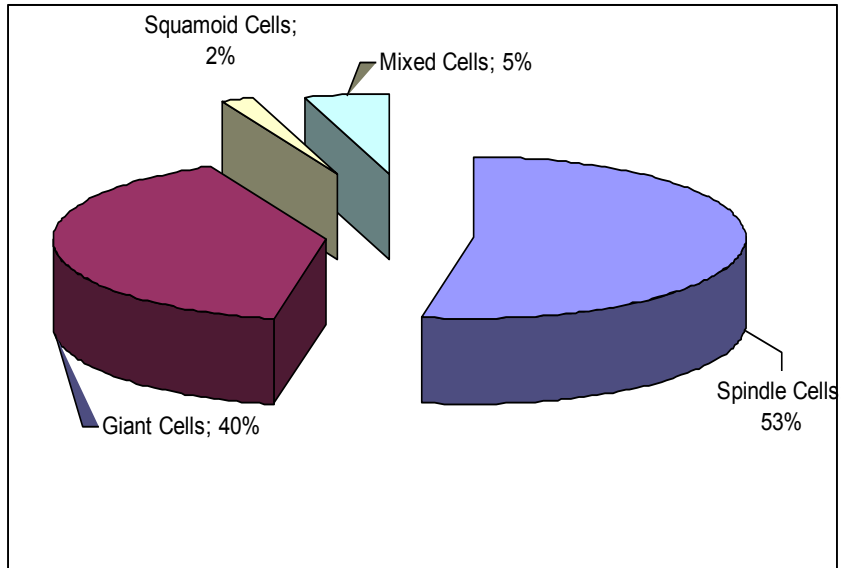
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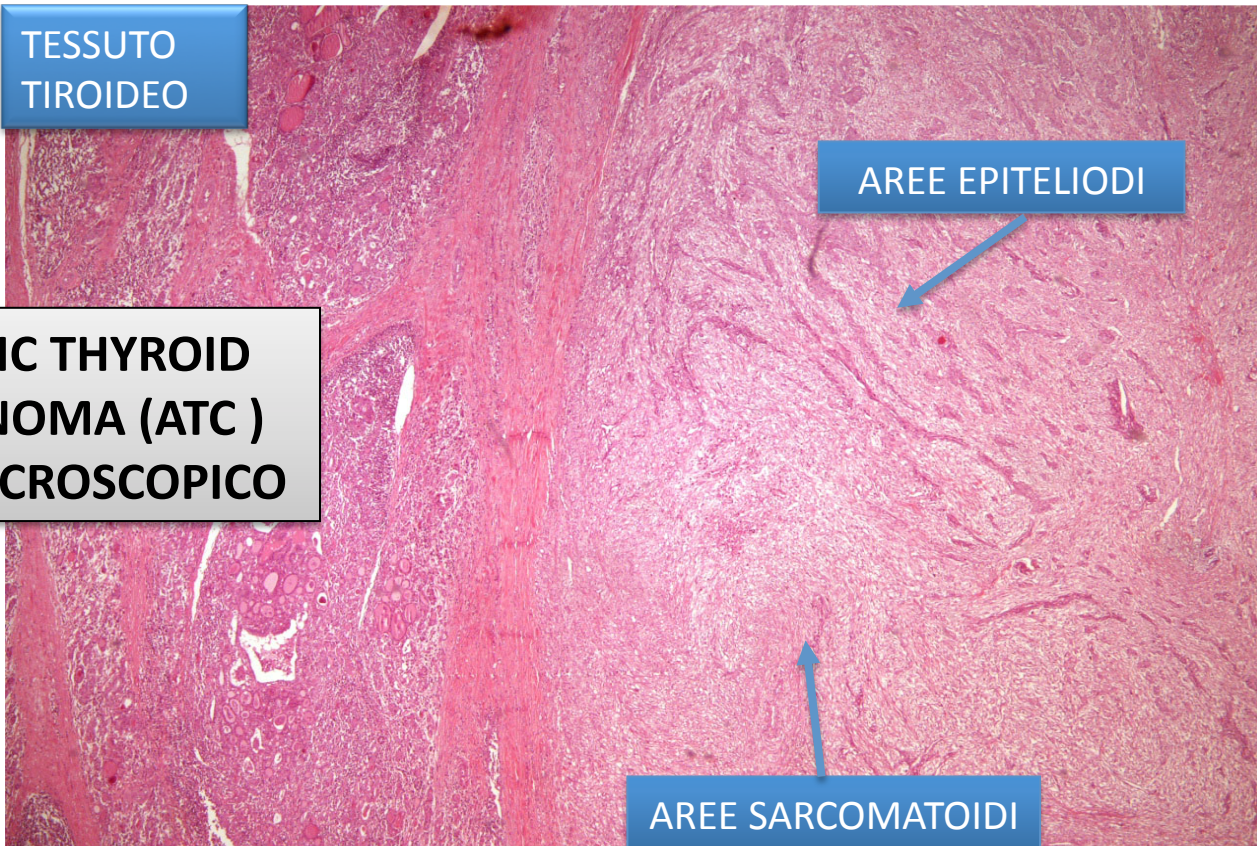
- Diagnosis is usually based on the functional finding of a Scintigraphically “cold” primary mass in the thyroid bed and FNAC
- ATC may be divided into 4 subgroups mainly depending on predominant cell morphology: spindle cells (53%) - giant cells (40%) - squamoid cells (2%) - mixed cells (5%)



No correlation between the different subgroups of ATC and **Survival**



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ANAPLASTIC THYROID CARCINOMA



ATCs are aggressive undifferentiated tumors, with a disease-specific mortality approaching 100%

Patients with anaplastic carcinoma are often older than those with differentiated carcinomas, with a mean age at diagnosis of approximately 71 years. 60% to 70% of patients are women.

Approximately 50% of patients with ATC have either a prior or coexisting differentiated carcinoma.

4/48 (8.3%) patients had a clinical history of co-existing differentiated thyroid carcinoma (DTC)



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Patients with ATC may present with symptoms such as rapidly enlarging neck mass, dyspnea, dysphagia, neck pain, Horner's syndrome, stroke, and hoarseness due to vocal cord paralysis.

