

# Traitements des métastases ganglionnaires de cancers papillaires Traitements alternatifs

Hervé Monpeyssen

# Les techniques alternatives

- L'alcoolisation (PEI : Percutaneous Ethanol Injection)
  - L'HIFU (en cours d'évaluation)
  - Le laser (Italie.....Europe)
  - La radiofréquence (Corée Dannemark)
  - Les micro-ondes
- 
- Gharib H, Hegedus L, Pacella CM, Baek JH, Papini E. Clinical review: Nonsurgical, image-guided, minimally invasive therapy for thyroid nodules. The Journal of clinical endocrinology and metabolism. 2013;98(10):3949-57.
    - At present, percutaneous ethanol injection therapy is recommended for recurrent benign thyroid cysts. Either ultrasound-guided laser or radiofrequency ablation can be used for symptomatic solid nodules with normal or abnormal thyroid function. Microwave ablation and high-intensity focused ultrasound are newer approaches that need further clinical evaluation. These techniques have also been applied to recurrent locoregional cervical thyroid cancer with encouraging initial results, although still limited data.

# Intérêts de la technique

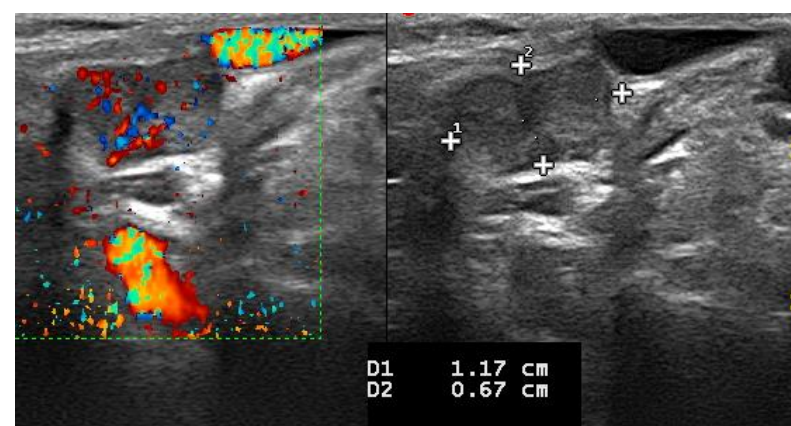
- Fréquence des métastases cervicales
  - 27% des ETD récidivent
    - Ganglionnaire 75%
    - Loge thyroïdienne 20%
    - Trachée, muscle, sous cutané 5%
- 30 % des métastases sont non fixantes
- Certains patients ne peuvent bénéficier de la chirurgie
  - Etat général
  - Risque local
  - Multiples ré-interventions

## Madame Denise P.

- Cancer papillaire « habituel »
- 1986 Thyroïdectomie totale + Curage RH
- IRA 100 mCu
  
- Récidive ganglionnaire homolatérale
  - Chirurgie
    - 1999 + 100 m Cu
    - 2002 + 100 mCu
    - 2004 x 2
    - 2005
    - 2006
    - 2008

- Patiente 84 ans
- Etat général excellent
- Récidive ganglionnaire précoce et douloureuse
- PR unilatéral
- LT4 125. TSH <0.02. T4L 22.4
- Région cervicale dévastée



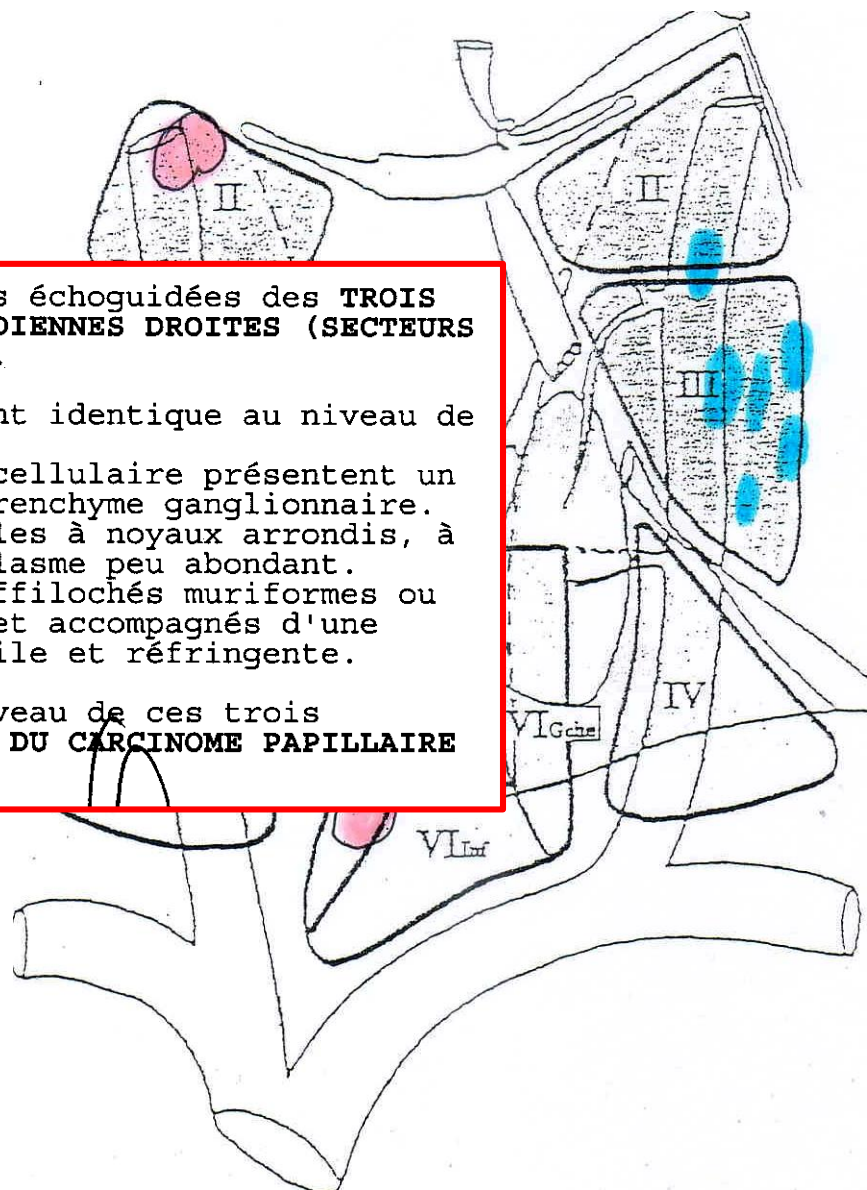


3 étalements provenant des ponctions échoguidées des **TROIS FORMATIONS NODULAIRES JUGULO-CAROTIDIENNES DROITES (SECTEURS II, IV et VI)** nous ont été adressés.

L'aspect cytologique est sensiblement identique au niveau de ces trois localisations.

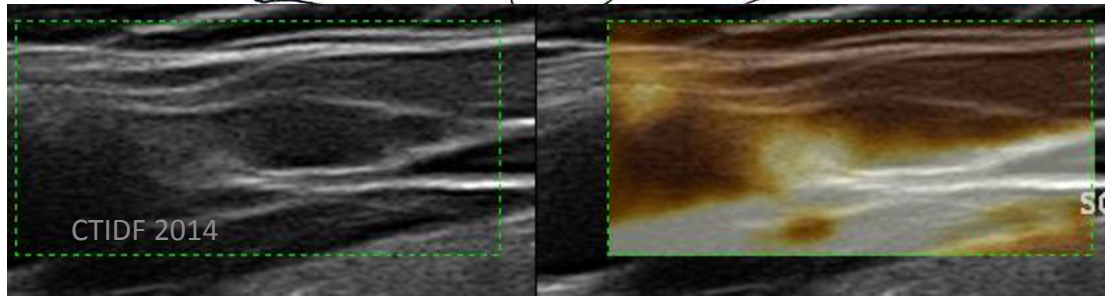
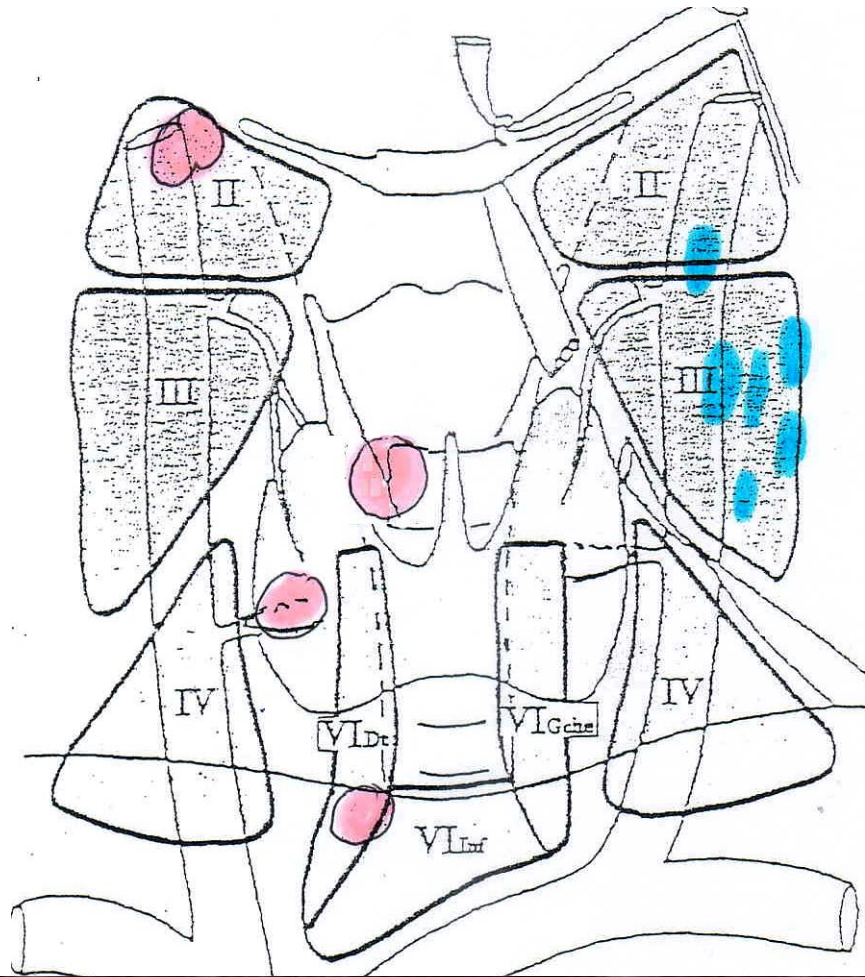
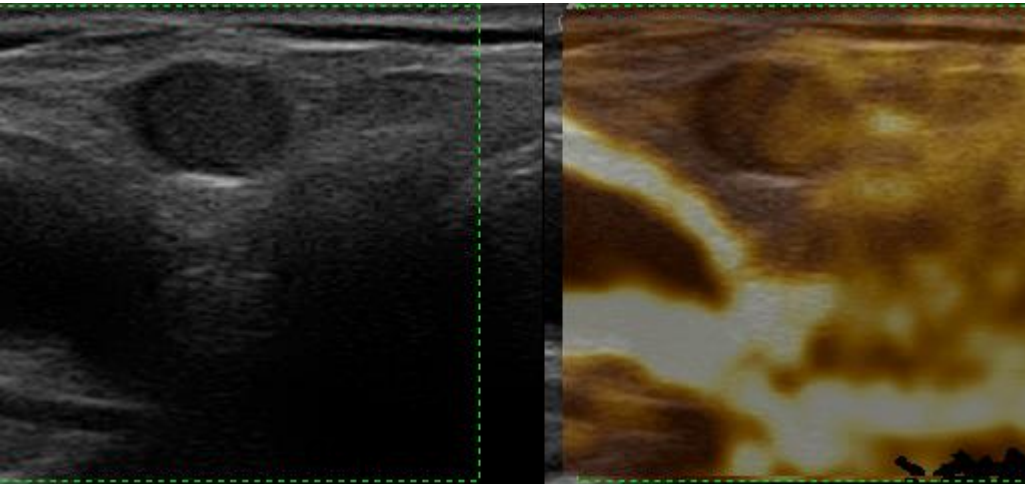
Les frottis d'une extrême richesse cellulaire présentent un fond assez pauvre en éléments du parenchyme ganglionnaire. Ils sont peuplés de cellules tumorales à noyaux arrondis, à chromatine assez pâle dans un cytoplasme peu abondant. Ces éléments sont groupés en amas effilochés muriformes ou digités à contours parfois rigides et accompagnés d'une participation conjonctive, éosinophile et réfringente.

