



17° Congresso Nazionale AME
Joint Meeting with AACE Italian Chapter
Update in Endocrinologia Clinica

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ITALIAN CHAPTER

Noduli tiroidei: le terapie mini-invasive e le loro indicazioni

Le indicazioni nel trattamento della patologia maligna



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Disclosures

- Speaking fee from Guerbet
- Consultant for Elesta SrL



Recurrent thyroid cancer

Background

- Papillary thyroid cancer: 85% of all thyroid cancers
- Treatment: thyroidectomy ± cervical dissection ± radioactive iodine-131 ablation
- Cervical nodal **recurrence may occur in up to 30%** of patients and requires **repeated surgery** and/or radioiodine ablation
- *Might MIT reduce the invasiveness of retreatments?*



Recurrent thyroid cancer

J Clin Endocrinol Metab. 2013 Jan;98(1):E92-7. doi: 10.1210/jc.2012-2991. Epub 2012 Nov 12.

Percutaneous ultrasound-guided laser ablation is effective for treating selected nodal metastases in papillary thyroid cancer.

Papini E¹, Bizzarri G, Bianchini A, Valle D, Misischi I, Guglielmi R, Salvatori M, Solbiati L, Crescenzi A, Pacella CM, Gharib H.

- **5 patients**, 8 metastatic lymph nodes
- Previous surgical dissection, absent radioiodine uptake
- $64.4 \pm 0.19\%$ mean volume reduction at 6 months ($P < 0.02$)
- $87.7 \pm 0.11\%$ mean volume reduction at 12 months ($P < 0.01$)
- **No regrowth** was registered
- Tg from 8.0 ± 3.2 ng/ml to 2.0 ± 2.5 ng/ml at 12-month ($P < 0.02$)
- In three patients (60%) Tg levels were undetectable
- Tolerable pain in two cases and mild in three cases.
- Transient dysphonia in one patient

Recurrent thyroid cancer

[J Clin Endocrinol Metab](#). 2013 Jul;98(7):E1203-7. doi: 10.1210/jc.2013-1140. Epub 2013 May 10.

Percutaneous laser ablation of metastatic lymph nodes in the neck from papillary thyroid carcinoma: preliminary results.

[Mauri G](#)¹, [Cova L](#), [Tondolo T](#), [Ierace T](#), [Baroli A](#), [Di Mauro E](#), [Pacella CM](#), [Goldberg SN](#), [Solbiati L](#).

[Cardiovasc Intervent Radiol](#). 2016 Feb 24. [Epub ahead of print]

Treatment of Metastatic Lymph Nodes in the Neck from Papillary Thyroid Carcinoma with Percutaneous Laser Ablation.

[Mauri G](#)^{1,2}, [Cova L](#)³, [Ierace T](#)⁴, [Baroli A](#)⁵, [Di Mauro E](#)⁵, [Pacella CM](#)⁶, [Goldberg SN](#)⁷, [Solbiati L](#)^{4,8}.

Patients:

- 24 patients (62.3 ± 13.2 year; range 32–80)
- Previous thyroidectomy, neck dissection, and radioiodine ablation
- **46 18FDG-PET/CT-positive** metachronous nodal metastases
- High surgical risk or refused surgery
- Unsuitable for additional radioiodine ablation

Recurrent thyroid cancer

Cardiovasc Intervent Radiol. 2016 Feb 24. [Epub ahead of print]

Treatment of Metastatic Lymph Nodes in the Neck from Papillary Thyroid Carcinoma with Percutaneous Laser Ablation.

Mauri G^{1,2}, Cova L³, Ierace T⁴, Baroli A⁵, Di Mauro E⁵, Pacella CM⁶, Goldberg SN⁷, Solbiati L^{4,8}.