Patients with ATC present with extensive local invasion, and distant metastases are found at initial disease presentation in 15% to 50% of patients

Baroli et al. Minerva Endocrinol.- 2010

4/48 (8,3%) survived more than 1 year

McIver (Surgery - 2001) reports a 9,7% of long surviving (more than 1 year) patients



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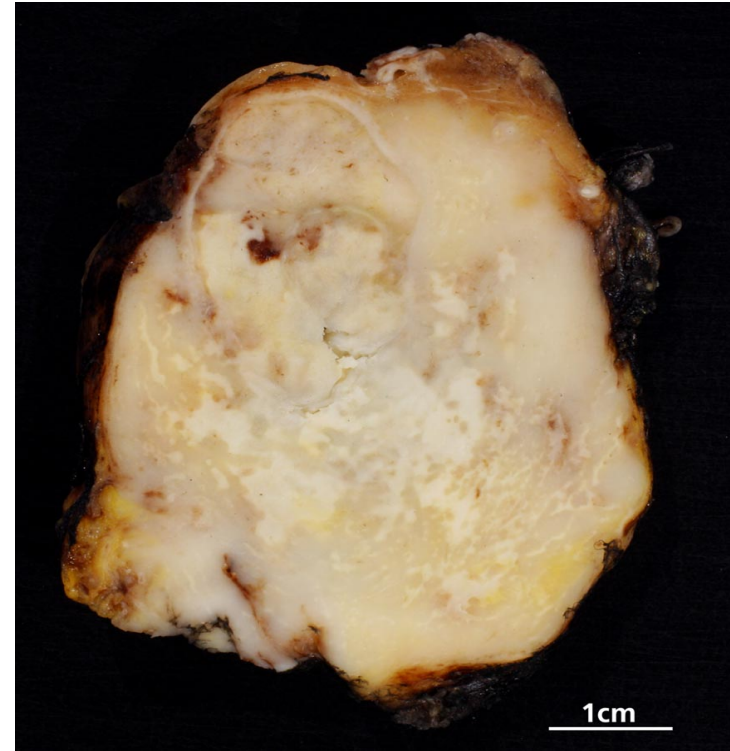
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More than 80% of patients with ATC have a history of **Goiter**.

The mean survival of patients with primary tumour size >6 cm was 3.7 months, as against 6.2 months for those with primary tumour size <6 cm

Baroli et al. Minerva Endocrinol.- 2010

Staging include morphological imaging (CT) of the brain, neck (primary tumour and identification of locoregional metastases), chest and upper abdomen (search for distant metastases) and cancer-specific imaging with 18-FDG PET-CT whole body scan





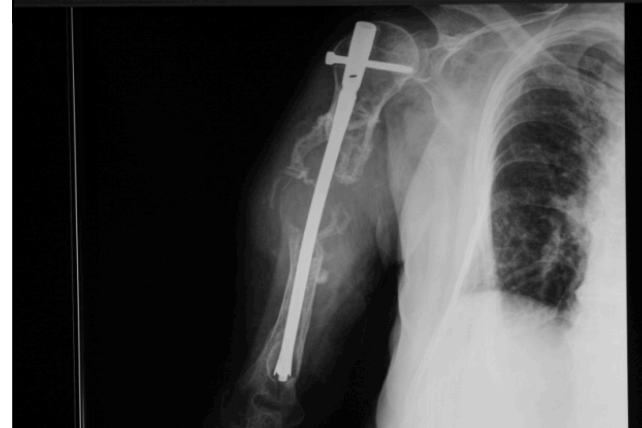
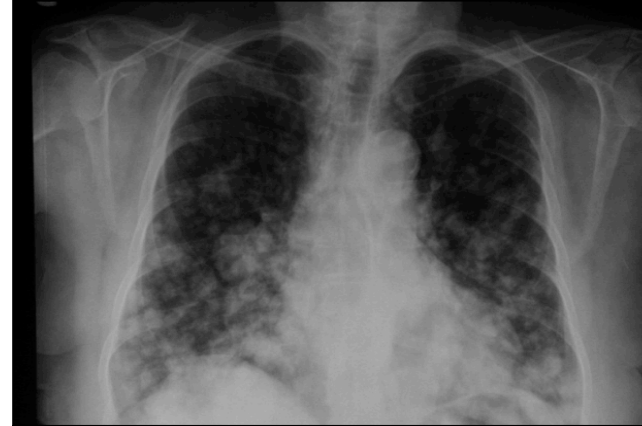
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Secondary localizations mainly in the lungs, the bones (usually lytic lesions) and the brain.





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Differentiated thyroid carcinomas can concentrate iodine, express TSH receptor, and produce thyroglobulin (Tg), whereas poorly differentiated or undifferentiated carcinomas typically do not.

Therefore, ¹³¹Iodine imaging and Tg measurement cannot be used in patients with ATC; radioactive iodine treatment is not effective, except in selected cases where coexist histological hybrid mixed forms



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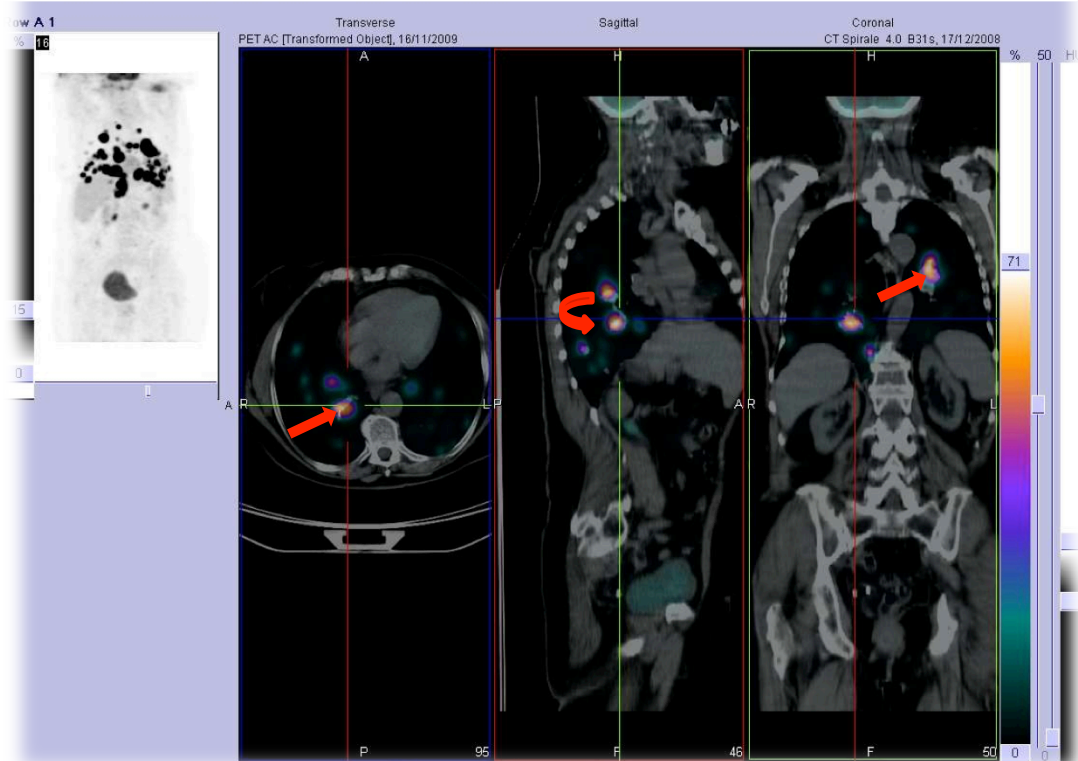
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Anaplastic
Thyroid
Carcinoma:
Lung Metastasis
(Red Arrows)