L'aspect cytologique est bien au niveau de ces trois localisations celui **DE LA METASTASE DU CARCINOME PAPILLAIRE THYROIDIEN PRECEDEMMENT TRAITÉ.**





# Elastographie relative



# Alcoolisation

PEI (percutaneous ethanol injection)

- Kystes ou hématoçèles récidivants
- Kystes à colloïde épaisse
- Nodules autonomes / toxiques
- Nodules bénins non fixants
- Métastases non iodo-fixantes des cancers thyroïdiens
- Adénomes parathyroïdiens



# Bibliographie

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- **Monchick JM, Donatini G, Iannocilli J, Dupuy E** 2006 Radiofrequency ablation and percutaneous ethanol injection treatment for recurrent local and distant well-differentiated thyroid carcinoma. *Am J Surg* 244:296–304
- **Yu-Mee Sohn, Soon Won Hong, Eun-Kyung Kim, Min Jung Kim, Hee Jung Moon, Soo Jin Kim, Eun Ju Son, and Jin Young Kwak**, Complete Eradication of Metastatic Lymph Node After Percutaneous Ethanol Injection Therapy: Pathologic Correlation *Thyroid* Volume 19, Number 3, 2009
- **Heilo A, Sigstad E, Fagerlid KH, Håskjold OI, Grøholt KK, Berner A, Bjørø T, Jørgensen LH** 2011 Efficacy of ultrasound-guided percutaneous ethanol injection treatment in patients with a limited number of metastatic cervical lymph nodes from papillary thyroid carcinoma. *J Clin Endocrinol Metab* 96:2750–2755

# Alcoolisation de métastases

J Clin Endocrinol Metab 96:2750–2755

ORIGINAL ARTICLE

Endocrine Care

## Efficacy of Ultrasound-Guided Percutaneous Ethanol Injection Treatment in Patients with a Limited Number of Metastatic Cervical Lymph Nodes from Papillary Thyroid Carcinoma

Arne Heilo, Eva Sigstad, Kristin Holgersen Fagerlid, Olav Inge Håskjold, Krystyna Kotanska Grøholt, Aasmund Berner, Trine Bjørø, and Lars H. Jørgensen

Departments of Radiology and Nuclear Medicine (A.H., K.H.F., O.I.H.), Pathology (E.S., K.K.G., A.B.), and Medical Biochemistry (T.B.), Division of Diagnostics and Intervention; and Department of Thoracic Surgery, Division of Cardiovascular and Pulmonary Diseases (L.H.J.), Oslo University Hospital HF, 0424 Oslo, Norway; and Faculty of Medicine (A.B., T.B.), University of Oslo, 0316 Oslo, Norway

4 Heilo *et al.* Metastatic Neck Lymph Nodes in PTC

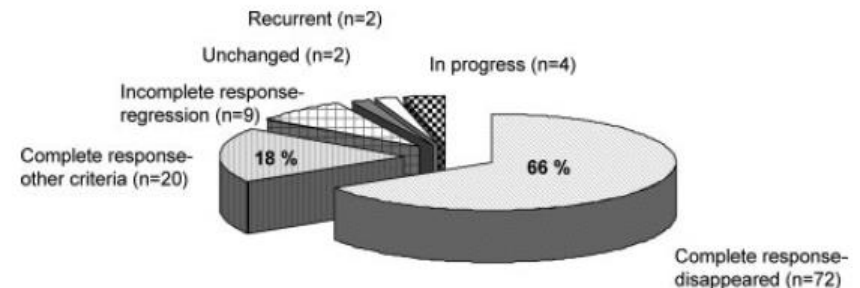
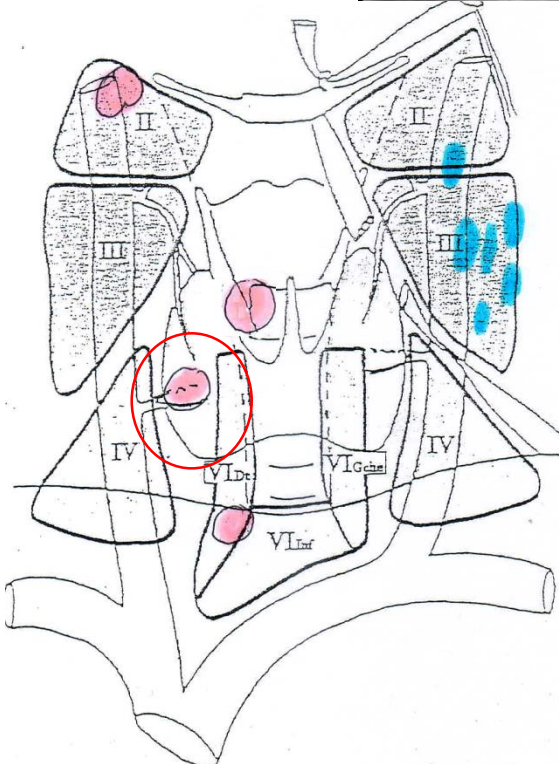
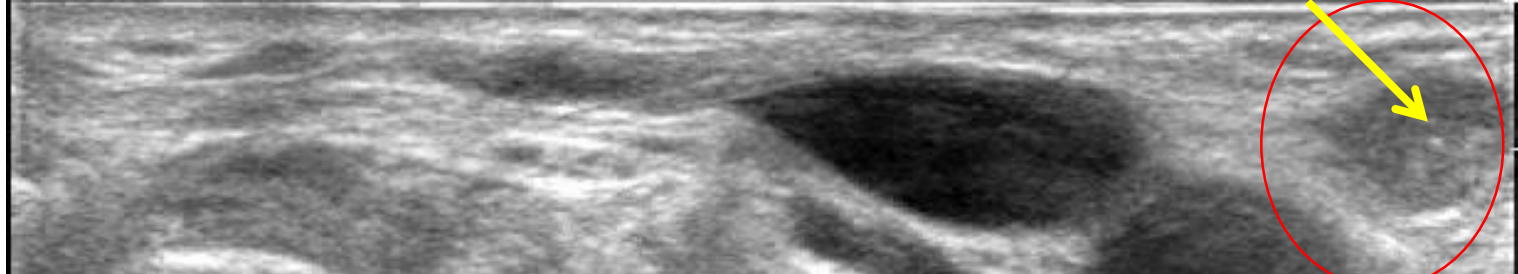


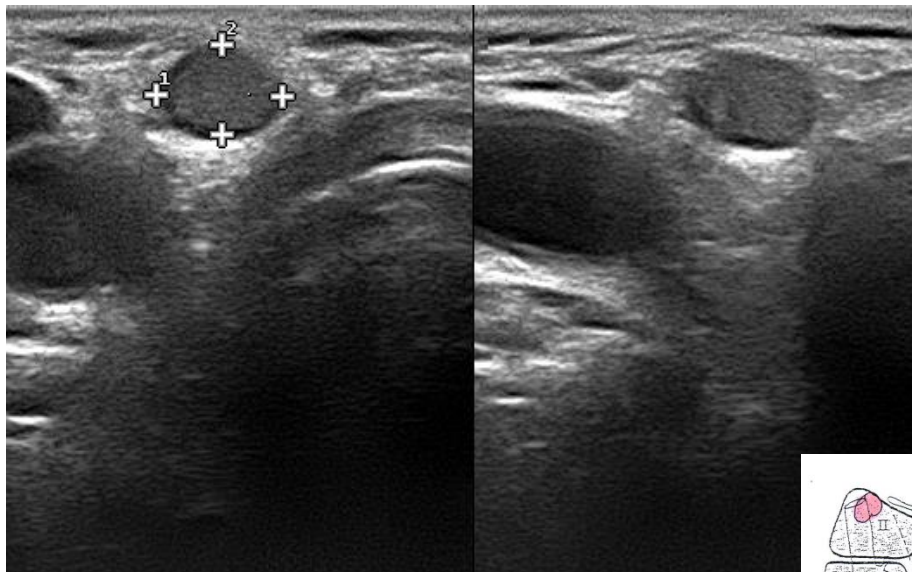
FIG. 1. The outcome of PEI treatment of neck lymph node metastases CTIDF 201. (n = 109).



