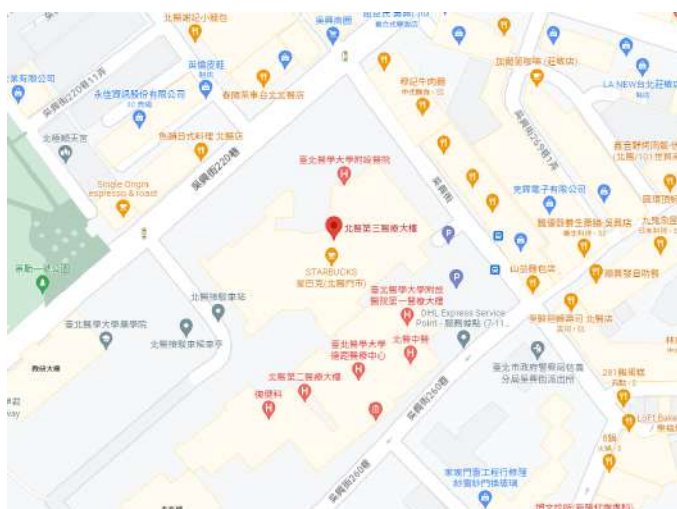


- 時間: 2023 年 10 月 28 日 (星期六) 13:30-16:30
- 地點: 台北醫學大學附設醫院 第三大樓 11 樓 3111 會議室

Time	Topic	Speaker	Moderator
13:30~13:50	Registration		
13:50~14:00	Opening Remarks	台北醫學大學附設醫院 張君照 副院長	
14:00~14:30	TAE (microsphere)+RFA/MWA for HCC	台北醫學大學附設醫院 高偉育 主任	台灣腫瘤消學會 黃凱文 理事長
14:30~15:00	Lipiodol-tagging RFA/MWA for HCC	台大醫院 吳志宏 秘書長	台大醫院 梁博欽 理事長
15:00~15:30	The role of ablative radiotherapy, including SBRT and proton therapy for HCC	台北醫學大學附設醫院 李欣倫 主任	雙和醫院 蔡若婷 主任
15:30~15:50	Coffee break		
15:50~16:50	LIVE DEMO TAE (microsphere)(2023/10/27 北醫倪承賦醫師) + MWA (or RFA SWC)	台北醫學大學附設醫院 高偉育 主任	羅東博愛醫院 江明峯 主任
16:50~17:00	Closing Remarks	臺大醫院 黃凱文 理事長	

- 主辦單位：台灣腫瘤消融醫學會
- 協辦單位：台北醫學大學附設醫院



張君照 副院長/教授
Prof. Chun-Chao Chang
*Vice Superintendent,
Taipei Medical University Hospital*



學歷：

臺北醫學大學醫學研究所碩士 1998 年
臺北醫學院醫學士 1990 年

現職：

臺北醫學大學附設醫院副院長
臺北醫學大學消化醫學研究中心主任
臺北醫學大學醫學院醫學系內科學科教授
臺北醫學大學附設醫院消化內科專任主治醫師
台灣內科醫學會常務理事
台灣消化系內視鏡醫學會理事
台灣微菌聯盟理事
台灣消化系醫學會監事

經歷：

臺北醫學大學附設醫院醫務副院長
臺北醫學大學附設醫院教學副院長
臺北醫學大學附設醫院研究副院長
臺北醫學大學附設醫院教學部主任
臺北醫學大學附設醫院醫務部主任
臺北醫學大學附設醫院內科部主任
臺北醫學大學附設醫院內視鏡室主任
臺北醫學大學附設院內科部消化內科主任
日本京都藥科大學應用藥理學科研究員
日本東京國立癌症中心內視鏡部研究員

主治專長：

吞嚥困難 胃食道逆流 胃潰瘍 十二指腸潰瘍 幽門螺旋桿菌感染
胃腸道出血 腹痛 腹脹 消化不良 大腸憩室 便秘 腹瀉 大腸激躁症
肝功能異常 B 型/C 型肝炎 肝硬化 脂肪肝 膽結石 黃疸 胃腸肝膽腫瘤