At diagnosis 14/48 patients (29.2%) had distant metastasis (11 lung metastasis, 1 bone metastasis, 1 mediastinal node metastasis, 1 intestinal metastasis)

Baroli (Minerva Endocrinol. - 2010)





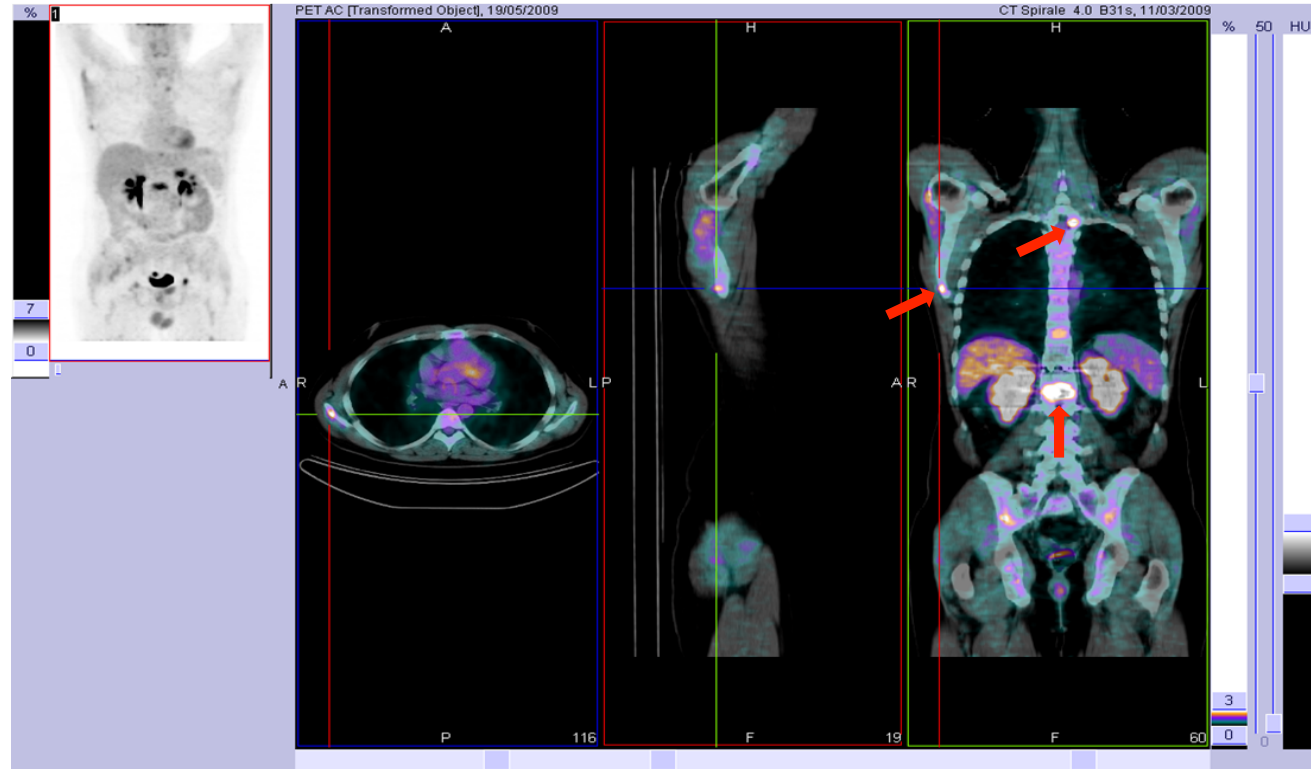
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ANAPLASTIC THYROID CARCINOMA



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Anaplastic
Thyroid
Carcinoma:
Bone Metastasis
(Red Arrows)





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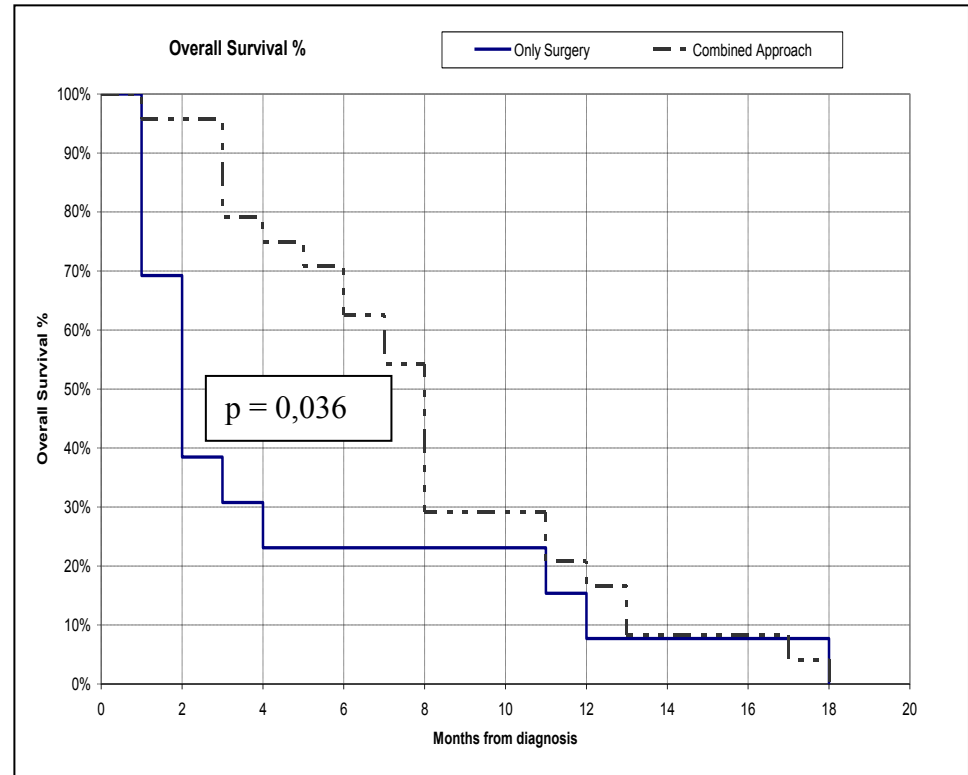
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The mean survival of patients treated with surgery alone (13/48, 27.1%) was 4.6 months, whereas in patients receiving combined multimodal therapy consisting of EBRT, Surgery and Chemotherapy (30/48, 62.5%) it was 8 months.