Results:

- Technical success 100%, no major complications
- Tg from 8.40 ± 9.25 ng/ml to 2.73 ± 4.0 ng/ml ($p = 0.011$)
- Serological conversion in 11/24 (45.8%) patients
- Local control in 40/46 (86.9%) In at 30 ± 11 month f-u
- Estimated mean time to progression 38.6 ± 2.7 m



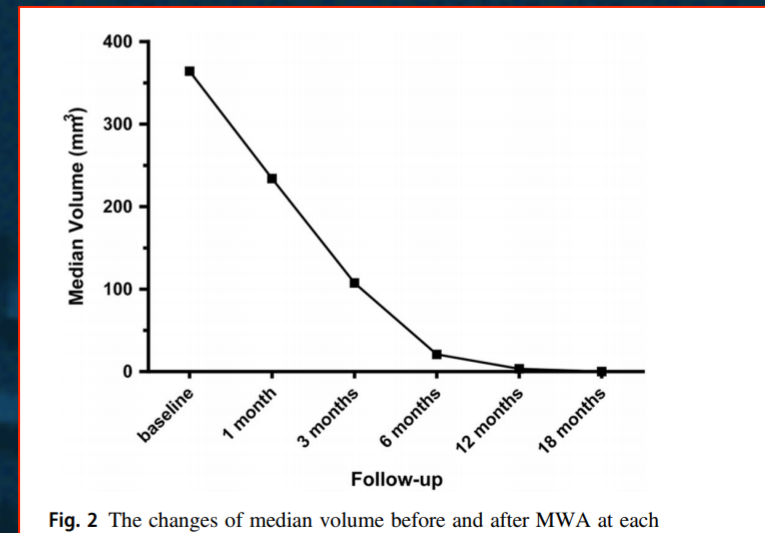
Recurrent thyroid cancer

Endocrine. 2018 Aug 13. doi: 10.1007/s12020-018-1711-4. [Epub ahead of print]

Safety and efficiency of ultrasound-guided low power microwave ablation in the treatment of cervical metastatic lymph node from papillary thyroid carcinoma: a mean of 32 months follow-up study.

Teng D¹, Ding L², Wang Y³, Liu C³, Xia Y³, Wang H⁴.

- 11 patients
- 24 cervical lymph nodes
- 20 W microwave ablation
- 100% technical success
- No major complications
- All nodes disappeared
- Mean Tg from 11.81 ± 7.50 ng/ml, to 0.43 ± 0.11 ng/ml 3 months after MWA (P = 0.000)
- No recurrence at 32-month FU



Recurrent thyroid cancer

J Endocrinol Invest. 2018 Apr 23. doi: 10.1007/s40618-018-0886-0. [Epub ahead of print]

mRECIST criteria to assess recurrent thyroid carcinoma treatment response after radiofrequency ablation: a prospective study.

Mazzeo S¹, Cervelli R², Elisei R³, Tarantini G², Cappelli C², Molinaro E³, Galleri D⁴, De Napoli L⁴, Comite C⁵, Cioni R², Vitti P³, Caramella D².

- 16 lesions in **13 patients**
- Patients excluded/refused surgery
- **RF ablation**
- Result assessed with **CECT** (RECIST 1.1 and mRECIST)


- Procedure always well tolerated
- **2 cases of permanent laryngeal nerve paralysis**
- RECIST 1.1, CR in 1/16, PR in 11/16, SD 4/16 cases
- mRECIST, CR IN 11/16 and PR in 5/16

Recurrent thyroid cancer

How to assess treatment result?

- US?
- CEUS?
- TG?
- PET?
- CECT?

Urgent need to apply a common language in image-guided thermal ablations

Giovanni Mauri¹  · Anna Pisani Mainini² · Cristian Monaco² · Lorenzo Carlo Pescatori² · Chiara De Angelis³ · Luca Maria Sconfienza^{4,5}

Primary thyroid tumors

Background:

- Several thyroid tumors are nowadays diagnosed at very early stage, and small dimensions
- Some tumors are **not suitable for surgical management**
- Some type of thyroid tumors (PTMC) have an excellent prognosis, and **active surveillance** might be considered instead of surgery
- Image-guided ablations are effective in several types of tumors
- *Might ablations be a treatment option for primary thyroid tumors?*