Curriculum Vitae

Kai-Wen Huang MD, MS, PhD



Affiliation & Address:

Faculty, Department of Surgery & Hepatitis Research Center
Director & CEO, Centre of Mini-invasive Interventional Oncology
National Taiwan University Hospital

Professor, Graduate Institute of Clinical Medicine
College of Medicine, National Taiwan University

No.7, Chung Shan S. Rd., Taipei City 10002, Taiwan (R.O.C.)
Phone: 886-2-23123456 ext :66144 ; Fax: 886-2-33932872
E-mail: skywing@ntuh.gov.tw

Academic background:

Bachelor, in National Taiwan University, School of Medicine
Master, in Graduate Institute of Clinical Medicine, National Taiwan University, College of Medicine
PhD, in Graduate Institute of Clinical Medicine, National Taiwan University, College of Medicine

Professional career:

Founder & President: Taiwan Academy of Tumor Ablation (TATA)

Board of directors: Asia-Pacific Association of Imaging-guided Minimally Invasive Therapy in
Oncology (AAMIO)

Founder & Board of directors: Asia Congress of Tumor Ablation (ACTA)

Founder & Secretary-general: Taiwan Association of Interventional and Therapeutic Ultrasound
(TAITU)

Chair of Taiwan Academy of Mini-invasive Intervention (TAMI)

Chair of Asia-Pacific Academia of Mini-Invasive Intervention And Oncology (APAIO)

Chair of ACTA Educational Committee


Committee member, SIO International Engagement Committee

Professor [Honorary]: Imperial College London, UK

Editors of Hong Kong Medical Journal, Asian Journal of Surgery, BMC Infectious Diseases, Expert
Review of Gastroenterology & Hepatology, Gut, Hepatology International, Human
Gene Therapy, Journal of the Formosan Medical Association, Journal of
Gastroenterology and Hepatology, Molecular therapy, Oncotarget, Plos One,
Scientific Reports

Research Area:

Genomics, Gene Therapy, Translational medicine, Cancer research, Hepatology & Gastroenterology,
Surgery, Interventional Oncology, Radiofrequency Medicine, Nanomagnetic medicine,
Thermotherapy & Photodynamic therapy

Wei-Yu Kao, M.D. & Ph.D.	
Director, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan	
Associate professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan	
Convener, Taipei Cancer Center, Taipei Medical University, Taipei, Taiwan	

Doctor Wei-Yu Kao's research interests are viral hepatitis (particularly HBV and HCV), nonalcoholic fatty liver disease, liver cirrhosis and hepatocellular carcinoma (particularly local ablation for small HCC). He has demonstrated compliance with the Taiwan Academy of Tumor Ablation accreditation criteria for professional operator on liver tumor ablation since 2016. He has completed Samsung Medical Center Image-guided Tumor Ablation Training Course in 2015 and Juntendo University International RFA Training Program in 2016. He is a reviewer of PLOS ONE, BMC Gastroenterology, International Journal of Oncology, Journal of Microbiology, Immunology and Infection, Journal of the Formosan Medical Association, Liver International, Journal of Gastroenterology and Hepatology, Digestive Diseases, Hepatology International, European Radiology, Cancers and Alimentary Pharmacology & Therapeutics. He is an editorial board of BMC Gastroenterology. He has authored and co-authored 66 peer-review articles and presented 54 oral and poster presentations in conferences.

1999/9-2006/6	M.D., Faculty of Medicine, School of Medicine, Taipei Medical University, Taiwan
2006/8/1-2009/7/31	Residency of Internal Medicine, Taipei Veterans General Hospital, Taipei, Taiwan
2009/8/1-2012/6/30	Chief residency and fellowship of Gastroenterology, Taipei Veterans General Hospital, Taipei, Taiwan
2012/7/1-2013/6/30	Attending Physician, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Veterans General Hospital, Taoyuan branch, Taiwan
2012/8/1-present	Instructor, Faculty of Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan
2013/7/1-present	Attending Physician, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan
2015/8/1-2019/7/31	Instructor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
2019/8/1-2022/7/31	Assistant professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
2021/2/1-present	Convener, Taipei Cancer Center, Taipei Medical University, Taipei, Taiwan
2021/8/1-present	Director, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan
2022/8/1-present	Associate professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