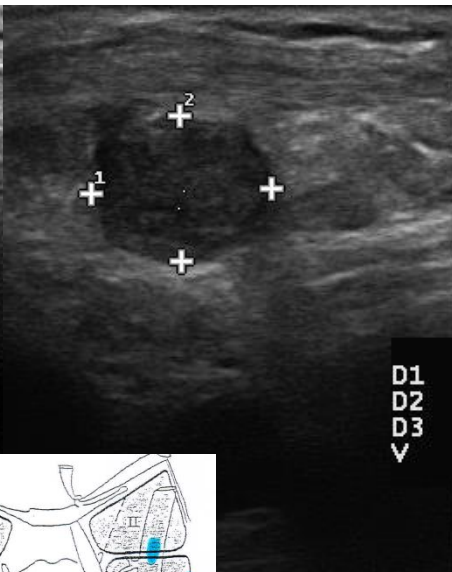
Vitesse de lecture AVI

- Lecture en temps réel (suivant l'acquisition)
- Relecture à:
  - 5 ips (ignorer le déclenchement)
  - 10 ips (ignorer le déclenchement)
  - 20 ips (ignorer le déclenchement)
  - 30 ips (ignorer le déclenchement)

5 mm

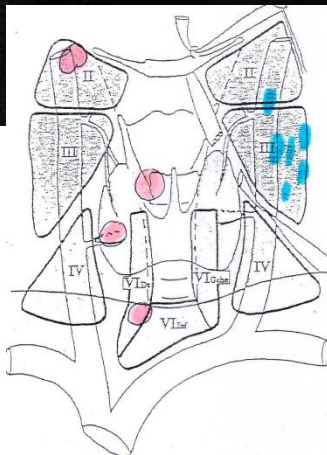


Octobre 2008

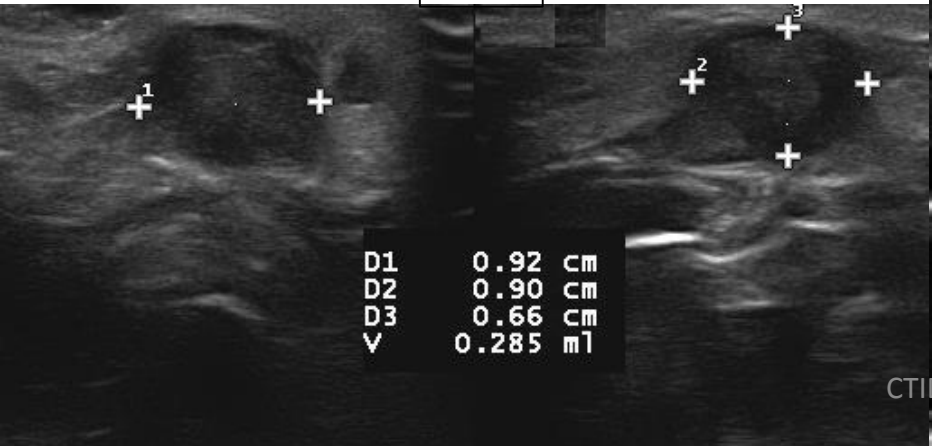


Juillet 2009

D1	0.96	cm
D2	0.78	cm
D3	0.92	cm
V	0.360	ml

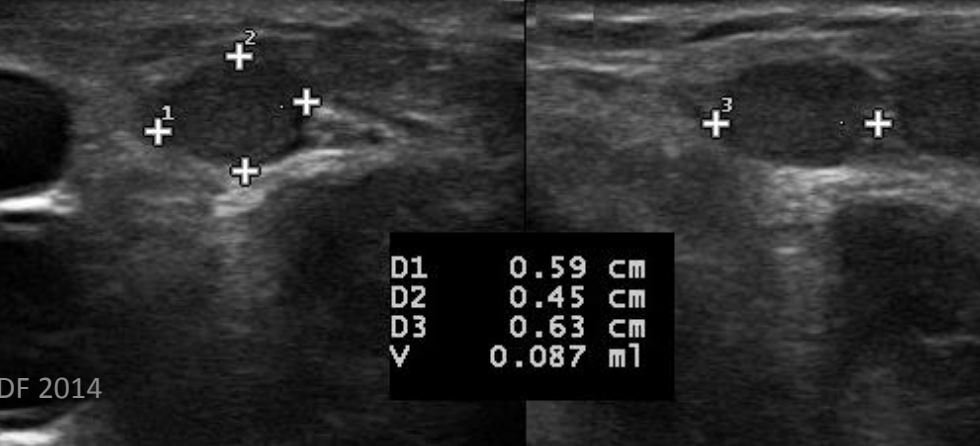


J21



D1	0.92	cm
D2	0.90	cm
D3	0.66	cm
V	0.285	ml

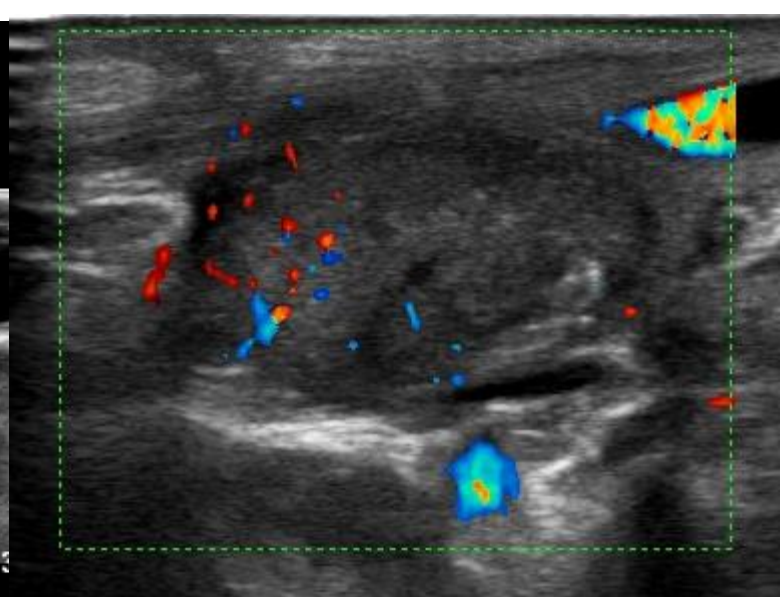
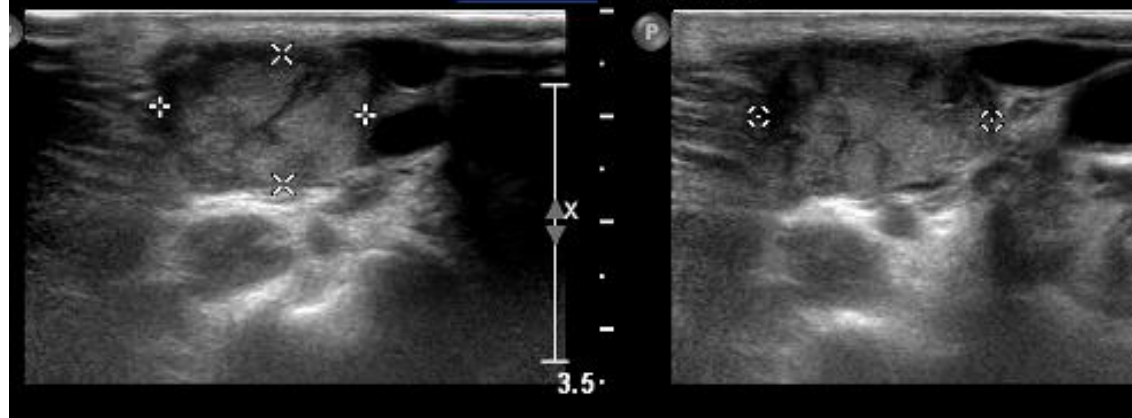
J150



D1	0.59	cm
D2	0.45	cm
D3	0.63	cm
V	0.087	ml



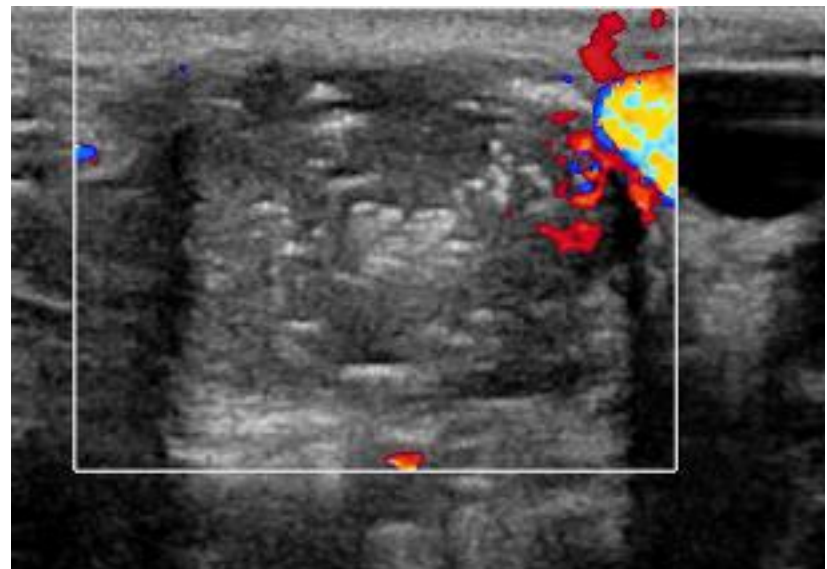
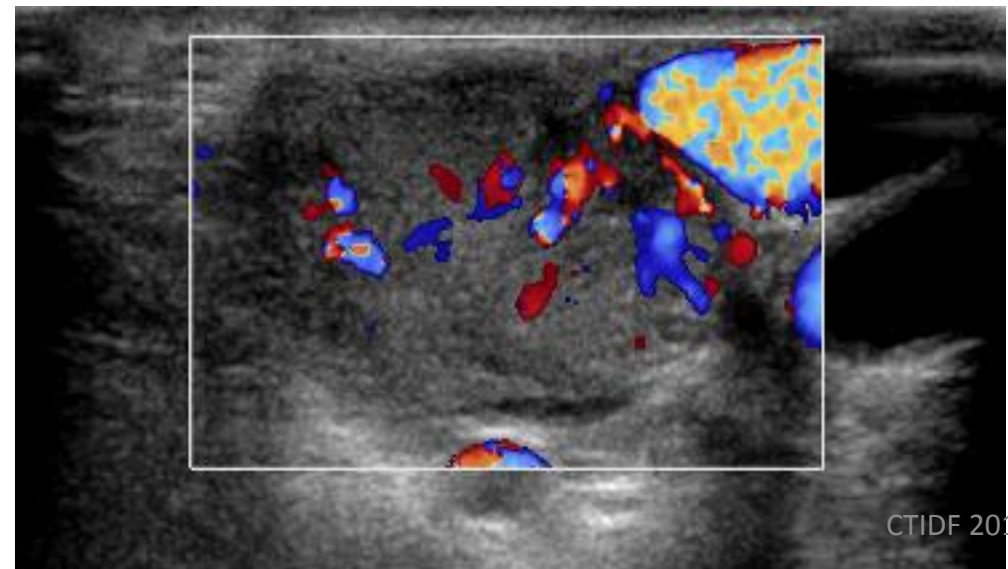
✦ Dist 1 1.95 cm  
✦✦ Dist 2 1.23 cm  
✦✦✦ Dist 3 2.21 cm  
2.77 ml



