



甲狀腺射頻消融新品培訓

2024 Launch of New RFA for Thyroid Tumor Ablation

活動日期：2024/03/2 星期六 13:00 ~ 17:00

活動地點：台灣腫瘤消融學院（台北市徐州路 21 號/ 徐州路紹興南街口）

<https://maps.app.goo.gl/TeLHzDfPLUJ5UYRK9>

Time	Topic	Speaker	Moderator
12:30-13:00	Registration		
13:00-13:10	Opening by 黃凱文 理事長		
13:10-13:30	The current criteria of thyroid tumor ablation	台大醫院耳鼻喉部 楊宗霖教授	黃凱文 主席
13:30-13:50	Basic anatomy and techniques for thyroid RFA	台大醫院外科部 吳明勳醫師	
13:50-14:10	The tips and tricks of thyroid tumor ablation	中山附醫醫學影像部 鄭凱倫醫師	
14:10-14:30	Introduction of AblatePal RFA	仁寶電腦 吳家宏	
14:30-16:30	操作訓練 Hands-on training All panelist		吳明勳 楊宗霖 郭庭均 鄭凱倫
16:30	Closing Remark		

主辦單位：台灣腫瘤消融學院

台灣腫瘤消融醫學會

報名連結：<https://forms.gle/5pKYXdMFCV4s5DRy6>



Curriculum Vitae

楊宗霖 Tsung-Lin Yang MD. PhD.

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現職

臺灣大學醫學院教授

臺大醫院耳鼻喉部主治醫師

臺灣大學發育生物學與再生醫學研究中心執行長

主要學歷

國立台灣大學醫學系畢業

國立台灣大學醫學院醫學工程研究所博士

主要經歷 (Taiwan)

國立台灣大學附設醫院雲林分院耳鼻喉部主任

台灣頭頸部腫瘤醫學會 常務監事

台灣機器手臂手術學會 常務理事

台灣介入治療超音波學會 常務理事

台灣耳鼻喉科醫學會 理事, 副秘書長

過去榮譽與成果 (selected)

1. 科技部傑出研究獎
2. 中央研究院年輕學者研究著作獎
3. 科技部吳大猷先生紀念獎
4. 中華民國國家青年獎章得獎人
5. 李鎮源院長紀念醫學獎
6. 科技部優秀年輕學者研究計畫獲獎人
7. 第十一屆中華民國國家新創獎
8. 台大醫院傑出研究獎
9. 歐亞頭頸腫瘤醫學會傑出貢獻獎
10. 國際材料及再生醫學學會優秀論文獎
11. 世界首例經髮際線機器手臂頭頸部腫瘤切除手術
12. 杜詩綿耳鼻喉頭頸部腫瘤優秀論文獎
13. 中華民國醫用超音波學會年度優秀論文獎
14. 第六屆中華民國國家新創獎
15. 台灣耳鼻喉科醫學會年度優秀論文獎
16. 美國耳鼻喉頭頸外科醫學會年度醫學獎
17. 杜詩綿耳鼻喉科基金會杜詩綿教授獎

The current criteria of thyroid tumor ablation

Tsung-Lin Yang (楊宗霖) MD. PhD.

Department of Otolaryngology, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, Taiwan

Abstract

Thyroid tumors have been frequently encountered clinically. Although most are benign, some of them require treatments because of clinical symptoms and esthetic concern. In addition to surgical intervention, the ultrasound-guided techniques including radiofrequency ablation (RFA) afford minimal invasive approaches for diagnoses and treatments of thyroid tumors. The feasibility of these techniques had been demonstrated, and the safety and efficacy had been confirmed in literature. Success of tumor treatment without significant complications was achieved, and also with favorable esthetic outcomes. Although in the current ATA guideline, RFA is only described for recurrent thyroid cancer and the metastatic foci, its indications for other thyroid diseases including benign thyroid tumors remained unconfirmed. To establish RFA as a standard alternative to surgery for all kinds of thyroid tumors, it is imperative to evaluate the potential efficacy and complications of RFA. Without evidences supporting RFA utility in treating thyroid tumors in current literature, prospective randomized studies are suggested to be conducted to define eligibility criteria. It can be beneficial to evaluate the safety, long-term efficacy and complications, and cost effectiveness in the management of thyroid tumors.

