



2023 Thyroid Ablation Master Class

地點：林口長庚醫院研究大樓
 ● 1樓 國際會議廳（報到）
 ● 8樓 手術技能訓練暨研發中心（實作課程）
 主辦單位：中華民國內分泌學會



Register now

2023
Nov 19
 Sunday
 09:00-17:00



Agenda

Time	Topic	Speaker	Moderator
08:40-09:00	Registration		
09:00-09:10	Opening	內分泌學會 劉鳳炫 理事長	
09:10-09:50	The current criteria of thyroid tumor ablation	林口長庚 周威宇	林口長庚 劉鳳炫 理事長
09:50-10:30	Basic anatomy and techniques for thyroid ablation	台中榮總 李宇璇	台大醫院 施翔蓉 主委
10:30-11:00	Coffee Break		
11:00-11:40	Thermal ablation of thyroid cancer	高雄長庚 陳玟潔	高雄長庚 周振凱 主任
轉移至研究大樓 8 樓 手術技能訓練暨研發中心			
12:00-13:00	-Lunch symposium- GE Application of ultrasound contrast in thyroid ablation	中山附醫 鄭凱倫	林口長庚 劉鳳炫 理事長
13:00-13:40	Ethanol ablation of thyroid cysts	澎湖三總 黃嘉滄	內湖三總 呂介華 主任
13:40-14:00	分組和操作說明	陳維健 林口長庚	
14:00-17:00	Hands-on training: 手術技能訓練暨研發中心	鄭凱倫 中山附醫 李晏榮 林口長庚 李宇璇 台中榮總 姜和均 大昌義大	

報名資格	全天課程報名費 (課程+實作)	上午課程報名費 (僅期放會員)
內分泌學會會員	500元	免費
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申請繼續教育積分單位：
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中華民國內分泌學會
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2023 Thyroid Ablation Master Class
 Nov 19 Sunday 09:00am-17:00pm

地點：林口長庚醫院研究大樓 ● 1樓 國際會議廳（報到）
 ● 8樓 手術技能訓練暨研發中心（實作課程）
 主辦單位：中華民國內分泌學會
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 執行編輯
 秘書長陳維健醫師 | 副秘書長姜和均醫師 | 副秘書長李宇璇醫師
 主編 內分泌科 李宇璇醫師 | 副主編 內分泌科 周威宇醫師
 副主編 內分泌科 李宇璇醫師 | 副主編 內分泌科 周威宇醫師 | 副主編 內分泌科 姜和均醫師 | 副主編 內分泌科 李宇璇醫師

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2023Thyroid Ablation Master Class

演講者 CV 格式

個人資料



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2019/07 - 2020/07	中華民國骨質疏鬆學會	副秘書長

研究領域

1	Minimal invasive intervention of thyroid nodules
2	
3	

論文 (5 important publications – latest sequence)

1	Li YR, Chou WY, Chan WK, Cheng KL, Sun JH, Liu FH, Chen ST, Liou MJ. Successful Applications of Food-Assisted and -Simulated Training Model of Thyroid Radiofrequency Ablation. <i>Front Endocrinol (Lausanne)</i> . 2022 Mar 31;13:809835.
2	Chou WY, Li YR, Chan WK, Chen ST. Association of diabetic ketoacidosis, severe hypoglycemia and glycemic control among children and young adults with type 1 diabetes mellitus treated with premixed versus basal-bolus insulin therapy. <i>Biomed J</i> . 2018 Dec;41(6):348-355.
3	Chou WY, Li YR. Brown tumours of the spine presenting with acute urine incontinence. <i>CMAJ</i> . 2017 Sep 5;189(35):E1116.
4	
5	

The current criteria of thyroid tumor ablation

甲狀腺腫瘤消融的治療標準

Wei-Yu Chou

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林口長庚紀念醫院 內分泌暨新陳代謝科

Thyroid tumor ablation is a critical intervention in the management of thyroid disorders, and its criteria have evolved over time in response to advances in medical technology and a deeper understanding of thyroid pathology. This abstract provides an overview of the current criteria used for thyroid tumor ablation.