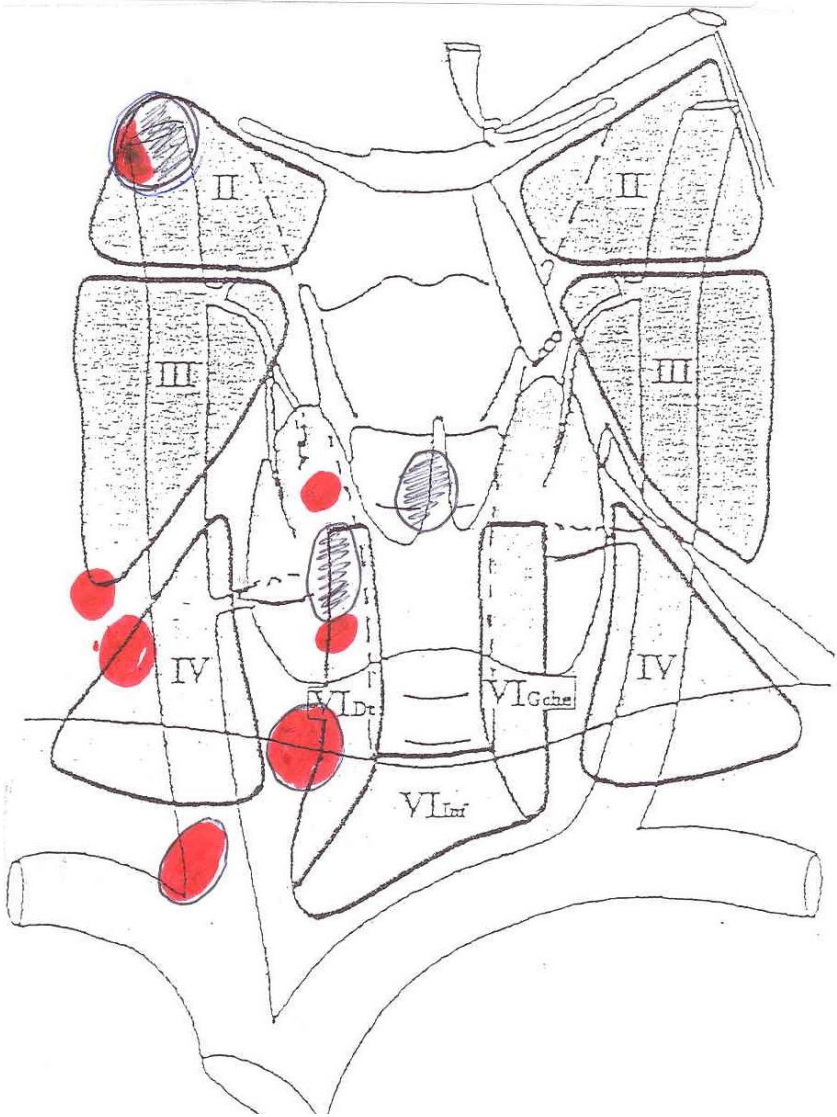
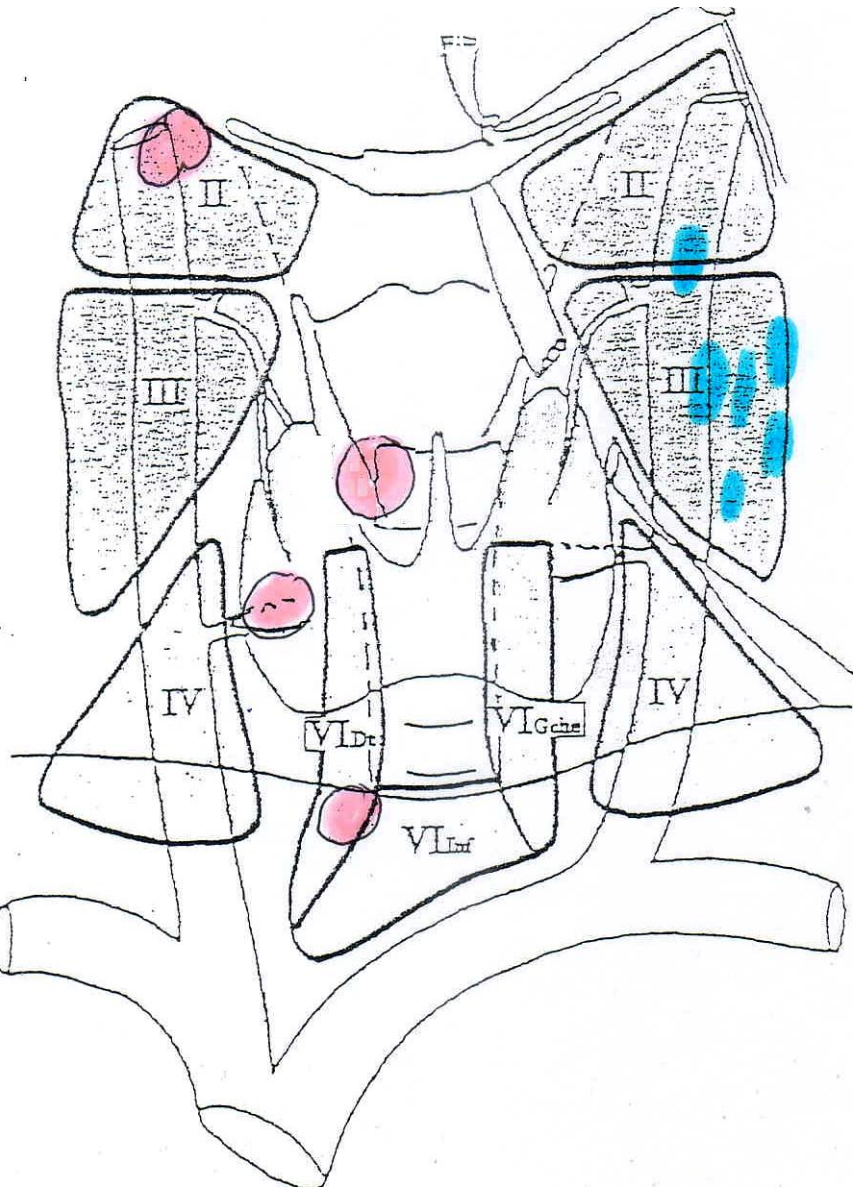
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J21

J1

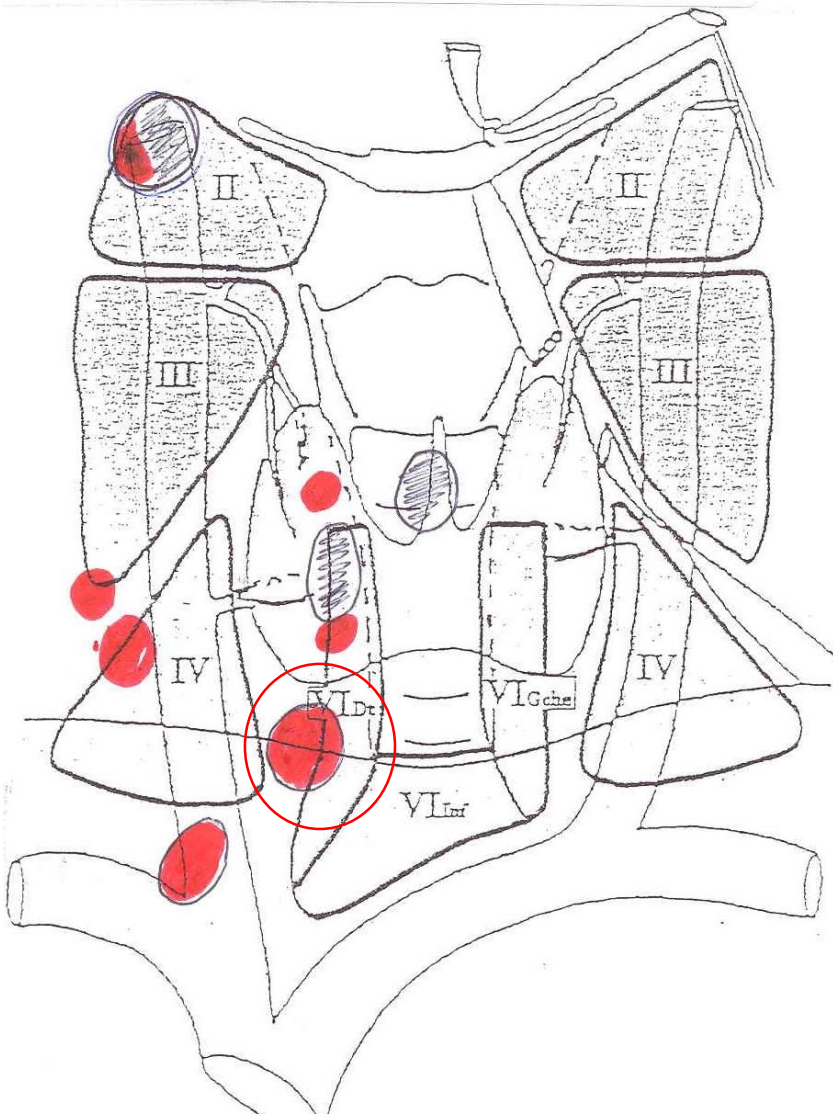
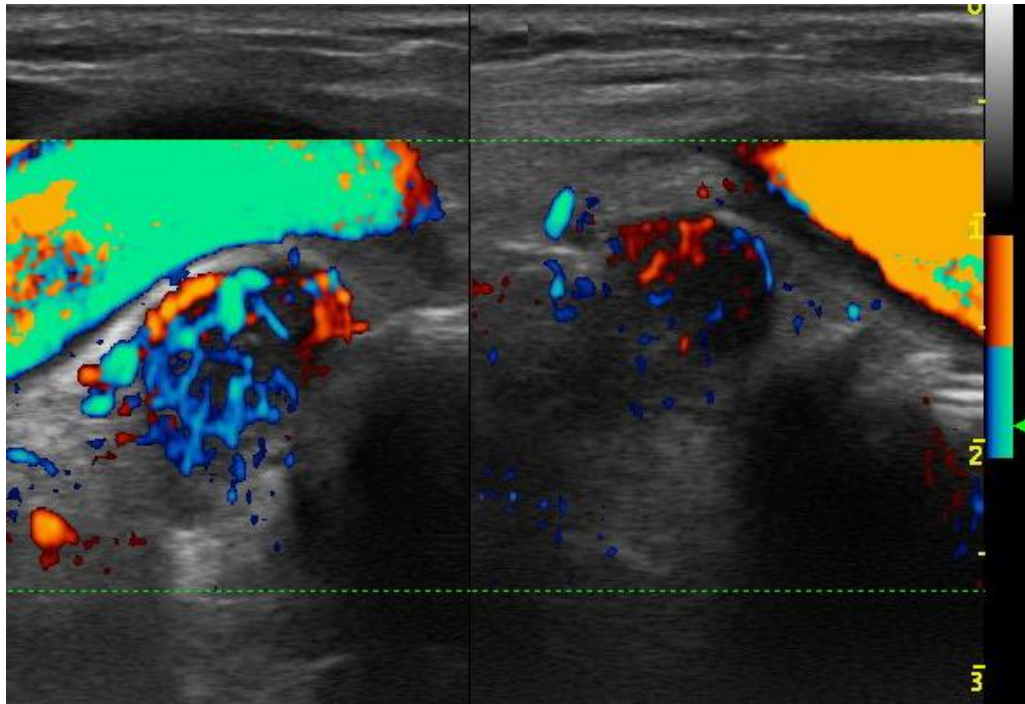