Curriculum Vitae

Personal Information

Full Name: Dr. Ming-Hsun Wu

Nationality: Taiwan

Degree: M.D., Ph.D.

Position: Associate Professor

Department: Surgery

Organization: National Taiwan University Hospital

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Educational Background & Professional Experience

2021-present: Associate Professor, Surgery, National Taiwan University Hospital

2019-present: Mentor of Thyroid Ablation, Taiwan Academy of Tumor Ablation

2011-2012: Visiting Assistant Professor, Surgery, University of California, San Francisco

2008-present: Director, Taiwan Association of Endocrine Surgeons

2005-2011: Doctor of Philosophy, Graduate Institute of Toxicology, National Taiwan University

2004: Fellow, Surgery, Tokyo Women's Medical University

1992-1999: Doctor of Medicine, College of Medicine, Kaohsiung Medical University

Publications (about ultrasound-guided procedures)

1. "Computer-Analyzed Ultrasound Predictors of the Treatment Efficacy of Radiofrequency Ablation for Benign Thyroid Nodules." *World J Surg.* 2022 Jan; 46(1): 112-120. doi: 10.1007/s00268-021-06340-9. Epub 2021 Oct 4. 3.
2. "Differences in the Ultrasonographic Appearance of Thyroid Nodules after Radiofrequency Ablation." *Clin Endocrinol (Oxf).* 2021 Sep; 95(3): 489-497. doi: 10.1111/cen.14480. Epub 2021 May 3. 4.
3. "2022 Taiwan Clinical Multicenter Expert Consensus and Recommendations for Thyroid Radiofrequency Ablation." *Ultrasonography.* 2023 Jul; 42(3): 357-375. doi: 10.14366/usg.22126. Epub 2022 Nov 19. 5.
4. "Radiofrequency Ablation of Benign Thyroid Nodules: Recommendations from the Asian Conference on Tumor Ablation Task Force." *Ultrasonography.* 2021 Jan; 40(1): 75-82. doi: 10.14366/usg.20112. Epub 2020 Sep 8. 6.
5. "Multicenter Study of Benign Thyroid Nodules with Radiofrequency Ablation: Results of 762 Cases over 4 Years in Taiwan." *J Pers Med.* 2022 Jan 6; 12(1): 63. doi: 10.3390/jpm12010063.

Basic anatomy and techniques for thyroid RFA

Surgical Opinion of Radiofrequency Ablation in Benign/Malignant Nodular Goiter
Radiofrequency ablation (RFA)

RFA induces thermal injury to thyroid nodules through the deposition of electromagnetic energy. The electrode is inserted from the isthmus into the targeted nodule with a transisthmic approach. Multiple conceptual areas of the nodule are ablated unit-by-unit by moving shot technique.

Clinical results

Solid nonfunctioning benign thyroid nodules

A variable number of treatments induced a reduction of the nodule volume that ranged from 33–58% at 1 month and 51–85% at 6 months. Larger nodules required more treatment sessions than smaller nodules to achieve a similar volume reduction.

Solid functioning benign thyroid nodules

Nodule volume, local problems, and thyroid hyperfunction showed a significant improvement. Partial regrowth may happen following incomplete ablation of the margin of the hyperfunctioning nodule. Complications

The overall complication rate was about 3.3%, and the major complication rate was 1.4%. Pain is the most common complaint during the RFA procedure. Voice changes due to injury of the recurrent laryngeal or vagus nerves are the major risk.

Perithyroidal hemorrhage may be prevented by examining the perithyroidal vessels before inserting the electrode and with the use of small-bore electrodes. Skin burn at the electrode puncture site is possible. Nodule rupture presents with sudden neck bulging and pain during the follow-up period.

Cost, time consumption, and indications

The cost of an electrode is about NT.25000 per session. Treatment may be performed with a time expenditure of about 30 minutes and the fee is about NT.20000.