Awards:

1. Young Investigator Award of the Asia Pacific Association for the Study of the Liver, 2016
2. Research Award of Taiwan Association for the Study of the Liver, 2018
3. The first place Research Award of Advances in Digestive Medicine, 2019
4. Research Award of Liver Disease Prevention & Treatment Research Foundation, 2021

TAE (microsphere)+RFA/MWA for HCC

Wei-Yu Kao

Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei Medical University, Taipei, Taiwan

Radiofrequency ablation (RFA) has been accepted as the most effective local ablation for small hepatocellular carcinoma (HCC ≤ 3.0 cm) by several HCC guidelines because the technique is minimally invasive, fewer sessions and easily repeatable. The complete response rates for HCCs ≤ 3.0 cm in size exceeds 90%. However, in prior studies, the complete response rate was reduced to 45%–70% for medium-sized HCCs (3.1–5.0 cm), and it was only 23%–45% for large HCCs (> 5.0 cm) by single RF electrode. The strategy to maximize outcomes of RFA is to increase ablation size and target tumor precisely (ex., real-time fusion imaging, contrast-enhanced ultrasonography, artificial ascites...). The methods of local ablation to get adequate safety margin for large HCCs (> 5.0 cm) include overlapping method, combined with ethanol, combined with chemoembolization, multiple-electrode mono-polar RF or bipolar RF with switch-controller, RITA RF generator with expandable electrodes and new generation microwave ablation (MWA). An increase in the number of sequential overlapping ablations usually results in an irregular shape of coagulation. Incomplete ablation may occur with irregular ablated zones and it is a common reason for treatment failure. A deployed RF electrode can provide a 5- to 7-cm-diameter ablation zone with a single electrode placement, but the shape of the ablation zone is not circular, and the device's multiple tines have the potential to puncture adjacent vital structures. Recently, MWA is designed to achieve larger areas of necrosis compared to RFA and has a good safety profile among liver cancer treatments. However, conventional MWA systems still have major limitations such as unpredictability of the ablation zone size and the elliptical shape of necrosis. New generation MWA can provide predictable ablation results and outcomes regardless of the target location or tissue type. I will demonstrate one case of ultrasound-guided MWA combined with chemoembolization (Microspheres).

Curriculum Vitae

M.D. Po-chin Liang, he graduated from Chung Shan Medical University Hospital on 1991, and got a Ph.D. from Department of Biomedical engineering, National Taiwan University on 2019.

He was resident of Radiologist at National Taiwan University Hospital on 1993~1997. And became an Interventional Radiologist since 1997 at National Taiwan University Hospital. His major was interventional oncology for liver, such as TACE, DEB-TACE, TARE, HAIC, RFA, Microwave, Cryotherapy. He also interested in biliary, urological and vascular intervention. Now, he is director of Department of Medical Imaging, National Taiwan University Hospital, Hsin-Chu branch, since 2020 till now.

He is director of Taiwan Academy of Tumor Ablation(TATA) since 2006 till now, director of Taiwan Liver Cancer Association(TLCA) since 2015 till now, and is President of Taiwan Society of Interventional Radiology(TSIR) and supervisor of Taiwan Radiological Society(TRS) since 2022.

Curriculum Vitae

Wu Chih-Horng

Department of Radiology
National Taiwan University Hospital
No. 7, Chung-Shan South Road, Taipei 100, Taiwan

Tel: 886-2-23123456 ext. 62608, 62612
Email: chw1020@ntuh.gov.tw



Current position

2021.08 ~ Clinical assistant professor, Department of Radiology, NTU
2014.01 ~ Attending, Department of Medical Imaging, NTUH

Education and Training

1999.07 ~ 2006.06 Medical degree, NTU School of Medicine
2005.07 ~ 2006.06 Intern, National Taiwan University Hospital, Taiwan
2006.07 ~ 2010.06 Resident, Department of Medical Imaging, NTUH
2010.07 ~ 2010.12 Fellow, Department of Medical Imaging, NTUH
2011.07 ~ 2013.06 Master degree, NTU Graduate Institute of Clinical Medicine
2016.09 ~ 2021.09 Doctor of Philosophy, NTU Graduate Institute of Clinical Medicine