Student's t-test for differences between means showed this difference to be significant ($p = 0.036$)

Anaplastic Thyroid Carcinoma
Practical Aspects of Multimodal Therapy and data emerging from a 40-years experience at a single Italian institution
Baroli et al. *Minerva Endocrinol.* 2010;35:9-16





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Our findings are similar to those reported in the literature and reflect the course of the disease and the clinical response to the available therapeutic armamentarium, remembering that mean survival time in patients with a primary tumour <6 cm is longer (6.2 vs 3.7 months), whereas age at onset does not modify the final prognosis.

We had a mean surviving of 5,7 months in patients aged more than 60 years against a mean of 4,5 months in younger patients (no statistical evidence). Kebebew (Cancer - 2005) reported an opposite behaviour (better prognosis for younger patients).

The persistence of death due to asphyxia in a fair proportion of patients (37% of those with definitive histology) makes us understand how frequent locoregional recurrence is and that the clinical condition of asphyxia is not a prerogative of patients ineligible for extensive surgical resection only (Stage IV B)



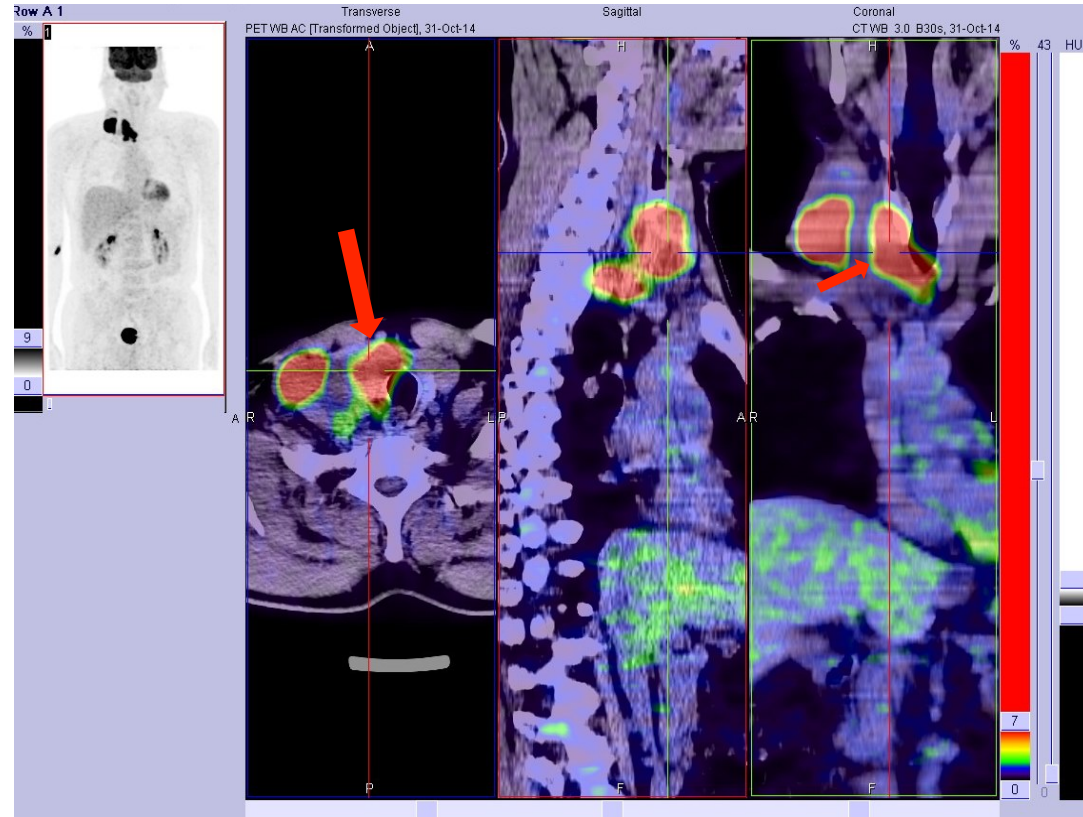
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Anaplastic Thyroid Carcinoma:
First presentation
before
Surgery Therapy
(Red Arrows)





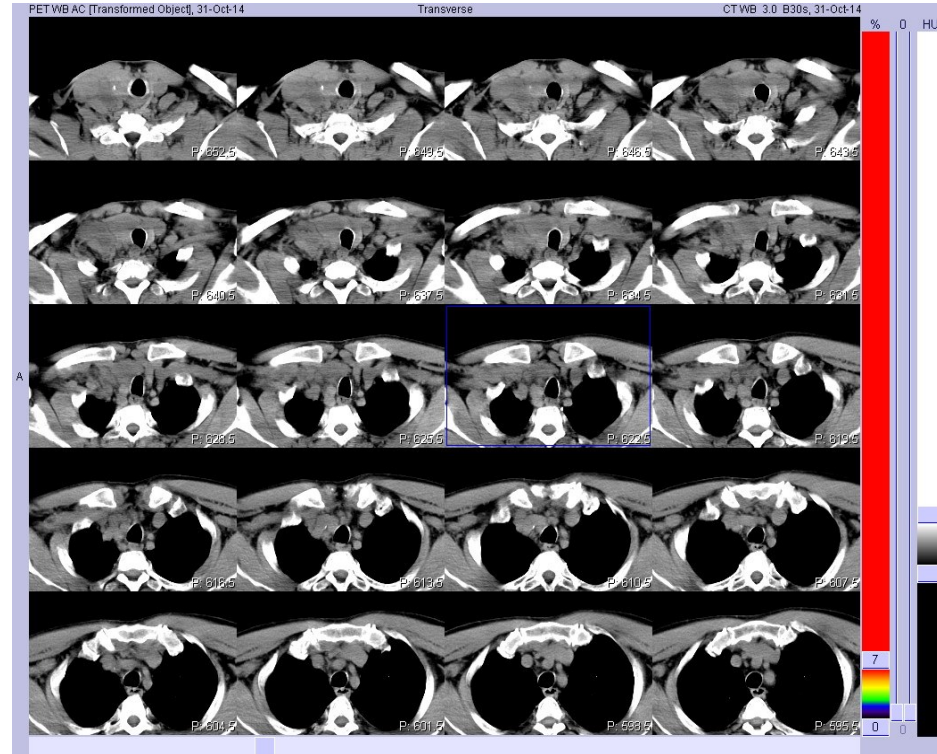
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Anaplastic Thyroid Carcinoma:
**First presentation before
Surgery Therapy**