Primary thyroid tumors

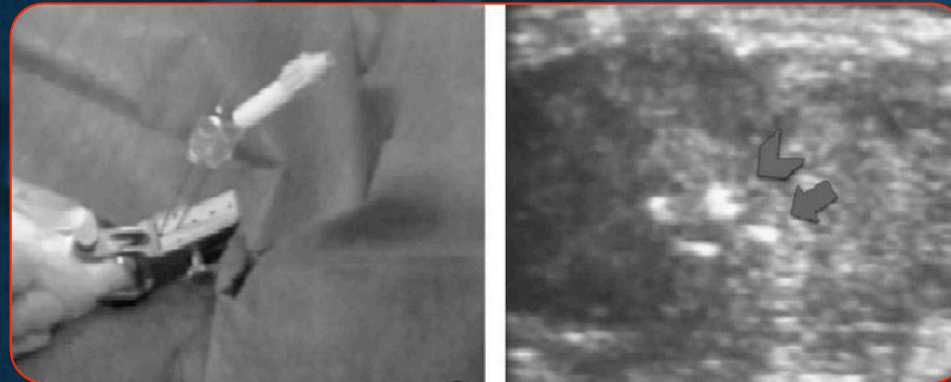
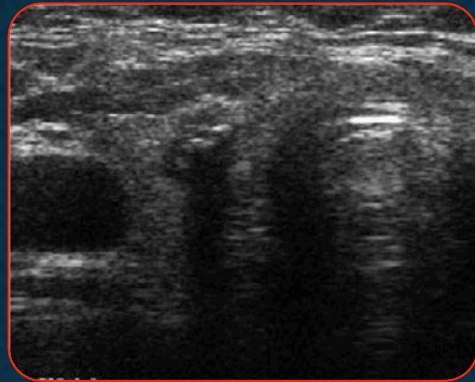
Thyroid. 2011 Aug;21(8):917-20. doi: 10.1089/thy.2010.0447. Epub 2011 May 19.

Ultrasound-guided laser ablation of incidental papillary thyroid microcarcinoma: a potential therapeutic approach in patients at surgical risk.

Papini E¹, Guglielmi R, Gharib H, Misischi I, Graziano F, Chianelli M, Crescenzi A, Bianchini A, Valle D, Bizzarri G.

Clinical case:

- 8 x 7 x 7 mm papillary thyroid carcinoma
- Decompensated liver cirrhosis, renal failure, and surgery + radiation therapy for breast cancer
- Treated with PLA



- FNA at 24 months: no malignant cells

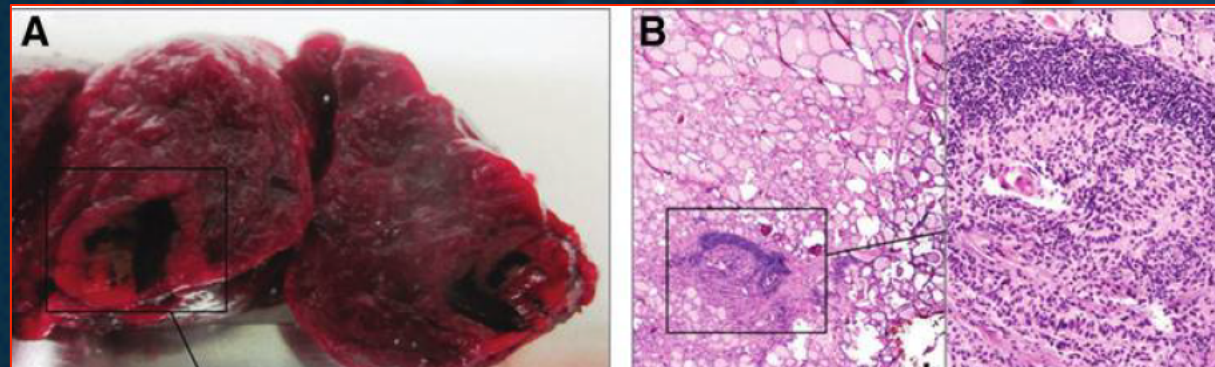
Primary thyroid tumors

Thyroid. 2013 Dec;23(12):1578-82. doi: 10.1089/thy.2013.0279. Epub 2013 Nov 14.