The criteria for thyroid tumor ablation are multifaceted and are influenced by factors such as tumor size, histology, location, patient age, and comorbidities. Recent developments in imaging modalities, particularly ultrasound and fine-needle aspiration cytology, have improved the precision of diagnosing thyroid tumors and assessing their characteristics. Additionally, the advent of minimally invasive techniques, such as percutaneous ethanol injection (PEI) and radiofrequency ablation (RFA), has expanded the options for ablative therapies.

In the context of benign thyroid nodules, the criteria for ablation have evolved to accommodate various techniques. High-Intensity Focused Ultrasound (HIFU), a non-invasive and precise method, is considered when nodules cause symptoms, cosmetic concerns, or are suboptimal candidates for surgery. Radiofrequency Ablation (RFA) is favored for solid and cystic nodules with similar indications, while Microwave Ablation (MWA) is gaining prominence for larger lesions. Ethanol Ablation remains a suitable choice for cystic nodules, offering a minimally invasive option.

In conclusion, the current criteria for thyroid tumor ablation reflect a patient-centered approach, leveraging technological advancements and tailored therapeutic strategies. A thorough assessment of each patient's condition and close collaboration among healthcare providers are crucial in determining the most suitable ablation approach for thyroid tumors. Further research and clinical trials are warranted to refine these criteria and enhance the efficacy of thyroid tumor ablation procedures.

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照片(JPG, TIFF 檔)



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2001~2008	台北醫學大學醫學系	學士
2020~2022	台北醫學大學大數據所	碩士

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2017~ 至今	台中榮民總醫院	主治醫師
2023~ 至今	陽明交通大學	助理教授

研究領域

1	甲狀腺
2	糖尿病
3	

論文 (5 important publications – latest sequence)

1	Li YH, Wu MH, Lee WJ, Lee IT. A Synergistic Effect between Plasma Dickkopf-1 and Obstructive Coronary Artery Disease on the Prediction of Major Adverse Cardiac
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	Events in Patients with Angina: An Observational Study. <i>Biomolecules</i> . 2022 Oct 2;12(10):1408. doi: 10.3390/biom12101408
2	Li YH , Lee IT, Chen YW, Lin YK, Liu YH, Lai FP. Using Text Content From Coronary Catheterization Reports to Predict 5-Year Mortality Among Patients Undergoing Coronary Angiography: A Deep Learning Approach. <i>Front Cardiovasc Med</i> . 2022 Feb 28; 9:800864. doi: 10.3389/fcvm.2022.800864. PMID: 35295250; PMCID: PMC8918537.
3	Li YH , Sheu WH, Yeh WC, Chang YC, Lee IT. Predicting Long-Term Mortality in Patients with Angina across the Spectrum of Dysglycemia: A Machine Learning Approach. <i>Diagnostics (Basel)</i> . 2021 Jun 9;11(6):1060. doi: 10.3390/diagnostics11061060. PMID: 34207578; PMCID: PMC8226455.
4	Li, Y. H. , Sheu, W. H., Chou, C. C., Lin, C. H., Cheng, Y. S., Wang, C. Y., Wu, C. L., & Lee, I. T. (2021). The Clinical Influence after Implementation of Convolutional Neural Network-Based Software for Diabetic Retinopathy Detection in the Primary Care Setting. <i>Life (Basel, Switzerland)</i> , 11(3), 200. https://doi.org/10.3390/life11030200
5	Li, Y. H. , & Lee, I. T. (2020). Hyperthyroidism and vascular cell adhesion molecule-1 are associated with a low ankle-brachial index. <i>Scientific reports</i> , 10(1), 17076. https://doi.org/10.1038/s41598-020-74267-7

Basic anatomy and techniques for thyroid ablation

Li Yu Hsuan

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台中榮總 新陳代謝科

Anatomy Surrounding the Thyroid

Blood Vessels: The thyroid is richly vascularized, primarily by the superior and inferior thyroid arteries. The superior thyroid artery branches off from the external carotid artery, while the inferior thyroid artery originates from the thyrocervical trunk. These arteries supply the upper and lower parts of the gland respectively. Additionally, the thyroid's robust venous system, including the superior, middle, and inferior thyroid veins, drains into the internal jugular vein.

