



Interview with Prof. Uei Pua—discussion with an interventional oncologist

Uei Pua¹, Aisling Luo², Lucine M. Gao²

¹Tan Tock Seng Hospital, National University of Singapore, Singapore, Singapore; ²CCO Editorial Office, AME Publishing Company
Correspondence to: Aisling Luo. CCO Editorial Office, AME Publishing Company. Email: editor@thecco.net.

Submitted Jan 03, 2022. Accepted for publication Jan 13, 2023. Published online Jan 31, 2023.

doi: 10.21037/cco-23-1

View this article at: <https://dx.doi.org/10.21037/cco-23-1>

Editor's note

As an emerging journal in the field of clinical oncology, *Chinese Clinical Oncology (CCO)* has published a number of special series in recent years, receiving overwhelming responses from academic readers around the world. Our success cannot be achieved without the contribution of distinguished guest editors. Taking this opportunity, *CCO* launched a new series “Interviews with Outstanding Guest Editors” this year to highlight our active contributors. We hope to express our heartfelt gratitude for their tremendous effort and to further uncover the stories behind the special series.

The special series “Interventional Oncology (IO)” (1) led by Prof. Uei Pua (*Figure 1*) from the National University of Singapore, Prof. Julius Chapiro and Prof. David C. Madoff from Yale School of Medicine has attracted countless readers since its publication. This series highlighted some of the key topics where IO therapies have had major advances and discussed the critical roles of IO in helping to refer physicians with diagnosis, prognosis, and palliation of their patients. Hereby, we are honored to have an interview with Prof. Pua to share his experience in his scientific career and his insights on this special series.

Expert introduction

Dr. Uei Pua is a Senior Consultant in radiology. Dr. Pua read Medicine in the National University of Singapore and completed his specialist training in diagnostic radiology obtaining the Master of Medicine and admission as a fellow in the Royal College of Radiologists (UK) and the Academy of Medicine Singapore. In 2008, he gained specialist board certification and joined the University Health Network and

Mt Sinai Hospital (Toronto, Canada) as a clinical fellow in vascular and interventional radiology and later as a visiting fellow in the Memorial Sloan Kettering Cancer Center (New York, USA). He subsequently returned to Tan Tock Seng Hospital as a diagnostic and interventional radiologist.

Dr. Pua has two main areas of interest within interventional radiology. In endovascular intervention with special interest in complex revascularization techniques in peripheral vascular disease, dialysis access and advanced aortic endografting. In interventional oncology, in areas of advanced tumor ablation, embolotherapy, pain palliation and spine augmentation. He has operated in 9 countries in the capacity as an expert proctor and instructor.

Creating innovative and clinically applicable ideas in both diagnostic imaging and IR, his publications centred on solutions for no-option clinical scenarios and documentation of novel techniques and technologies. He has authored and co-authored >180 original research articles, reviews and book chapters, spoke at more than 180 events as an invited speaker or a visiting professor, in over 20 countries. He is an active research mentor to more than 50 undergraduate, medical and graduate students as well as peers both at Tan Tock Seng Hospital and other national and international institutions, and is an Associate Professor in the National University of Singapore.

Being an active contributor, journal-, abstract- and grant reviewer in several professional societies [Radiological Society of North America (RSNA), Cardiovascular and Interventional Radiological Society of Europe (CIRSE), Society of Interventional Radiology (SIR) and Society of Interventional Oncology (SIO)], he serves on the Editorial board of Cardiovascular and Interventional Radiology (CVIR).

As an active volunteer and advocate in the field for



Figure 1 Prof. Uei Pua.

radiology, he served as the President of the Singapore Radiological Society (2012–2016), founding and Board member of the SIO, International Visiting Professor of the RSNA (2018) and became the inaugural Chair of the Chapter of Interventional Radiology in the Academy of Medicine Singapore (2022). In recognition to his contributions to the field, Dr. Pua was elected as a Fellow in the SIR and the CIRSE.

Interview

CCO: *As a reputable expert in IO, what drove you into this field in the first place?*

Dr. Pua: I was introduced to interventional radiology by the late Professor Lenny Tan who I had the privilege of first being his elective medical student. During the elective attachment, he discovered that I was running off to the computer lab in the hospital to play first-person shooter games. Instead of berating me, he showed me that interventional radiology (unlike surgery) was very similar to gaming, in that we translate movement of our hands to movements of devices and catheters on a screen. I subsequently became his trainee in radiology and realized that IR essentially fulfill a gap, when medical and surgical treatments are no longer options, and are essentially what Professor Tan calls “Doctor of Doctors”.

