

ESTRO MOBILITY GRANT (TTG) REPORT

Title of the report: Hybrid Image Guided Brachytherapy Training for Gynecologic Malignancies

HOST INSTITUTE: Chulalongkorn University Hospital, Bangkok, Thailand

DATE OF VISIT:
6-26 August 2018

Candice Chin-Chin C. Yu, MD – Resident Physician
Margareth A. Tavas, MSc – Medical Physicist
Ruben A. Marques, RRT – Radiologic Technologist
Department of Radiation Oncology
Jose R. Reyes Memorial Medical Center
Manila, Philippines

Email: i_m_candice@yahoo.com

Aim: The aim of our visit is to have a clinical training on the usage of Hybrid Image Guided Brachytherapy in the treatment of locally advanced cervical malignancies.

As the current practice in gynaecologic brachytherapy is transitioning into 3D image guided brachytherapy or Hybrid IGBT due to its benefits as explained by multiple published studies, there is a need for our brachytherapy team to undergo further training in IGBT/Hybrid Brachytherapy to learn from the expertise of other institutions.

Furthermore, our institution was recently awarded an Utrecht Interstitial Brachytherapy Applicator through the International Atomic Energy Agency (IAEA) National Project for the Philippines PHI6025 and since the applicator is the first of its kind that is available in our country (Philippines), proper training on its usage would be valuable for the optimal utilization of its benefits in treating our patients.

Scientific details of the visit: An introductory briefing was first presented which included cancer epidemiology in Thailand, radiotherapy patient census, equipment availability in the RT unit, RT staff composition and future projects of the hospital. We were then oriented on the hospital's brachytherapy workflow followed by a brief tour of the brachytherapy suite, planning, imaging and treatment areas. Ongoing brachytherapy cases for the day were then presented with the corresponding MRI images for discussion of treatment plan. We then observed how the Utrecht applicator is being inserted with proper utilization of interstitial needles on its template to target residual tumor areas. For very extensive residual tumors, we were able to observe a case of combined hybrid IGBT with free hand interstitial needles. Ultrasound verification was utilized to confirm placement of the tandem. As we proceeded to MRI imaging, we were taught on the principles of MRI imaging with the use of a CT/MRI compatible applicator, optimal image reconstruction to be used, and also patient bladder filling during scan. We then followed through with the contouring and treatment planning while our physicist was involved with the applicator reconstruction with needles. Final plan evaluation was then reviewed by the team prior to treatment delivery. We were then briefed with the institution's protocol for dose prescription and dose constraints in accordance with the Embrace II protocol. Quality assurance and applicator commissioning were also discussed with our physicist. Our team had lengthy question and answer sessions on practical and problematic issues with hybrid IGBT, specifically concerning on its applicability in our setting.



At Chulalongkorn University Hospital



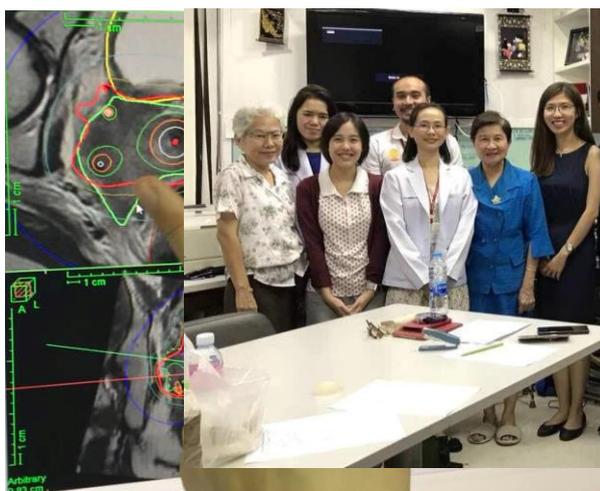
With the newly acquired Flexitron



Utrecht Applicator Insertion



MRI Simulation



Plan Evaluation



QA Session

MRI Simulation



With Physics Team

Results:

Our team will be doing an echo lecture of our experience in Chulalongkorn University Hospital with the entire staff of our home institution to facilitate adaptation of the techniques and updated protocols we have learned during our stay. As our institution is also a high volume center for brachytherapy of gynaecologic malignancies, we will adapt the workflow of our host institute as they have a continuous and simultaneous flow of the entire treatment process with multiple patients occupying each step of the process, making the system more efficient. Also, as we have observed the importance of good imaging for treatment planning especially for interstitial needle insertions, we will be requesting for at least 1 MRI image pre-brachytherapy for proper target delineation. With the aid of MRI imaging, our team will also start utilizing free hand interstitial techniques as needed for very extensive disease.

Our team would like to convey our sincere appreciations to the entire radiotherapy team at Chulalongkorn University Hospital especially Professor Suriyapee, Dr. Petch, Dr. Napapat, Mr. and Mrs. Oonsiri for their generosity in sharing their expertise in brachytherapy.

Finally, our team would like to extend our gratitude to the ESTRO team for giving us the opportunity to learn from a reputable institute to enhance our knowledge and skills in brachytherapy.