Examen du 21.12.2009

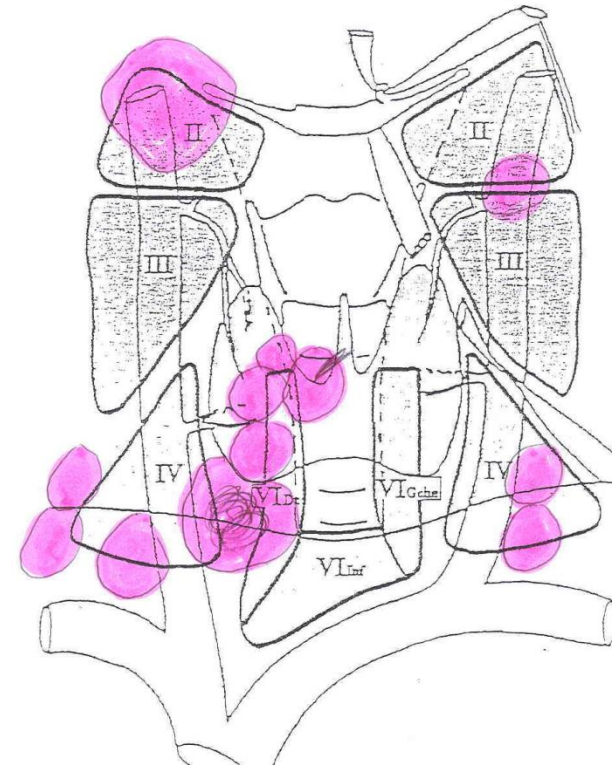




Examen du 21.12.2009



# Evolution à deux ans



Syndrome de masse tissulaire hétérogène en partie calcifié, centré sur le lobe thyroïdien droit restant.

Il existe une extension en arrière par une masse tissulaire en partie nécrosée, comprimant et refoulant l'œsophage. Cette lésion mesure 5 cm de plus grand axe sur 2 cm d'épaisseur.

Par ailleurs on retrouve de multiples nodules intra parenchymateux pulmonaires d'allure secondaire (environ 5 à droite et à gauche, les plus volumineux mesurant 21 mm de grand axe lobaire supérieur droit en augmentation de taille par rapport aux examens précédents, de façon significative (depuis 2006).

Par ailleurs, calcifications pleurales déjà décrites. Epanchement pleural droit de moyenne abondance. Pas de lésion hépatique.

# TABLE 2.

TABLE 2. Local Neck Recurrence Treated by Ethanol Ablation								
Patient No.	Sex	Age (yr)	Pathology	Lesion Type	Location	Size (mm)	Tg Levels Pre/Post Ablation (ng/mL)	Follow-up (mo)
17	F	47	Papillary Ca	Lymphnode	Left jugular vein	13 × 9 × 8 9 × 8 × 8 8 × 8 × 4	8.5/<0.9	19 Free
				Lymphnode	Left jugular vein	7 (maximal diameter) 6 × 5 (maximal diameter)		
18	M	78	Papillary Ca	Lymphnode	Right jugular vein	10 (maximal diameter)		23 Free
				Lymphnode	Right jugular vein	10 (maximal diameter)		
19	M	48	Papillary Ca	Lymphnode	Left neck	10 (maximal diameter)	0.8	1 Free
20	M	39	Papillary Ca	Mass	Left thyroid Bed	15 (maximal diameter)	7.5/4.6	10 Free
9	M	43	Papillary Ca	Lymphnode	Right CCA	10 6 × 5	2.3/<0.5	32 Free
13	F	46	Papillary Ca	Lymphnode	Left CCA	10 (maximal diameter)	15.5	28 Free

TABLE 2. Local Neck Recurrence Treated by Ethanol Ablation

**Radiofrequency Ablation and Percutaneous Ethanol Injection Treatment for Recurrent Local and Distant Well-Differentiated Thyroid Carcinoma.**

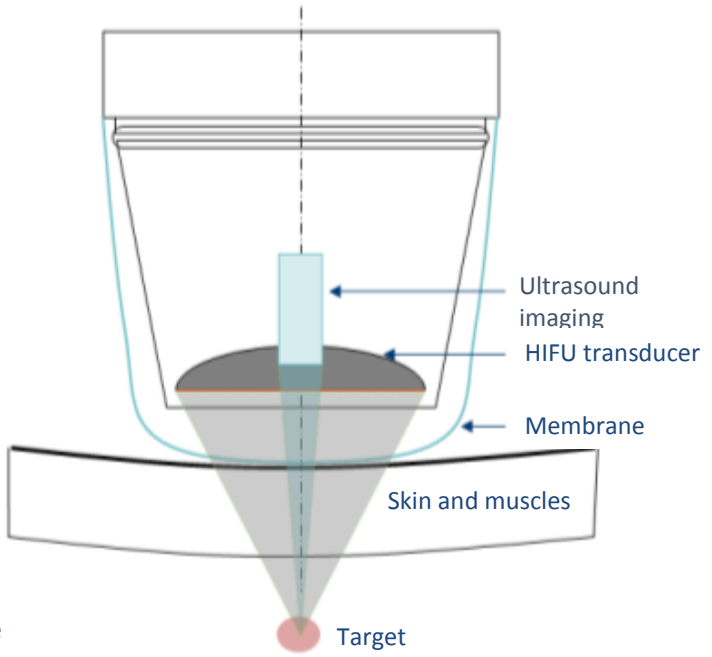
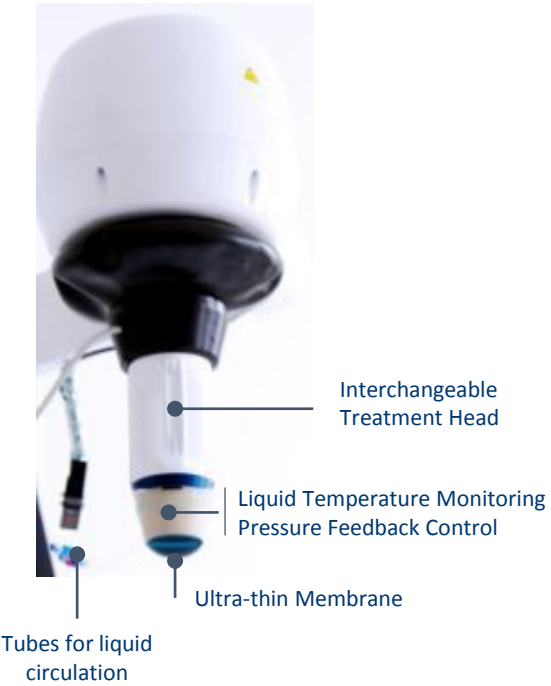
**Monchik, Jack;** Donatini, Gianluca; Iannuccilli, Jason; Dupuy, Damian

Annals of Surgery. 244(2):296-304, August 2006.  
DOI : 10.1097/01.sla.0000217685.85467.2d

# La HIFU. Ultrasons focalisés

- High-Intensity Focused Ultrasound Effect in Breast Cancer Nodal Metastasis
- [Gianluigi Orgera](#) et Al CardioVascular and Interventional Radiology. April 2010, Volume 33, [Issue 2](#), pp 447-449

# A Unique Visualization and Treatment Unit



**Echopulse<sup>®</sup> : the combination of real-time imaging and therapy**

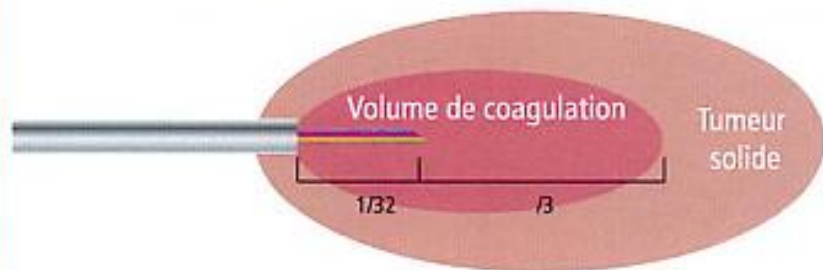


# La Laser

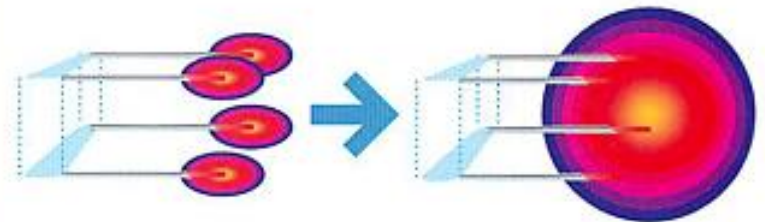
La lumière laser est transmise depuis sa source jusqu'au tissu à travers une ou plusieurs fibres optiques (300 $\mu$ m de diamètre, cœur en quartz, surface de sortie plane), introduites en percutané par des aiguilles fines (800 $\mu$ m de diamètre soit 21 Gauge).