Professional Career

2011.01 ~ 2011.12 Attending physician, Department of Medical Imaging, NTUH
2012.01 ~ 2013.12 Vice director, Department of Medical Imaging, NTUH Hsin-Chu Branch
2014.01 ~ Attending physician, Department of Medical Imaging, NTUH
2014.06 ~ 2015.12 Adjunct lecturer, Department of Radiology, NTU
2016.01 ~ 2021.07 Clinical lecturer, Department of Radiology, NTU

Membership

Member, Radiological Society of the Republic of China
Member and Secretary General, Taiwan Academy of Tumor Ablation
Member and Secretary General, Taiwan Society of Interventional Radiology
Member, Taiwan Association of Vascular and Access Health

Skill and Research field

1. Ultrasound: Diagnosis and Elastography
2. Computed tomography: Diagnosis and CT guided radiofrequency ablation
3. Magnetic resonance imaging: Magnetic resonance spectroscopy, Functional imaging
4. Intervention radiology: Oncologic and emergent embolization, Artificial intelligence

Awards

1. 2015 The Radiological Society of the Republic of China (RSROC) annual article award
2. 2016 The Radiological Society of the Republic of China (RSROC) annual journal award
3. 2019 The Asia Pacific Society of Cardiovascular and Interventional Radiology (APSCVIR) young IR award
4. 2022 The Asia Conference on Tumor Ablation: Best Oral Presentation

Lipiodol-tagging RFA/MWA for HCC.

Tumor ablation, including RFA/MWA is often the recommended first-line treatment when treating very early- and early-stage hepatocellular carcinoma (HCC). Thermal ablation is performed percutaneously, with guidance from imaging techniques like ultrasound (US) and computed tomography (CT).

Although US and CT are commonly used by hepatologists, surgeons, and radiologists for tumor ablation guidance, only radiologists have the expertise to combine CT and Fusion US in HCC ablation. This advanced approach involves registering a reference CT/MRI image to the US equipment used during the procedure, selecting anatomic landmarks on both the real-time US and reference CT/MRI, and marking the targeted tumor on the reference image. By doing so, the location of the tumor on the real-time US can then be visualized immediately, improving the visibility of tumors and the operator's confidence in the procedure's feasibility.

Compared to traditional B-mode US guidance, real-time US-CT/MR fusion significantly improves the visibility of HCCs, even those that are not visible on conventional US. At National Taiwan University Hospital, radiologists also use iodized oil (I_o) injection through the hepatic artery to tag the liver tumor before ablation. This enables the guidance of US-invisible or high-risk location lesions under CT.

This presentation aims to demonstrate the experience and benefits of Lipiodol-tagging for HCC ablation in high-risk locations. This advanced technique allows radiologists to visualize tumors better, even those not visible in the conventional US, and provide more precise treatment, ultimately improving patient outcomes.

Curriculum Vitae

蔡若婷 教授

Jo-Ting Tsai

放射腫瘤科主治醫師



主治專長：

腫瘤放射線治療

腫瘤高熱治療

立體定位放射線治療

電腦刀治療

加馬刀放射線治療

螺旋刀放射線治療

安寧緩和治療

學歷：

2009 國立陽明大學醫學工程研究所博士

2004 美國加州洛杉磯大學 Graduate Division 癌症研究員

1985-1992 臺北醫學大學醫學系學士

經歷：

2014.08- 臺北醫學大學醫學系副教授

2011- 衛生福利部雙和醫院放射腫瘤科主任

1998- 臺北醫學大學附設醫院放射腫瘤科兼任主治醫師

2008.08-2014.07 臺北醫學大學醫學系助理教授

2005-2008 臺北市立萬芳醫學中心癌症中心主任

2001.05-2003.06 國家衛生研究院顱內腫瘤研究委員會委員

2001.02-2008.07 臺北醫學大學醫學系放射線學科臨床講師

2000.01-2008.12 萬芳醫學中心癌症品質管理委員會執行長

1998-2011 臺北市立萬芳醫學中心放射腫瘤科主任

1996.08-1998.04 馬偕紀念醫院放射腫瘤科主治醫師

1995.08-1996.07 台北馬偕醫院放射腫瘤科總醫師

1992.02-1995.07 台北馬偕紀念醫院放射腫瘤科住院醫師

獎項：

2015 師鐸獎

研究興趣：

Stereotactic Radiotherapy

Radiation dosimetry

Hospice, cancer terminal care

Curriculum Vitae:

Name:

Hsin-Lun Lee M.D. Ph.D.

Correspondence Address:

Department of Radiation Oncology, Taipei Medical University Hospital

252, Wu Hsing St, Taipei, Taiwan, 110

Tel: +886 2 27372181#2127

Mobile: +886 920335920

Email: b001089024@tmu.edu.tw



Current Position:

- Director and Attending Physician, Department of Radiation Oncology, Taipei Medical University Hospital
- Deputy Director, TMU Proton Center, Taipei Medical University Hospital
- Assistant Professor, Department of Radiology, School of Medicine, College of Medicine, Taipei Medical University
- Assistant Professor, The Ph.D. Program for Translational Medicine, College of Medical Science and Technology, Taipei Medical University and Academia Sinica
- Secretary General, Taiwan Society for Therapeutic Radiology and Oncology

Education:

- M.D., School of Medicine, Taipei Medical University
- Ph.D., The Ph.D. Program for Translational Medicine, College of Medical Science and Technology, Taipei Medical University and Academia Sinica

Professional Experience:

- 2008.09–2012.10 Resident training, Department of Radiation Oncology, Taipei Medical University Hospital and Wan Fang Hospital, Taipei Medical University, Taiwan
- 2012.11–2015.06 Attending Physician, Department of Radiation Oncology, Wan Fang Hospital, Taipei Medical University, Taiwan
- 2013.04–2014.09 Attending Physician, Department of Radiation Oncology, Landseed International Hospital, Taiwan
- 2014.04–present Attending Physician, Taipei Cancer Center, Taipei Medical University Hospital, Taipei Medical University, Taiwan
- 2015.07–present Attending Physician, Department of Radiation Oncology, Taipei Medical University Hospital, Taipei Medical University, Taiwan
- 2019.02–present Consultant Physician, Childhood Cancer Foundation of R.O.C.
- 2019.08–present Director, Department of Radiation Oncology, Taipei Medical University Hospital, Taipei Medical University, Taiwan
- 2020.02–present Postdoctoral Research Fellow, Genomics Research Center, Academia Sinica, Taiwan
- 2022.07–present Deputy Director, TMU Proton Center, Taipei Medical University Hospital
- 2023.05–present Secretary General, Taiwan Society for Therapeutic Radiology and Oncology

Title: The Role of Radiotherapy As Locoablative Therapy for Hepatocellular Carcinoma

Abstract: This speech will explore the pivotal role of radiotherapy as a locoablative therapy in treating hepatocellular carcinoma (HCC). We will introduce into various advanced radiotherapy techniques, including Stereotactic Body Radiotherapy (SBRT), Radiofrequency Ablation (RFA), particle therapy including proton Therapy and Carbon Ion Therapy. These techniques have emerged as promising alternatives for achieving local control of HCC and improving overall survival rates. The discussion will encompass the comparative efficacy of these modalities, their impact on patient outcomes, and their integration into comprehensive treatment plans. By shedding light on the therapeutic potential of these radiotherapy methods, the speech aims to foster a deeper understanding of their significance in the evolving landscape of hepatocellular carcinoma treatment. The insights presented will underscore the importance of personalized, targeted approaches to enhance the therapeutic index and optimize patient care in the management of this prevalent liver malignancy.