It is rather fortuitous over the past decade that I have had the opportunity to develop my interest in both endovascular therapies (e.g., complex aortic and peripheral arterial disease) and interventional oncology. While both areas

at first glance appear diverse in nature, being conversant in both allowed me to cross-pollinate techniques and innovative ideas between the two areas.

CCO: *What are the latest advances in interventional oncology imaging and tools? What are the implications for the interventional treatment of liver tumors?*

Dr. Pua: I had the opportunity to witness the explosion of imaging tools in IR over the past decades. Our unit was the first in the region to adopt cone beam computed tomography (CBCT) for embolization and needle guidance, as well as fusion technology more than 10 years ago. With much refinement, it has become standard place in today’s practice. There is currently more and more interest in utilizing cross-sectional imaging systems beyond computed tomography (CT), such as positron emission tomography (PET)-CT and magnetic resonance (MR) guidance in IO.

In terms of therapy, ablation also saw the emergence of a myriad of ablation devices based on different technologies such as microwave, cryoablation and irreversible electroporation. These allowed for a tailored approach in treatment where previously was a one-size fits all radiofrequency probes.

Additionally, for larger liver tumors, deeper understanding in dosimetry has pushed the radioembolization to be a more effective tool than it has ever been. Furthermore, new radioembolics (e.g., Holmium-166) are now being used in clinical practice.

Robotics and artificial intelligence (AI) has made a big appearance in recent years. It will be interesting to see how they evolve into daily clinical use.

CCO: *Recommended treatments for patients with small liver cancer include surgical resection and percutaneous ablation. What are the advantages of the latter over the former?*

Dr. Pua: Percutaneous ablation bears the main advantage of being minimally invasive with a shorter down time and is more repeatable than surgical resection. The main bugbear, however, remains the relatively non-standardized way of achieving ablative margins as seen with the wide range of local recurrence rates between institutions. To this end, several proprietary software designed to better define and delineate ablative margins during and after ablation could cover this shortfall and improve our results. Of note, with the most updated Barcelona Clinic Liver Cancer (BCLC)

and adoption of the concept treatment stage migration where traditional BCLC treatment lines can be crossed based on available local expertise, we will possibly see the change in the treatment patterns especially in early BCLC stages. Radiation segmentectomy where high dose y90 is infused in a superselective way is well-positioned to replace ablation in difficult locations.

CCO: You mentioned that in the context of the global epidemic, “the challenge for interventional radiology is the community spread of the virus”, how is it being addressed?

Dr. Pua: With the pandemic on the downward trend and lifting of restrictions in most countries, the key for most institutions is to examine and learn from the measures (right and wrong) we took over the past two years, such that we do not lose this institutional knowledge and keep it in our playbook. It is foreseeable that with resumption of global travel, subsequent waves of infection or outbreaks from other infectious diseases can occur from time to time, it is therefore pertinent that the lessons we learned do not go to waste.

CCO: You have been actively involved in IO research. How have you dealt with the challenges and setbacks you encountered in your research?

Dr. Pua: We have successfully completed an extensive *ex-vivo* study of current generation of ablation devices that allowed us to better understand the ablation shape and size across different devices, as such head-to-head comparative data which can serve as reference guides are surprisingly hard to come-by. As we were investigating a novel ablation device which over the span of the pandemic, it was repeatedly postponed due to the cessation of air travel which precluded part of the study team (engineers) to fly to Singapore. The most challenging part was the unknown timeline for resumption of air travel which precluded any form of logistics planning. Nevertheless, with much patience and resolution the study was successfully concluded.

CCO: If there is a chance to update this special series, what would you like to moderate, add or emphasize more?

Dr. Pua: A special series on interventional oncology in palliative medicine using ablation for non-curative scenario,

such as in pain palliative and local tumor control which are relatively green fields would be very useful.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Chinese Clinical Oncology* for the series “Interviews with Outstanding Guest Editors”. The article did not undergo external peer review.

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://cco.amegroups.com/article/view/10.21037/cco-23-1/coif>). The series “Interviews with Outstanding Guest Editors” was commissioned by the editorial office without any funding or sponsorship. LMG and AL report that they are full-time employees of AME Publishing Company. The authors have no other conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Interventional Oncology. Available online: <https://cco.amegroups.com/issue/view/910>

Cite this article as: Pua U, Luo A, Gao LM. Interview with Prof. Uei Pua—discussion with an interventional oncologist. *Chin Clin Oncol* 2023;12(1):9. doi: 10.21037/cco-23-1