Cette lumière laser génère une lésion (volume de coagulation) de forme elliptique, dont un tiers est situé derrière l'extrémité de la fibre optique et deux tiers devant.



- traitement de lésions plus grandes
- adaptabilité du traitement à la forme de la lésion
- possibilité de multiples repositionnements peu traumatisants des micro-aiguilles





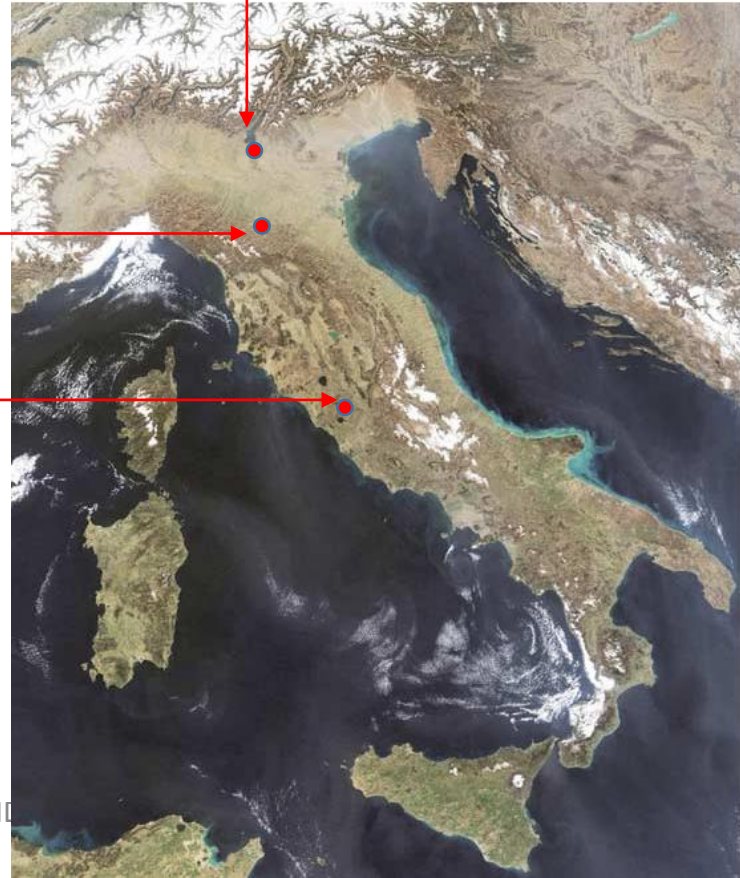
# Bibliographie

- **Percutaneous ultrasound-guided laser ablation is effective for treating selected nodal metastases in papillary thyroid cancer.** [Papini E<sup>1</sup>](#), [Bizzarri G](#), [Bianchini A](#), [Valle D](#), [Misischi I](#), [Guglielmi R](#), [Salvatori M](#), [Solbiati L](#), [Crescenzi A](#), [Pacella CM](#), [Gharib H](#). [J Clin Endocrinol Metab](#). 2013 Jan;98(1):E92-7
  - 5 patients. 8 MLN.
  - Volume moyen : 0,58ml > 0,22 à 6 mois et 0,06 à 12 mois
  - Tg indétectable 3/5
  
- **Percutaneous Laser Ablation of Metastatic Lymph Nodes in the Neck From Papillary Thyroid Carcinoma: Preliminary Results** [G. Mauri](#), [L. Cova](#), [T. Tondolo](#), [T. Ierace](#), [A. Baroli](#), [E. Di Mauro](#), [C. M. Pacella](#), [S. N. Goldberg](#), and [L. Solbiati](#)
  - 15 patients. Tg + ou ATG +. 24 MLN
  - Suivi FDG-PET/CT et PCUS
  - 6 mois                      83% PET -