Nerves: The recurrent laryngeal nerve, which supplies the muscles controlling the vocal cords, is of particular concern during RFA. Injury to this nerve can lead to voice changes or hoarseness.

Techniques for Thyroid RFA

Moving Shot Technique: This is a dynamic method where the electrode is moved in multiple directions within the nodule during the ablation process. By doing so, a larger volume of the nodule can be treated, ensuring comprehensive ablation.

Trans-Isthmus Approach: In this technique, the electrode is inserted transversely across the isthmus of the thyroid. It provides a straight path for the electrode, minimizing the risk of damaging surrounding structures.

Ultrasound Guidance: Continuous ultrasound imaging ensures accurate electrode positioning, precise hydrodissection monitoring, and real-time evaluation of the ablation. This guidance is crucial to prevent inadvertent damage to nearby structures.

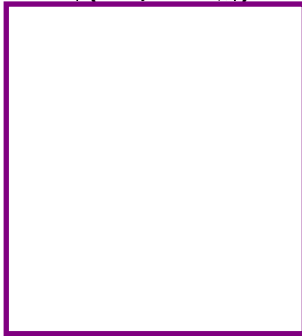
Hydrodissection: To protect nearby critical structures, hydrodissection is employed. This technique involves injecting a D5W between the thyroid and neighboring structures, forming a temporary fluid barrier. This barrier concentrates the RF energy on the thyroid nodule and prevents thermal injury to surrounding tissues, particularly the recurrent laryngeal nerve.

Venous Ablation: For thyroid nodules closely associated with veins, venous ablation becomes essential. This process uses RFA to collapse and obliterate these veins, ensuring they don't reduce the ablation's efficacy by acting as heat sinks.

With the thyroid gland's intricate surrounding anatomy, precision during RFA procedures is paramount. Techniques such as hydrodissection, venous ablation, the moving shot technique, and the trans-isthmus approach have revolutionized thyroid RFA's safety and efficacy.

個人資料

照片(JPG, TIFF 檔)



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2015- 2018	Department of Internal Medicine, Chang Gung Memorial Hospital, Kaohsiung Medical Center, Taiwan.	Resident
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2022- Present	Division of Endocrinology and	Director of endocrinology

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研究領域

1	Thyroid radiofrequency ablation
2	Endocrine disorder
3	Diabetes mellitus and Growth Differentiation Factor-15 (GDF-15)

論文 (5 important publications – latest sequence)

1	Wen-Chieh Chen , Chen-Kai Chou, Yen-Hsiang Chang, Pi-Ling Chiang, Lay-San Lim, Shun-Yu Chi, Sheng-Dean Luo, Wei-Che Lin*. Efficacy of Radiofrequency Ablation of Metastatic Papillary Thyroid Cancer with and without Initial Biochemical Complete Response Status. <i>Frontiers in endocrinology</i> 2022. 13:933931.
2	Wen-Chieh Chen , Sheng-Dean Luo, Wei-Chih Chen, Chen-Kai Chou, Yen-Hsiang Chang, Kai-Lun Cheng*, Wei-Che Lin*. The Importance of Nodule Size in the Management of Ruptured Thyroid Nodule after Radiofrequency Ablation: A Retrospective Study and Literature Review. <i>Frontiers in endocrinology</i> 2021. 10.3389/fendo.2021.776919.
3	Wen-Chieh Chen , Jung-Fu Chen, Sheng-Dean Luo, Chen-Kai Chou, Wei-Che Lin*. Radiofrequency Ablation for Locally Recurrent Papillary Thyroid Cancer Refractory to Radioiodine Therapy. <i>Journal of Radiological Science</i> 2021; 46:61–69.
4	Lay San Lim, Wei-Che Lin*, Pi-Ling Chiang, Shun Chen Huang, Yueh-Sheng Chen, Yen-Hsiang Chang, Wen-Chieh Chen , Shun-Yu Chi, Chen-Kai Chou*. One year follow-up of US-Guided radiofrequency ablation for low-risk papillary thyroid microcarcinoma: The first experience in Taiwan. <i>J Formos Med Assoc.</i> 2021 ; 14:S0929-6646(21)00472-1.
5	Wen-Chieh Chen , Jung-Fu Chen*. Glycemic Control, Heart and Kidney Protection: Trends of Guidelines for Hyperglycemia Treatment in Patients with Type 2 Diabetes. <i>J Intern Med Taiwan</i> 2021; 32: 169-179.