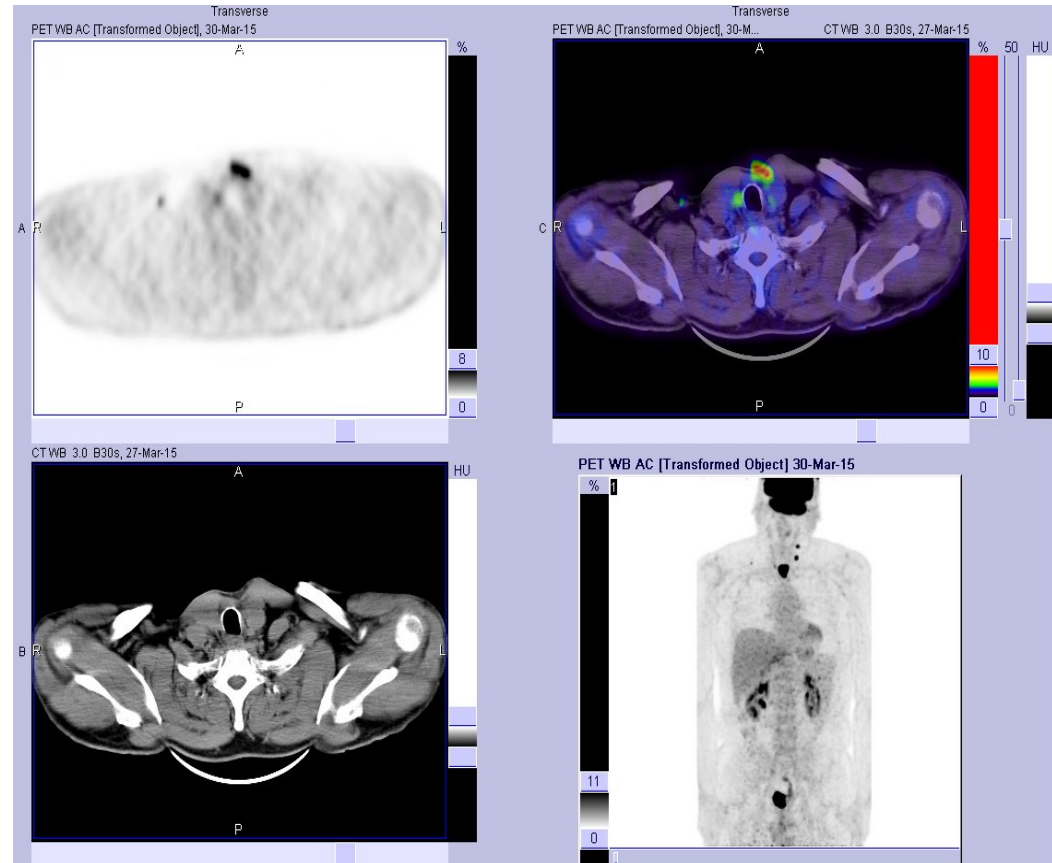
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Anaplastic Thyroid Carcinoma:
Second presentation
a few months after
Surgery Therapy
Second Look + EBRT





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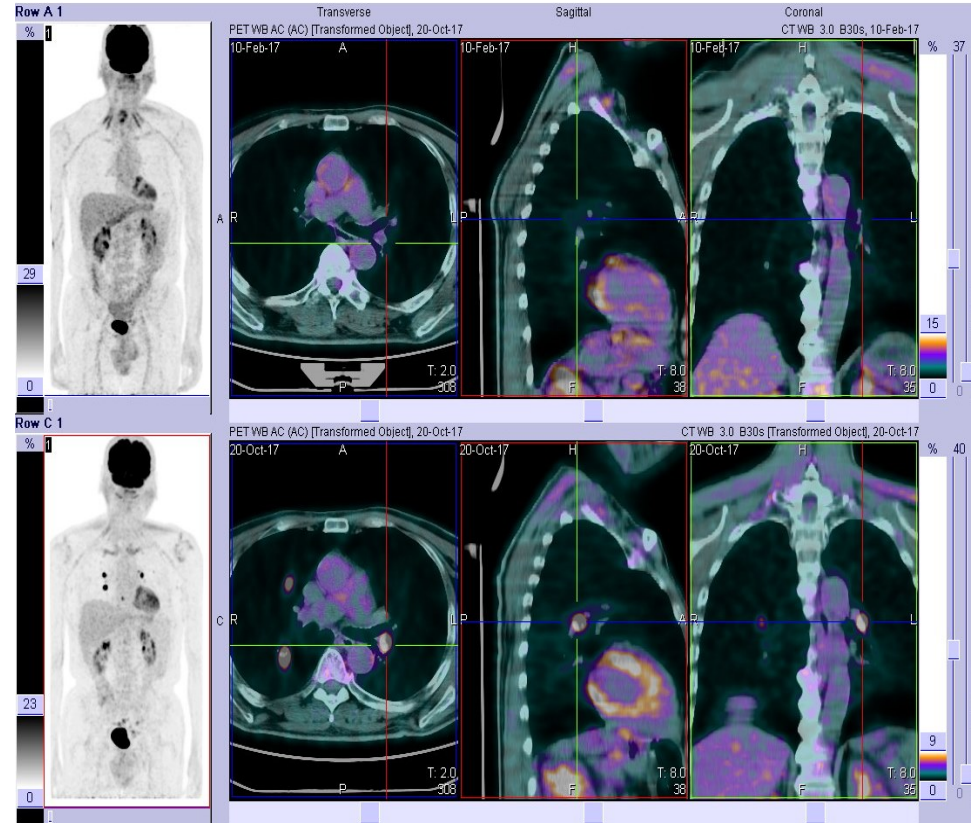