Ultrasound-guided percutaneous laser ablation of papillary thyroid microcarcinoma: a feasibility study on three cases with pathological and immunohistochemical evaluation.

Valcavi R¹, Piana S, Bortolan GS, Lai R, Barbieri V, Negro R.

- Three patients
- PTMC < 10 mm
- PLA with 21G needle
- Subsequent surgery
- No viable tumor cells at hystology



Primary thyroid tumors

[Thyroid](#). 2016 Nov;26(11):1581-1587. Epub 2016 Aug 18.

Efficacy and Safety of Ultrasound-Guided Radiofrequency Ablation for Treating Low-Risk Papillary Thyroid Microcarcinoma: A Prospective Study.

Zhang M¹, Luo Y¹, Zhang Y¹, Tang J¹.

- **92 patients** with 98 PTMC (range 1-3)
- Medical contraindications or refusal of surgery
- **RFA** with moving shot technique
- **US and CEUS** at 1,3,6, and every 6 months thereafter
- **CNB** at 3 months

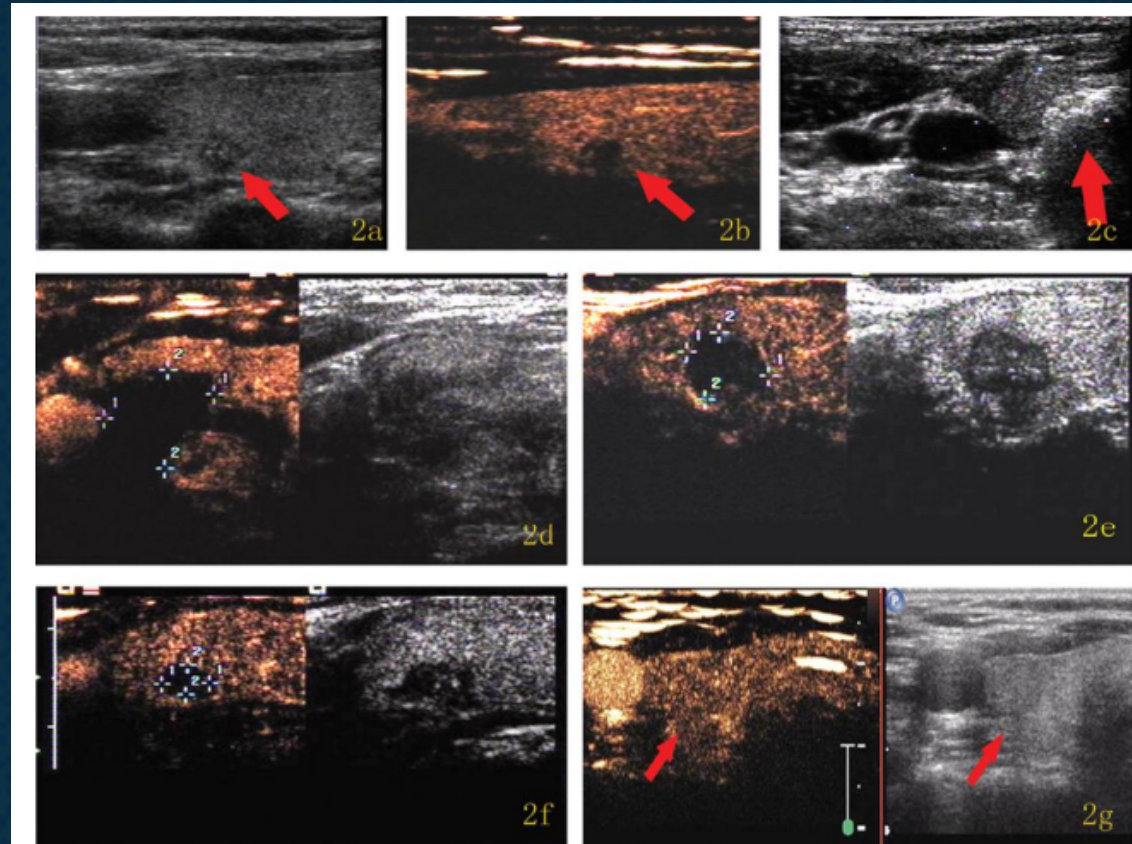
- No major complications
- No viable tumor at CNB
- No local recurrence or distant metastases at 24 months