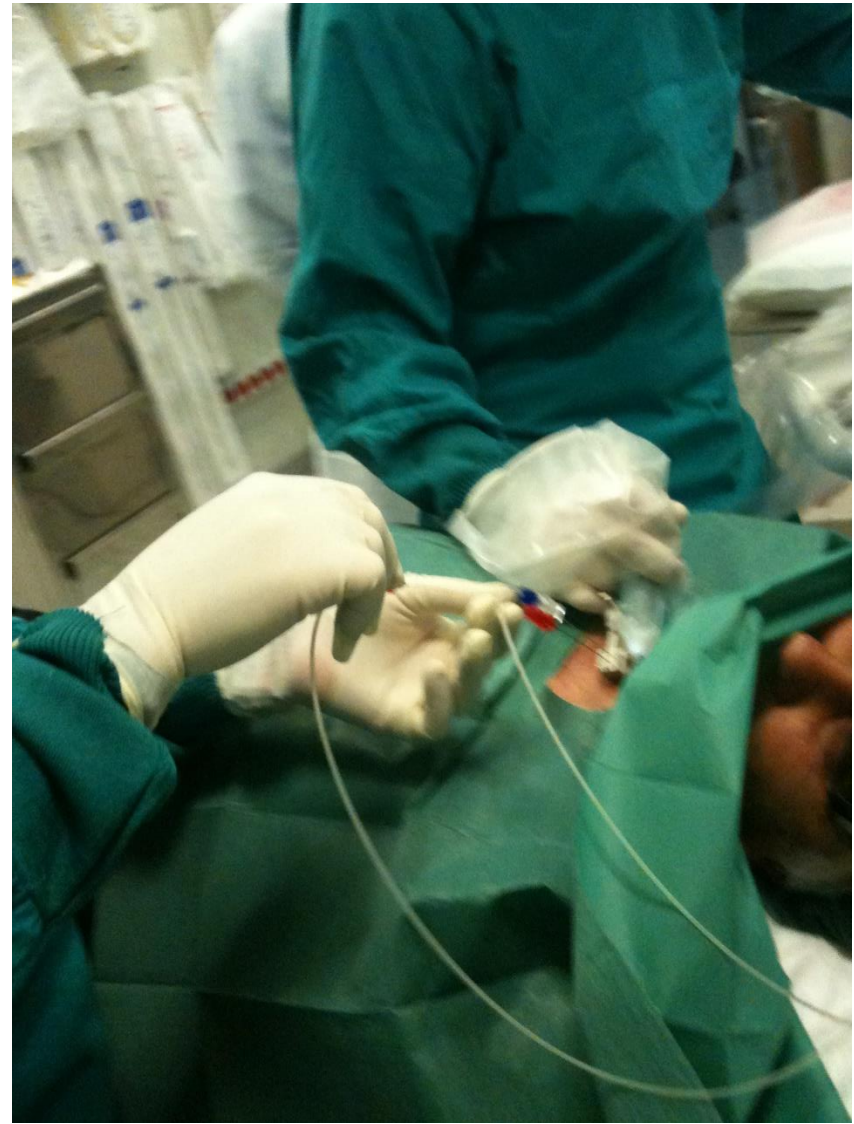
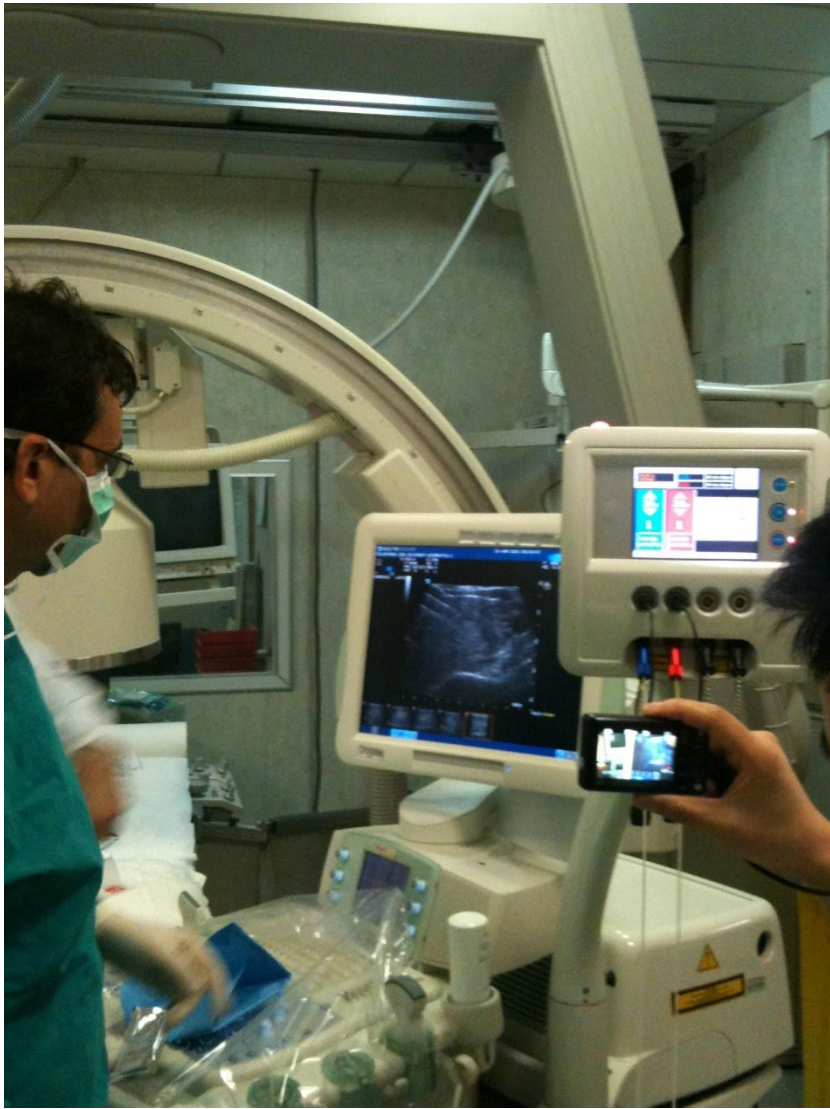
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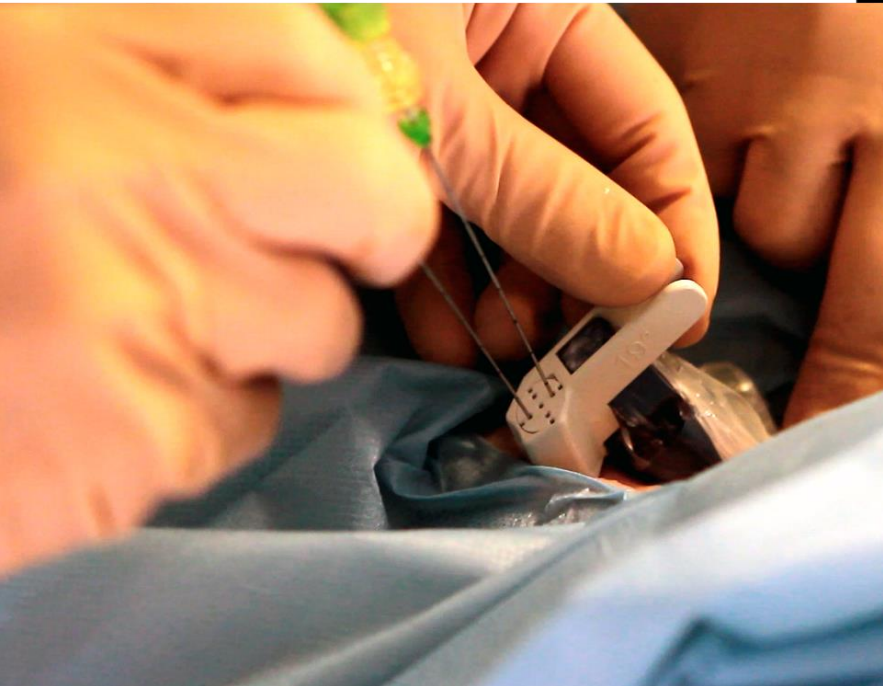
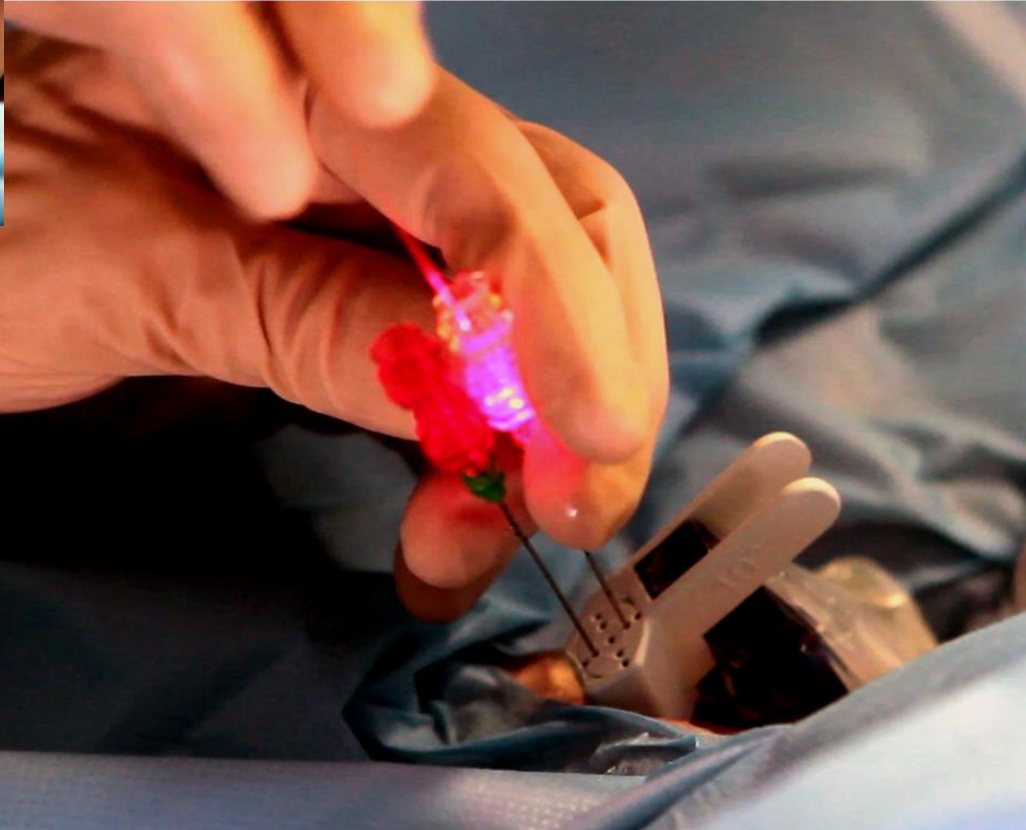
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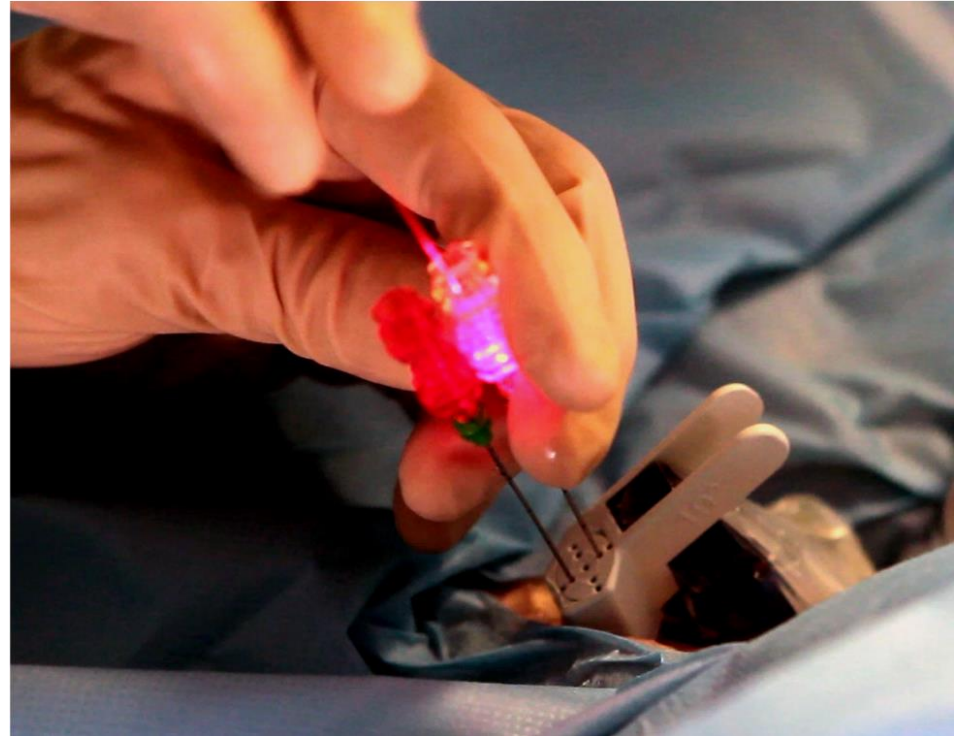
Albano