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Anaplastic Thyroid Carcinoma:
Two years later
Hybrid images during TKI

Anaplastic Thyroid Carcinoma:
Two years later
Hybrid images after pausing of a
few months of anti angiogenic
drug because of bronchial fistula
Appearance of pulmonary
metastases





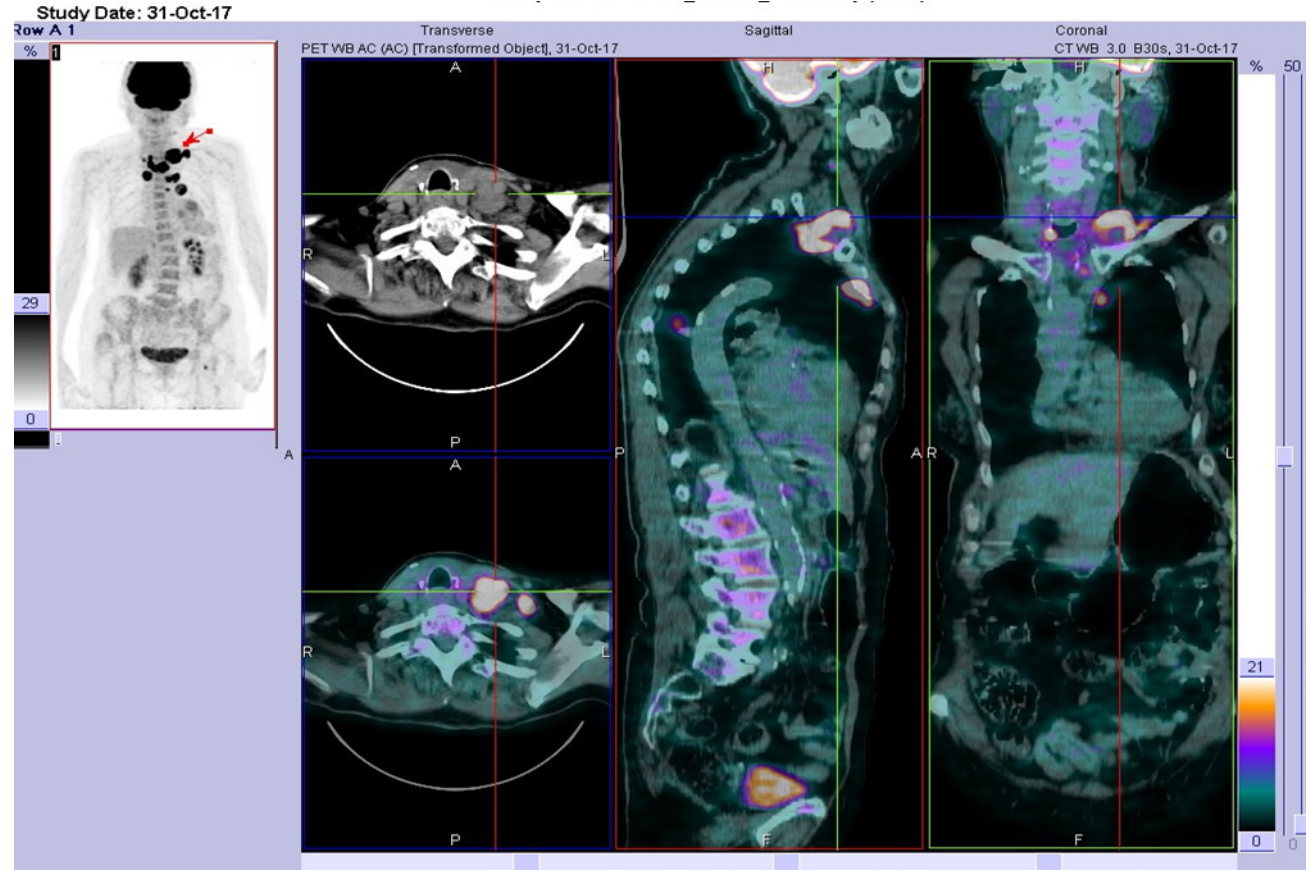
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Anaplastic Thyroid Carcinoma:
Persistent disease
In cervical and mediastinal nodes
(Red Arrow)
Start EBRT