江明峯



現職：

羅東博愛醫院胃腸肝膽科主任/肝病中心主任/肝癌多專科
團隊召集人

學歷：

台北醫學大學醫學系學士/宜蘭大學生資院碩士/部定講師

進修：

2014/10 Prof. Olivier Seror, Jean-Verdier Hospital, France

專長：肝癌診斷治療(RFA/MWA)

研究計畫與報告:

*Wu SY, Chen WM, Chiang MF, Lo HC, Wu MS, Lee MC, Soong RS. Protective effects of statins on the incidence of NAFLD-related decompensated cirrhosis in T2DM. Liver Int. 2023 Jun 29. doi: 10.1111/liv.15656. Epub ahead of print. PMID: 37381761.

*Zhang, J.; Chang, S.-C.;Chiang, M.-F.; Chiu, K.-C.;Wu, S.-Y.Survival Impact of Current-Smoking-Related COPD or COPD with Acute Exacerbation on Bladder Preservation through Concurrent Chemoradiotherapy for Muscle-Invasive Bladder Urothelial Carcinoma. J. Pers. Med. 2021, 11, 9582.

*Chiang MF, Tseng TK, Shih CW, Yang TH, Wu SY. Clinical and contrast-enhanced image features in the prediction model for the detection of small hepatocellular carcinomas. J Cancer. 2020 Oct 18;11(24):7166-7175

*Serum Levels of Hepatitis B Surface Antigen at Cessation of Entecavir Treatment Stratify Relapse Risk in End-of-therapy Hepatitis B E Antigen-negative Patients. Clinical Gastroenterology and Hepatology, submitted (2016)

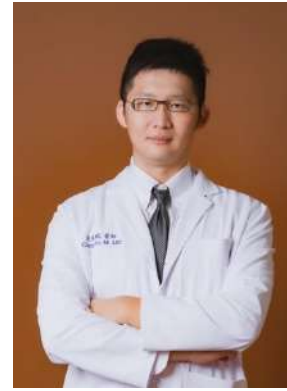
* Chiang MF. Washout appearance could be a more important factor in prediction of small hepatocellular carcinoma with atypical image pattern. APDW 2016

Curriculum Vitae

倪 承賦

Cheng-Fu Ni

主治醫師



主治專長：

一般放射線檢查

影像導引切片術

體部血管攝影及介入性放射學

出血病灶血管栓塞(TAE), 腫瘤血管栓塞與局部化療(TACE)

學歷：

2011 天主教輔仁大學醫學院醫學系

經歷：

2012.09-2015.07 新光吳火獅紀念醫院放射診斷科住院醫師

2015.08-2016.06 新光吳火獅紀念醫院放射診斷科總醫師

2016.07-2019.11 新光吳火獅紀念醫院放射診斷科臨床研究員

研究興趣：

一般放射線檢查


影像導引切片術

體部血管攝影及介入性放射學

出血病灶血管栓塞(TAE), 腫瘤血管栓塞與局部化療(TACE)

Publications (the latest 5 articles) :

1. Cheng-Fu Ni, Liang-Kung Chen. Case Report Nasal-Type Extranodal Natural Killer/T-Cell Lymphoma, Mimicking Recurrent Sinusitis: A Case Report and Review of the Literature. Iran J Radiol. 2017 ;14(2):e33054.
2. Ruei-Je Tsai, Hsin-Yi Lai, Cheng-Fu Ni, Shu-Min Tsao, Gong-Yau Lan, Kevin Li-Chun Hsieh. Young adult cardiovascular diseases: a single center coronary computed tomography angiography study. Clin Imaging. Nov-Dec 2018;52:343-349.
3. Cheng-Fu Ni, Sho-Jen Cheng, Cheng-Yu Chen, Tu-Hsueh Yeh, Kevin Li-Chun Hsieh. Added Value of Rescue Devices in Intra-Arterial Thrombectomy: When Should We Apply Them? Front. Neurol. 12:689606.
4. Cheng-Fu Ni, Yun-Xuan Tang, Yan-Lin Liu. Finite Element Analysis of Breast Deformation using Three-dimensional Imaging. JTMRT.202307_11(1).0004 DOI

Wei-Yu Kao, M.D. & Ph.D.	
Director, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan	
Associate professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan	
Convener, Taipei Cancer Center, Taipei Medical University, Taipei, Taiwan	