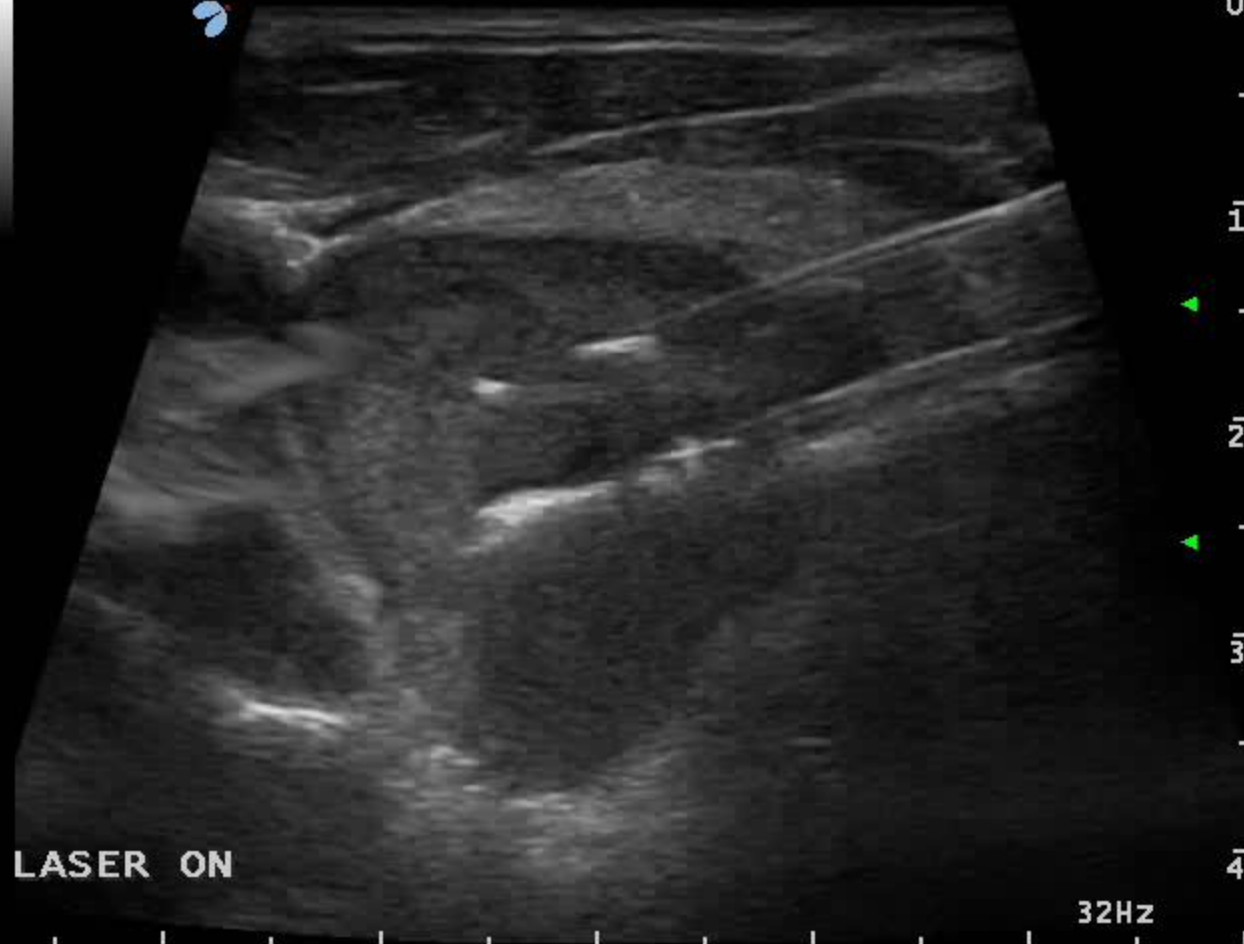
LAMARQUE, OLIVIER,

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LASER ON

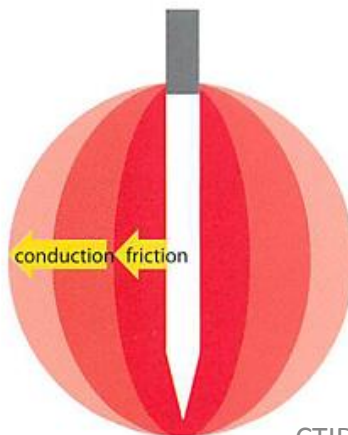
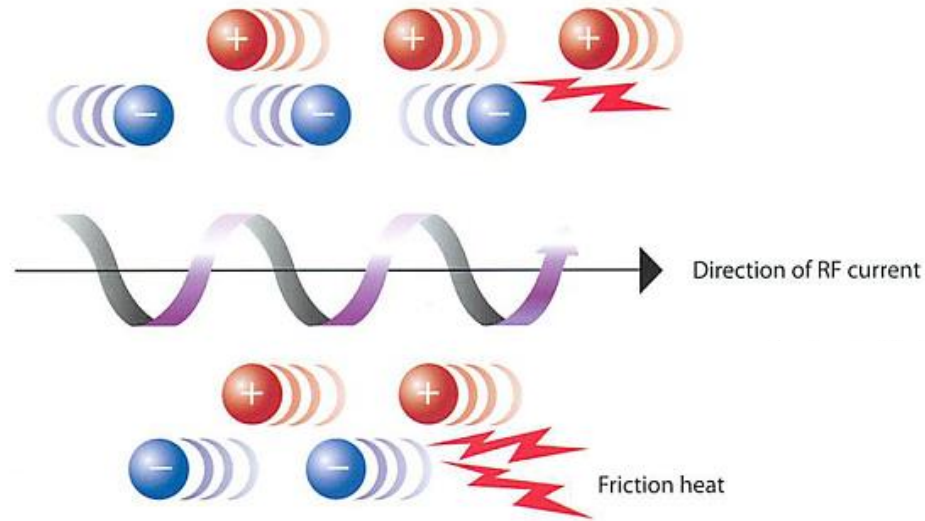
32Hz



## Contrast enhancement US image



# La radiofréquence



# Bibliographie

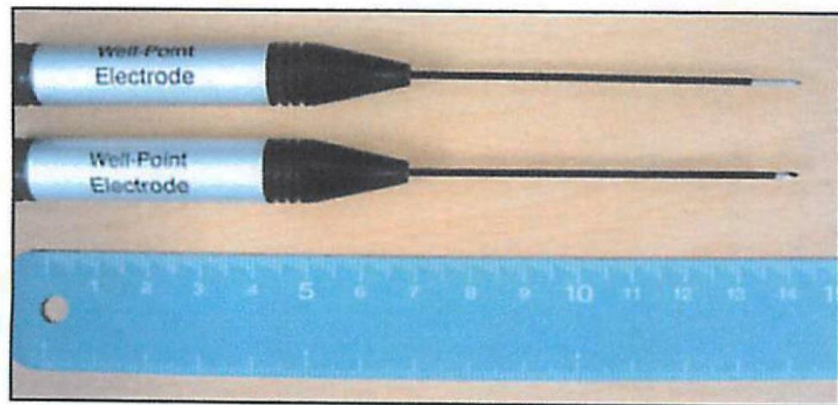
Stefano Spiezia,<sup>1</sup> Roberto Garberoglio,<sup>2</sup> Francesco Milone,<sup>3</sup> Valeria Ramundo,<sup>3</sup> Corrado Caiazzo,<sup>1</sup> Angelo Pio Assanti,<sup>1</sup> Maurilio Deandrea,<sup>2</sup> Paolo P. Limone,<sup>2</sup> Paolo E. Macchia,<sup>3</sup> Gaetano Lombardi,<sup>3</sup> Annamaria Colao,<sup>3</sup> and Antongiulio Faggiano<sup>3</sup> Thyroid Nodules and Related Symptoms Are Stably Controlled Two Years After Radiofrequency Thermal Ablation *Thyroid* Volume 19, Number 3, 2009 <sup>a</sup>

Park KW, Shin JH, Han BK, Ko EY, Chung JH 2011 Inoperable symptomatic recurrent thyroid cancers: preliminary result of radiofrequency ablation. *Ann Surg Oncol* 18:2564–2568

Baek JH, Kim YS, Sung JY, Choi H, Lee JH 2011 Locoregional control of metastatic well-differentiated thyroid cancer by ultrasound-guided radiofrequency ablation. *Am J Roentgenol* 197: W331–W336

Inoperable symptomatic recurrent thyroid cancers: preliminary result of radiofrequency ablation. [Park KW<sup>1</sup>](#), [Shin JH](#), [Han BK](#), [Ko EY](#), [Chung JH](#). *Ann Surg Oncol*. 2011 Sep;18(9):2564-8

# Radiofréquence



**TABLE 2: Clinical Data on Control Group**

Characteristic	Enrollment	Follow-Up	<i>p</i>
Symptom score	3.13 ± 1.51 (0–6)	3.40 ± 1.72 (1–7)	0.21
Cosmetic grade	3.47 ± 0.64 (2–4)	3.60 ± 0.63 (2–4)	0.16
Volume (mL)	6.9 ± 4.0 (2.7–16.1)	7.1 ± 3.8 (3.1–16.2)	0.46
Triiodothyronine (ng/dL)	113.18 ± 18.51 (72–149)	115.95 ± 23.53 (71–157)	0.71
Free thyroxine (ng/dL)	1.49 ± 0.31 (0.90–1.9)	1.45 ± 0.24 (0.90–1.77)	0.93
Thyrotropin (μIU/L)	1.50 ± 0.82 (0.81–3.67)	1.28 ± 0.71 (0.49–2.72)	0.46

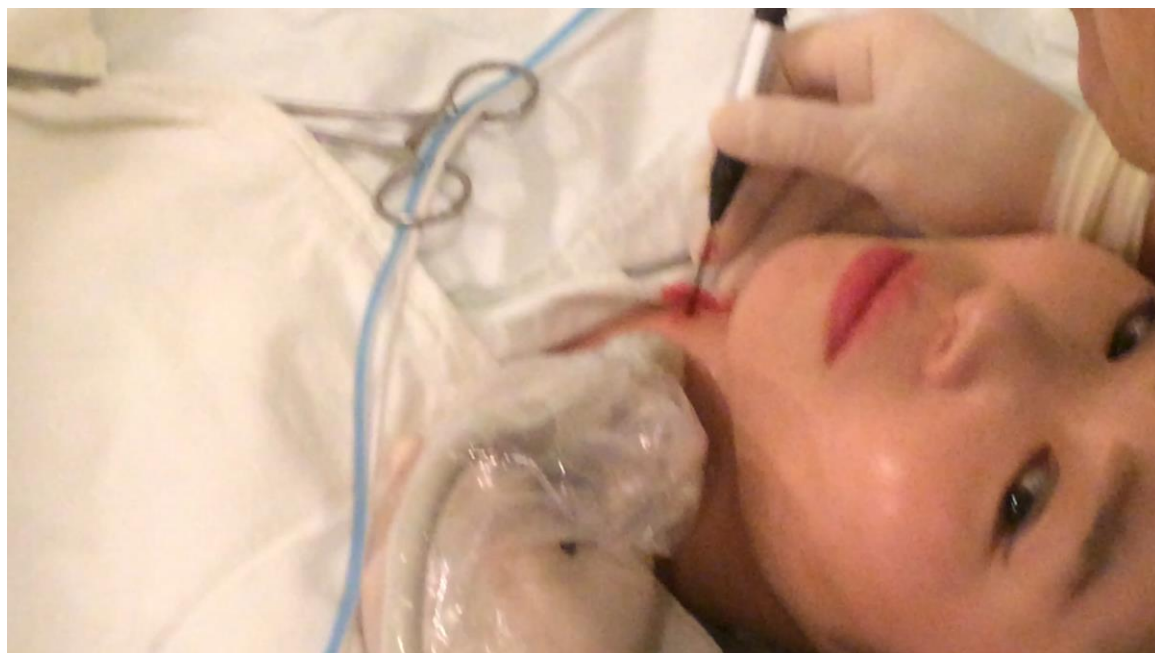
**TABLE 3: Clinical Data on Radiofrequency Ablation Group**

Characteristic	Enrollment	Follow-Up	<i>p</i>
Symptom score	3.33 ± 0.90 (2–5)	1.00 ± 0.76 (0–2)	0.001
Cosmetic grade	3.60 ± 0.51 (3–4)	1.53 ± 0.52 (1–2)	0.001
Volume (mL)	7.5 ± 4.9 (1.7–20.0)	1.3 ± 0.8 (0.2–2.6)	0.001
Triiodothyronine (ng/dL)	104.59 ± 13.81 (79–124)	111.83 ± 19.21 (73–141)	0.32
Free thyroxine (ng/dL)	1.52 ± 0.22 (0.90–1.80)	1.44 ± 0.20 (1.00–1.70)	0.14
Thyrotropin (μIU/L)	1.50 ± 0.81 (0.47–2.35)	1.50 ± 0.85 (0.50–3.41)	0.82

Baek JH, Kim YS, Lee D, Huh JY, Lee JH. Benign predominantly solid thyroid nodules: prospective study of efficacy of sonographically guided radiofrequency ablation versus control condition. *AJR American journal of roentgenology*. 2010;194(4):1137-42.



KE 902 21 mars 2014 20:35





# A retenir

- Certaines récurrences ganglionnaires ne sont ni opérables ni accessibles à un traitement isotopique
- Les techniques alternatives sont disponibles, avec de très rares complications. (traitement des loges)