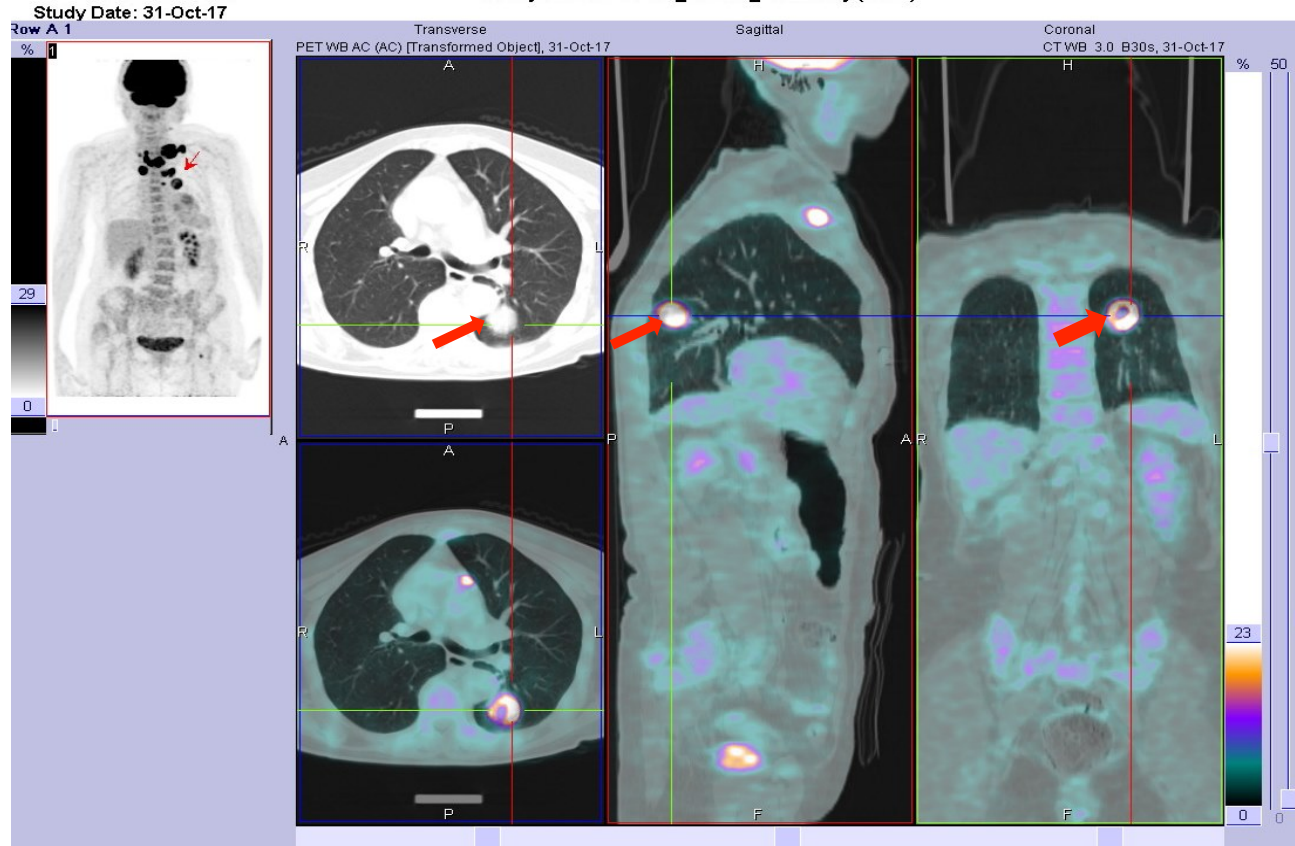




ANAPLASTIC THYROID CARCINOMA



Anaplastic
Thyroid
Carcinoma:
**Confirmation of
Lung Nodular
Lesions**
(Red Arrows)





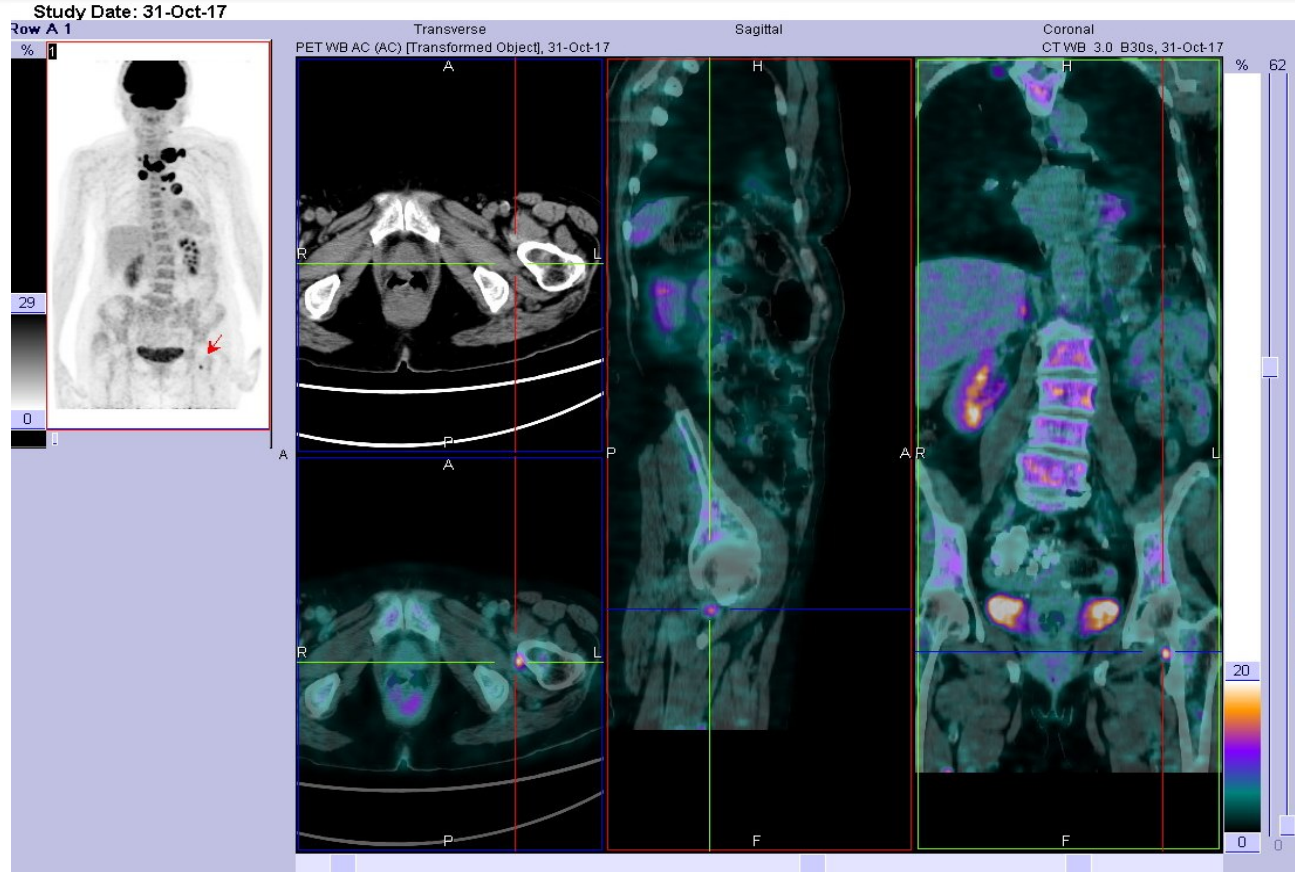
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Anaplastic
Thyroid
Carcinoma:
Benign Tendon
Lesion
(Red Arrow)