Thermal ablation of thyroid cancer

甲狀腺癌之熱消融

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高雄長庚紀念醫院 新陳代謝科

Thermal ablation techniques, such as radiofrequency ablation (RFA) and microwave ablation (MWA), are recommended for patients who have locally recurrent thyroid cancers or neck lymph node metastases. This recommendation is particularly pertinent for individuals who face a high surgical risk or are averse to undergoing surgery. It's worth noting that these techniques have demonstrated effective management of lesions, even when they are located in critical areas, such as adjacent to the trachea, with minimal complications observed. Additionally, they have been proven to significantly reduce tumor volume and improve symptoms. This consensus has gained recognition in numerous international guidelines.

Conversely, there is ongoing exploration into the application of thermal ablation for papillary thyroid microcarcinoma (PTMC) and primary thyroid cancer beyond the T1b stage. Notably, in 2021, the European Thyroid Association (ETA) and the Cardiovascular and Interventional Radiological Society of Europe (CIRSE) jointly published the first clinical practice guidelines for the use of minimally invasive treatments in managing malignant thyroid lesions. Beyond addressing local recurrence, RFA shows promise in reducing the necessity for subsequent surgeries. The role of RFA in managing recurrent thyroid cancer encompasses both complete ablation (aiming for cure) and palliative ablation. Furthermore, when combined with other therapeutic modalities (radioiodine therapy, combined surgery, external beam radiation therapy, and tyrosine kinase inhibitor...), the treatment outcomes become even more promising.

In this section, we will provide a concise overview of the current evidence and techniques specific to the management of thyroid malignancies. Additionally, we will present our single-center experience with RFA in treating locoregional recurrent thyroid cancer and PTMC in Taiwan.



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研究領域

1	神經放射線學
2	頭頸部腫瘤射頻燒灼
3	

論文 (5 important publications – latest sequence)

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個人資料



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2018	國防醫學院醫學科學研究所博士班	博士候選人

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2017-2018	三軍總醫院澎湖分院重症醫學暨加護中心	專責主治醫師兼主任
2017-迄今	三軍總醫院內科部內分泌新陳代謝科	兼任主治醫師
2017-迄今	三軍總醫院澎湖分院衛教暨共同照護中心	主任

研究領域

1	內分泌及新陳代謝醫學
2	甲狀腺流行病學及微創治療醫學
3	肌少症及肥胖醫學

論文 (5 important publications – latest sequence)