Primary thyroid tumors

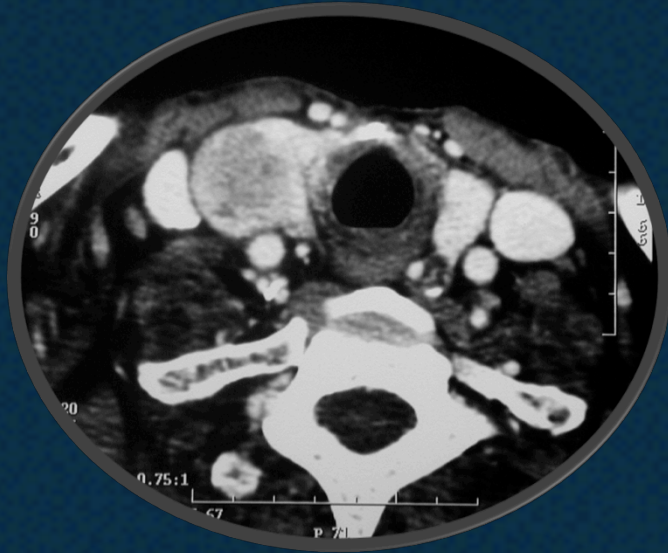
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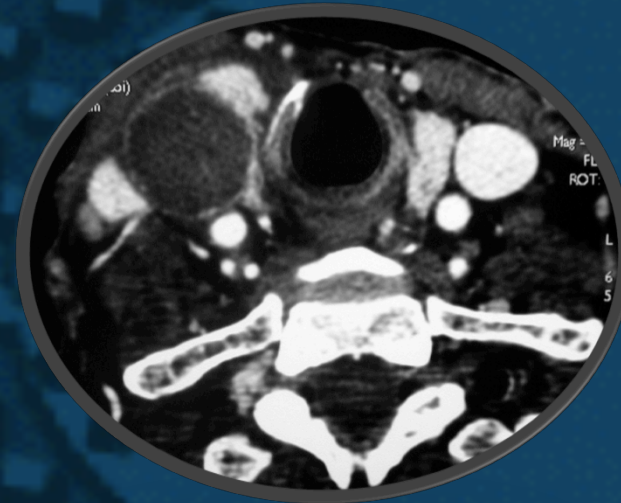


Primary thyroid tumors



- Follicular thyroid tumor in poor surgical candidate patient

- Successful debulking with PLA



Primary thyroid tumors

[Int J Hyperthermia](#). 2016 Nov 30:1-2. [Epub ahead of print]

Image-guided thermal ablation might be a way to compensate for image deriving cancer overdiagnosis.

Mauri G¹, Sconfienza LM^{2,3}.

- Due to improved diagnostic performance, small, indolent PTMC are more often diagnosed
- These tumors might never affect the patient life, but, once a tumor is detected, physicians and patients look for a treatment
- Image-guided ablation might be the way to compensate for overdiagnosis by minimizing the invasiveness of treatment

Conclusions

- Ablation is **safe** and **effective** in treatment of **recurrent thyroid cancer and** in treatment of **small TC**
- Can be helpful option for **debulking** in selected cases
- Might be the way to **compensate overdiagnosis** in PTMC
- Might be an **effective alternative to surgery** for treating lymph node metastasis

www.termoablazione tiroide.it

Milano, 7-8 Febbraio 2019
Palazzo delle Stelline, Corso Magenta 61

“TRATTAMENTI PERCUTANEI DELLA PATOLOGIA TIROIDEA” 2019

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Responsabile Scientifico:
Giovanni Mauri

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Claudio Maurizio Pacella
Enrico Papini
Luca Maria Sconfienza
Luigi Solbiati





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Thank you!!

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