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Clinical Case Report

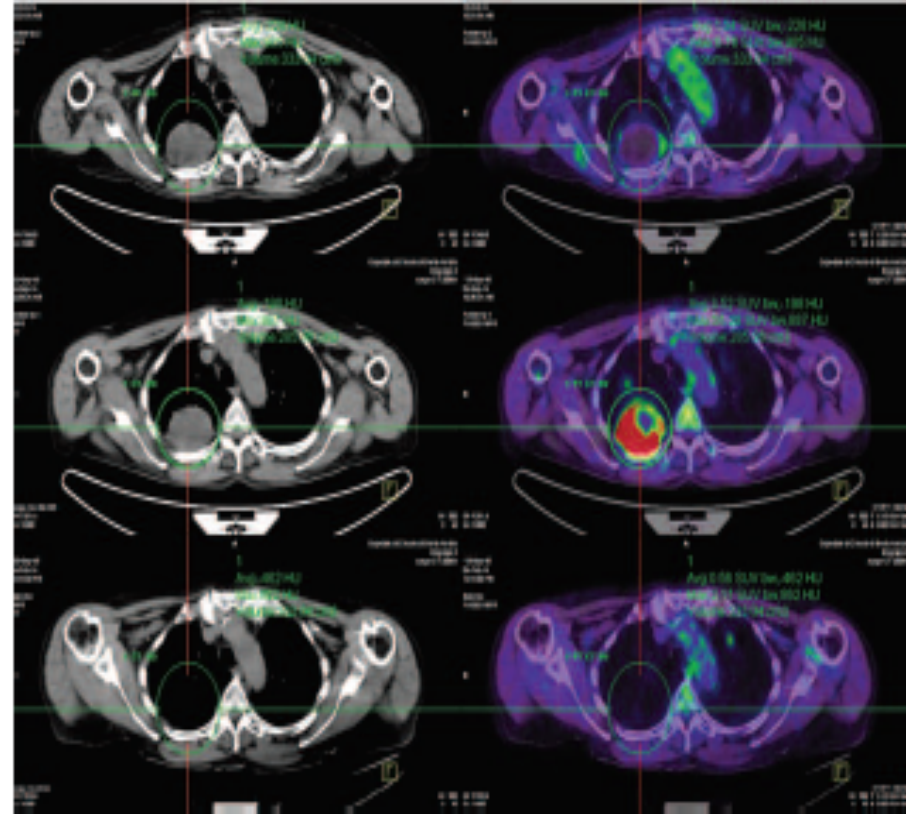
Medicine

OPEN

Anaplastic thyroid carcinoma and foscarnet use in a multitarget treatment documented by ¹⁸F-FDG PET/CT

A case report

Elisa Giannetta, MD, PhD^a, Andrea M. Isidori, MD, PhD^a, Cosimo Durante, MD, PhD^b, Cira Di Gioia, MD, PhD^c, Flavia Longo, MD, PhD^c, Vincenzo Tombolini, MD, PhD^c, Nadia Bulzonetti, MD, PhD^c, Chiara Graziadio, MD^a, Riccardo Pofi, MD^a, Daniele Gianfrilli, MD, PhD^a, Antonella Verrienti, PhD^b, Raffaella Carletti, biomedical laboratory technician^c, Sebastiano Fletti, MD, PhD^b, Andrea Lenzi, MD, PhD^a, Alberto Baroli, MD, PhD^{d,*}





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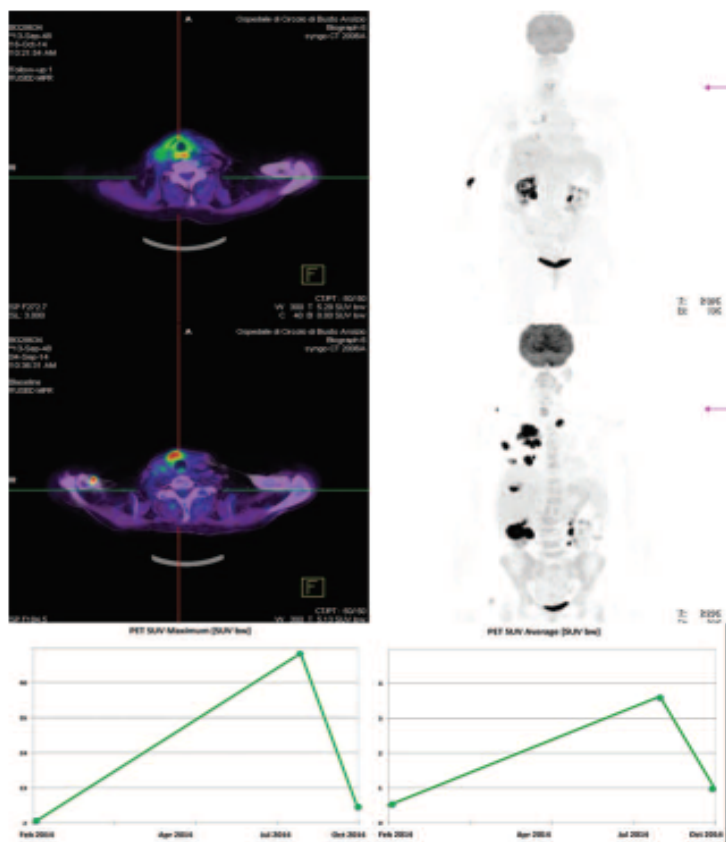


Figure 2. Whole body ^{18}F -FDG PET/CT before and after multitarget therapy. A, It shows on the left, from bottom to top: complex PET/CT hybrid imaging of recurrence of pathological lesion in the right paramedian cervical region and right scapula before (bottom) and after (top) systemic multi-target therapy (foscamet +sunitinib+LMWH). On the right from bottom to top: whole-body PET/CT shows the extraordinary disappearance of pathological lesions 1 month after systemic multitarget therapy (foscamet + sunitinib + LMWH). Black arrows indicate the main lesions in the right lung and kidney. B, Graphical and quantitative analysis of response to multitarget treatment according to PERCIST 1.0 criteria. On the right, a reduction in tumor standardized uptake value (SUV) over 200% from the starting value is detected 30 days after the start of multitarget therapy (foscamet + sunitinib + LMWH). PERCIST 1.0 criteria defined a fractional change from the starting value of 20% in SUV of a region 1 cm or larger in diameter as statistically significant, and of 30% as clinically relevant. C, It shows, from bottom to center, the appearance of a pathological lesion in the right lung with central necrosis (visible on the right center of the image). At the top, 30 days after the start of multitarget therapy (foscamet +sunitinib+LMWH): on the right, the pulmonary lesion appears completely functionally and metabolically silent on complex PET/CT imaging according to PERCIST 1.0 criteria, while on the left, anatomical imaging alone (according to RECIST criteria) is unable to measure the early response to the target therapy, showing a near identical mass to before. CT = computed tomography, LMWH = low molecular weight heparin, PERCIST = Positron Emission Tomography Response Criteria in Solid Tumors.



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ATC - Fundamentals
TIME

PET CT FDG:
Staging before surgery and
planning EBRT
Control Local and Systemic
Target Therapy
(PERCIST CRITERIA)

Only a combined therapy
(Surgery and EBRT) can secure
the airway

Future for Stage IVc
an extension of survival can be
assured by systemic therapy
guided by molecular biology





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"Before I came here I was confused about this subject. Having listened to your lecture I am still confused. But on a higher level."

Enrico Fermi