Recent recommendations for thyroid RFA by the Korean Society of Thyroid Radiology suggested indications: 1) patients with nodule-related symptoms; 2) patients with cosmetic problems; and 3) patients with autonomously functioning thyroid nodule causing thyrotoxicosis. RFA is currently not recommended for follicular neoplasms or primary thyroid cancers.



鄭凱倫醫師

學歷：

2000-2007: 中山醫學大學醫學系

經歷：

2007-2010: 中山醫學大學附設醫院醫學影像部 住院醫師

2010-2011: 中山醫學大學附設醫院醫學影像部 總醫師

2015.01~2016.01: 韓國首爾峨山醫院(Asan Medical Center)進修

現職:

2012.02~ 中山醫學大學附設醫院醫學影像部 主治醫師

專長：

神經放射線學

頭頸部腫瘤射頻燒灼

學會：

中華民國放射線醫學會專科醫師

中華民國神經放射線醫學會專科醫師

Radiofrequency ablation (RFA) is a well-known, effective, and safe method for treating thyroid nodules. Thyroid RFA has now been adopted worldwide, with subsequent advances in devices and techniques. To optimize the treatment efficacy and patient safety, understanding the basic and advanced RFA techniques and selecting the optimal treatment strategy are critical.

In this presentation, advanced techniques such as complete treatment to prevent marginal regrowth and vascular ablation techniques for RFA treatment of thyroid nodules will briefly be introduced.



John Wu 吳家宏

Work Experience:

- Compal Electronics, Medical Product Department.
Product Manager, Present.
- Sanofi Taiwan.
Digital HealthCare Manager, 2023.
- SyncVision Technology Corp.
Executive Vice President, 2017-2023.
- INNOSPREAD
Manager, 2015-2017.
- Noordhoff Craniofacial Foundation
Social Worker, 2010- 2012.

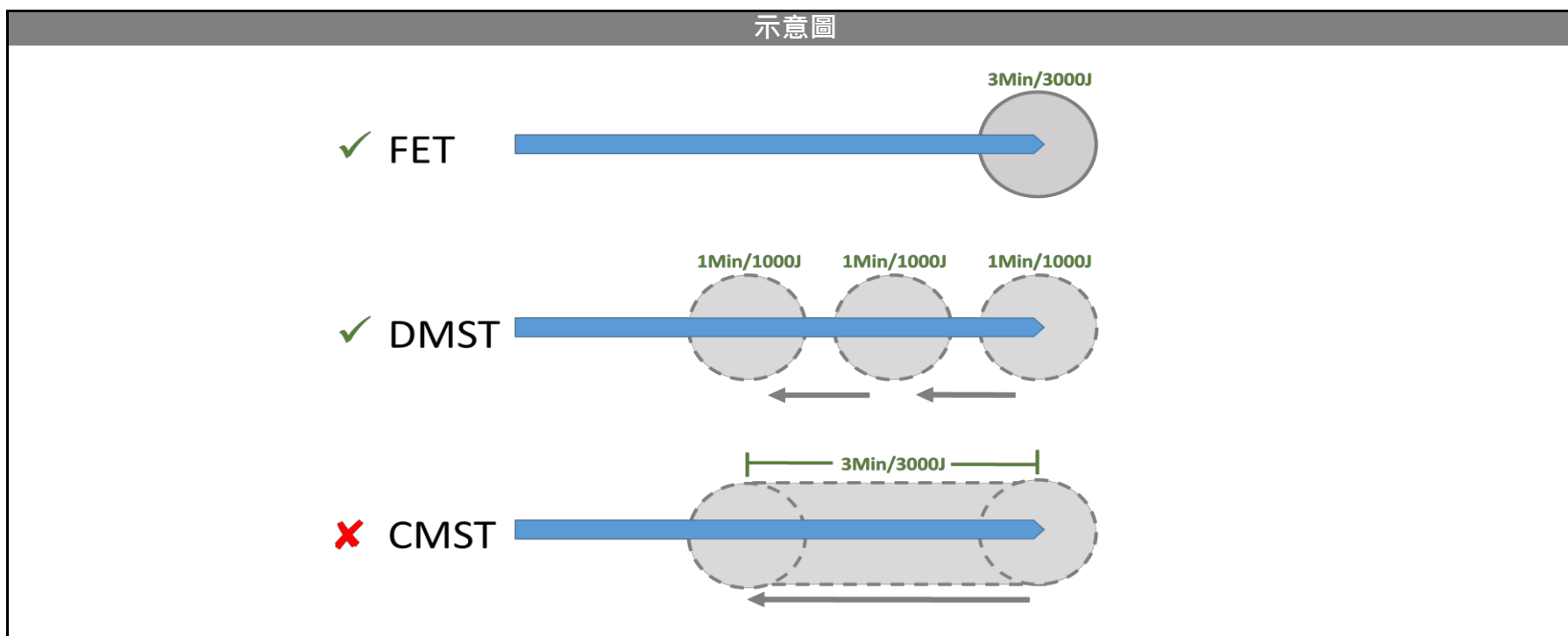
Education:

- Chang Gung University, Master, Medical Design in Industrial Design Academy.
- National Chung Cheng University, Bachelor, Psychology.
- Taipei Municipal Cheng gong High School.

Specialty:

- Medical product management.
- Medical device design & development.
- Medical device regulation & compliance.
- Project planning & management.

消融操作方法	FET (fixed electrode technique)	DMST (discontinuous moving shot technique)	CMST (continuous moving shot technique)
方法說明	消融過程中，電極針從頭至尾停留 在一個固定位置	消融過程中，電極針循序變換數個位置， 每個位置上停留一段時間，並進行一次消 融；並未邊消融邊移動	消融過程中，電極針持續進行消融並同步 以線性移動位置，邊消融邊移動
建議操作方式	入針在深部，消融後切開呈現	1.入針在深部，消融後切開呈現 2.入針在表淺部，直接在過程中呈現 (過程中請保持裸針在組織內，勿暴露在 外，以免阻抗偵測異常)	不建議以此方式進行
是否適用於消融寶AblatePal	是	是	否 (具有impedance安全保護機制，若消融 過程中連續移動，易導致變化值過大而自 動停止)



CURRICULUM VITAE

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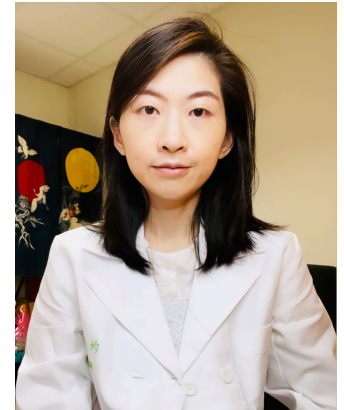
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Current Position:

- Assistant professor, Department of Surgery and Traumatology, National Taiwan University Hospital
- Vice chairperson, Organ Procurement Organization, Department of Surgery, National Taiwan University Hospital



Education and Training

PhD of Anatomy and Cell Biology (Glycobiology of cancers) National Taiwan University, Taipei, Taiwan	Sep 2015 - Jan 2021
Fellowship of Pancreas, Upper GI, and Endocrine Surgery National Taiwan University Hospital, Taipei, Taiwan	Jan 2013 - Jun 2014
Residency of General Surgery National Taiwan University Hospital, Taipei, Taiwan	Jul 2008 - Dec 2012
Internship National Taiwan University Hospital, Taipei, Taiwan	Jun 2007 - Jun 2008
Doctor of Medicine National Taiwan University, Taipei, Taiwan	Sep 2001 - Jun 2008
Oversea Basic Research training by Standing Committee on Research Exchange (Immunity and Fungal infection) Medical Mycology Research Center, Chiba University School of Medicine, Chiba, Japan	Jun 2005 - Aug 2005
Oversea clinical training by Standing Committee on Research Exchange (General surgery and Emergency) Chiba University Hospital, Chiba, Japan	Jun 2005 - Aug 2005