Doctor Wei-Yu Kao's research interests are viral hepatitis (particularly HBV and HCV), nonalcoholic fatty liver disease, liver cirrhosis and hepatocellular carcinoma (particularly local ablation for small HCC). He has demonstrated compliance with the Taiwan Academy of Tumor Ablation accreditation criteria for professional operator on liver tumor ablation since 2016. He has completed Samsung Medical Center Image-guided Tumor Ablation Training Course in 2015 and Juntendo University International RFA Training Program in 2016. He is a reviewer of PLOS ONE, BMC Gastroenterology, International Journal of Oncology, Journal of Microbiology, Immunology and Infection, Journal of the Formosan Medical Association, Liver International, Journal of Gastroenterology and Hepatology, Digestive Diseases, Hepatology International, European Radiology, Cancers and Alimentary Pharmacology & Therapeutics. He is an editorial board of BMC Gastroenterology. He has authored and co-authored 66 peer-review articles and presented 54 oral and poster presentations in conferences.

1999/9-2006/6	M.D., Faculty of Medicine, School of Medicine, Taipei Medical University, Taiwan
2006/8/1-2009/7/31	Residency of Internal Medicine, Taipei Veterans General Hospital, Taipei, Taiwan
2009/8/1-2012/6/30	Chief residency and fellowship of Gastroenterology, Taipei Veterans General Hospital, Taipei, Taiwan
2012/7/1-2013/6/30	Attending Physician, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Veterans General Hospital, Taoyuan branch, Taiwan
2012/8/1-present	Instructor, Faculty of Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan
2013/7/1-present	Attending Physician, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan
2015/8/1-2019/7/31	Instructor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
2019/8/1-2022/7/31	Assistant professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
2021/2/1-present	Convener, Taipei Cancer Center, Taipei Medical University, Taipei, Taiwan
2021/8/1-present	Director, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan
2022/8/1-present	Associate professor, Division of Gastroenterology and Hepatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

Awards:

1. Young Investigator Award of the Asia Pacific Association for the Study of the Liver, 2016
2. Research Award of Taiwan Association for the Study of the Liver, 2018
3. The first place Research Award of Advances in Digestive Medicine, 2019
4. Research Award of Liver Disease Prevention & Treatment Research Foundation, 2021

TAE (microsphere)+RFA/MWA for HCC

Wei-Yu Kao

Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei Medical University, Taipei, Taiwan

Radiofrequency ablation (RFA) has been accepted as the most effective local ablation for small hepatocellular carcinoma (HCC ≤ 3.0 cm) by several HCC guidelines because the technique is minimally invasive, fewer sessions and easily repeatable. The complete response rates for HCCs ≤ 3.0 cm in size exceeds 90%. However, in prior studies, the complete response rate was reduced to 45%–70% for medium-sized HCCs (3.1–5.0 cm), and it was only 23%–45% for large HCCs (> 5.0 cm) by single RF electrode. The strategy to maximize outcomes of RFA is to increase ablation size and target tumor precisely (ex., real-time fusion imaging, contrast-enhanced ultrasonography, artificial ascites...). The methods of local ablation to get adequate safety margin for large HCCs (> 5.0 cm) include overlapping method, combined with ethanol, combined with chemoembolization, multiple-electrode mono-polar RF or bipolar RF with switch-controller, RITA RF generator with expandable electrodes and new generation microwave ablation (MWA). An increase in the number of sequential overlapping ablations usually results in an irregular shape of coagulation. Incomplete ablation may occur with irregular ablated zones and it is a common reason for treatment failure. A deployed RF electrode can provide a 5- to 7-cm-diameter ablation zone with a single electrode placement, but the shape of the ablation zone is not circular, and the device's multiple tines have the potential to puncture adjacent vital structures. Recently, MWA is designed to achieve larger areas of necrosis compared to RFA and has a good safety profile among liver cancer treatments. However, conventional MWA systems still have major limitations such as unpredictability of the ablation zone size and the elliptical shape of necrosis. New generation MWA can provide predictable ablation results and outcomes regardless of the target location or tissue type. I will demonstrate one case of ultrasound-guided MWA combined with chemoembolization (Microspheres).