1	Lu CH, Lee CH, Wu LW, Liao CC, Su SC, Liu JS, Li PF, Huang CL , Ho LJ, Lin CM, Lin MH, Chang CY, Liu YC, Lin CP, Cheng AC, Kuo FC. Gender-specific impacts of thigh skinfold thickness and grip strength for predicting osteoporosis in type 2 diabetes. <i>Diabetol Metab Syndr</i> . 2023 May 18;15(1):103.
2	Lee CH, Chiang CF, Lin FH, Kuo FC, Su SC, Huang CL , Li PF, Liu JS, Lu CH, Hsieh CH, Hung YJ, Shieh YS. PDIA4, a new endoplasmic reticulum stress protein, modulates insulin resistance and inflammation in skeletal muscle. <i>Front Endocrinol (Lausanne)</i> . 2022 Dec 23;13:1053882.
3	Huang CL , Wang TW, Chen YC, Hu JM, Ku PM, Hsieh CH, Lee CH, Kuo FC, Lu CH, Su CC, Liu JS, Lin FH, Chou YC, Sun CA. Gout as a risk factor for acute myocardial infarction: evidence from competing risk model analysis. <i>J Investig Med</i> . 2021 Aug;69(6):1161-1167.
4	Su SC, Hung YJ, Huang CL , Shieh YS, Chien CY, Chiang CF, Liu JS, Lu CH, Hsieh CH, Lin CM, Lee CH. Cilostazol inhibits hyperglucose-induced vascular smooth muscle cell dysfunction by modulating the RAGE/ERK/NF- κ B signaling pathways. <i>J Biomed Sci</i> . 2019 Sep 6;26(1):68.
5	Huang CL , Chang HW, Chang JB, Chen JH, Lin JD, Wu CZ, Pei D, Hung YJ, Lee CH, Chen YL, Hsieh CH. Normal fasting plasma glucose predicts type 2 diabetes and cardiovascular disease in elderly population in Taiwan. <i>QJM</i> . 2016 Aug;109(8):515-22.

Ethanol Ablation of Thyroid Cysts

甲狀腺囊腫之酒精消融術

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國防醫學院三軍總醫院澎湖分院內科部內分泌及新陳代謝科

Thyroid cysts are much common disorders in clinical practice; they are discovered by ultrasound in 41–50% of the general population. The majority of thyroid cysts are benign and asymptomatic, and they are usually managed by observation and follow-up regularly.

Thyroid-stimulating hormone (TSH) suppressive therapy with levothyroxine for thyroid cysts is still controversial because the effect of medication in volume reduction of thyroid cysts is uncertain and may result in side effects such as long-term osteoporosis or atrial fibrillation. Surgical excision is established as one of the therapeutic strategies for symptomatic thyroid cysts; however, after surgical excision, there are some complications, including hypothyroidism or nerve injury. Surgery for thyroid cysts might be not appropriate for patients who have relatively high risk of surgical excision. Therefore, image-guided nonsurgical procedures such as ethanol ablation (EA) and/or thermal ablation have been proposed as alternative and less invasive approaches for the management of symptomatic thyroid cysts. For cysts or predominantly cystic benign thyroid nodules, ethanol ablation is established as a nonsurgical treatment and becomes one of the mainly therapeutic strategies. Therefore, EA has been proposed as alternative therapies for those who are concerned about the complications of external radiation, refuse external irradiation, may have serious complications following surgery, or who may be at high risk for surgery.

The efficacy of EA for cysts and/or predominantly cystic thyroid nodules has been reported and the mean VRR of thyroid nodules was 91% in cases with EA. It is non-inferiority in the result of a single-session treatment for cysts. More evidences demonstrated that EA was not only non-inferior, but was also superior to thermal ablation. Compared to thermal ablation, EA is a simple and less expensive procedure with the fewer number of treatment sessions. Cysts or predominantly cystic thyroid nodules could be

re-growth after simple aspiration of internal fluid and those should be treated with EA. These results may also be useful and established therapeutic modalities for cases with cysts and/or symptomatic cystic thyroid nodules those can be managed by using EA in clinic practice. For cysts and/or predominantly cystic thyroid nodules, EA has been also suggested as the first-line treatment modality in single session treatment superiority comparing EA and thermal ablation. In addition, the solid component in the thyroid cyst was suggested as the main cause of recurrence. EA and followed thermal ablation are going to be established for complex cysts by staging therapeutic managements.