

The Royal College of Radiologists
Kay Durrant Visiting Fellowships 2023/24

POST-VISIT REPORT

1. Name of Visiting Fellow	Mohammed Abdul-Latif	
2. Name of joint Visiting Fellow (if applicable)		
3. Institution(s) of Visiting Fellow(s)	Mount Vernon Cancer Centre – London, UK	
4. Name of Host(s)	1. Prof. Jean-Michel Hannoun-Levi 2. Prof. Luca Tagliaferri	
5. Institution(s) of host(s)	1. Antoine Lacassagne Cancer Centre – Nice, France 2. Gemelli Polyclinic Interventional Oncology Centre – Rome, Italy	
6. Expenses claimed	£2000.00	
7. Visit Dates (ACTUAL)	1. Start Date 04/09/23	1. End Date 15/09/23
	2. Start Date 18/09/23	2. End Date 29/09/23

9. Aims of the visit

- Prof. Jean-Michel Hannoun-Levi, Professor of Radiation Oncology in Antoine Lacassagne Cancer Centre in Nice, France
 - o Prof. Hannoun-Levi and his team at Nice perform gynaecology and urology (prostate, penile) brachytherapy, and also brachytherapy for breast (e.g. accelerated partial breast HDR) and rectal (intracavitary HDR or contact x-ray (Papillon)) cancer. I was particularly interested in their breast interstitial HDR technique, and their use of Papillon for rectal and skin cancer. Both these brachytherapy techniques are in limited use in the UK, so this was an opportunity to gain experience in these techniques.
- Prof. Luca Tagliaferri, Head of Interventional Radiotherapy unit at Fondazione Policlinico Universitario Agostino Gemelli in Rome, Italy
 - o Prof. Tagliaferri and his team at Rome have a special interest in skin and head and neck brachytherapy, alongside a urology and gynaecology brachytherapy practice. No centres now undertake head and neck brachytherapy in the UK. This will provide a unique experience for me to observe how these tumour types are treated with brachytherapy and consider its role for our patients in the UK.

For both sites, I aimed to improve my understanding of all aspects of the treatments delivered including:

- Brachytherapy workflow and department/team setup
- Brachytherapy planning and dose optimisation for breast, skin and head and neck cancer treatments
- Comparing approaches to urology and gynaecology cancers between my centre and both European centres
- Methods and considerations in brachytherapy applicator implantation for different tumour sites
- The pros/cons of contact radiotherapy (Papillon technique) for rectal cancer and organ preservation approach.

10. Activities undertaken

Nice, France

- Shadowing Prof. Hannoun-Levi, Prof. John Pierre Gerrard and their colleagues:
 - o Assessing new patients for brachytherapy of breast and prostate in clinic, in addition to follow-up clinic
 - o Observing HDR brachytherapy applicator insertion in theatre for cervix and breast (primary adjuvant and salvage), as well as contact therapy application for rectal (organ preservation) and skin cancers.
 - o Participating in brachytherapy planning (including pre-treatment VSIM for breast brachytherapy) and plan evaluation, along with plan dose optimisation.
- Tour of Proton and Cyberknife unit
 - o Low dose proton set-up for ocular tumours including melanoma
 - o High dose proton set-up (including cyclotron and collimation)
 - o Shadowing physics to see how they plan
 - o Shadowing radiographers to see delivery of low dose and high dose proton treatments
- Analysing data for salvage breast brachytherapy cohort with aim to:
 - o Submit abstract to ESTRO 2024
 - o Write-up paper for publication on return to UK
 - Focussing on introduction of constraints/thresholds for salvage brachytherapy in the context of previously irradiated breast

Rome, Italy

- Shadowing Prof. Tagliaferri, Prof. Kovacs, Dr Bruno Fionda and their colleagues:
 - o Interventional Radiotherapy Active Teaching School (INTERACTS)
 - Daily interactive tutorial sessions with Prof. Kovacs covering brachytherapy related topics including indications, techniques, planning, artificial intelligence in different tumour sites.
 - Observing implantations in the Interventional Oncology suite including:
 - Cervix Cancer
 - Head and neck cancer (nasal vestibule, lips)
 - Anal cancer
 - Skin cancer (contact brachytherapy)
 - Uveal melanoma (Ru-106 or I-125 plaques)
 - Dedicated sessions with Medical Physics to cover challenges in brachytherapy planning.
 - Observing both HDR and PDR brachytherapy systems
 - o Tour and observation of MRLinac workflow– including treatments/planning
 - o Tour of the Gemelli “Art 4 ART” philosophy (the use of art and immersion to improve quality of patients experience and resilience during advanced radiotherapy treatments)

11. Benefits of the visit (short term)

Nice, France

- Gaining new perspective and appreciation of different approaches to interstitial applicator insertion for cervix cancer (transperineal approach vs. transvaginal for parametrial extension)
- Gaining exposure to different approaches to patient selection for breast and prostate brachytherapy – including the salvage setting
- Understanding the benefits of adjuvant brachytherapy for breast, in addition to salvage brachytherapy
- Exposure and appreciation of contact radiotherapy technique to treat skin and rectal cancer, with indications for organ preservation approach
- Appreciation of proton therapy (Low and high dose) and benefits/practicalities/indications for its delivery
- Collaboration
 - o Submission of abstract for ESTRO 2024 detailing introduction of new dose constraints/thresholds for breast brachytherapy in the salvage/reirradiation setting derived from CRAB study at Nice, France
 - o Write-up of data from CRAB study for publication

Rome, Italy

- Gaining new perspective and appreciation of different approaches to interstitial applicator insertion for cervix cancer (different imaging/implantation schedule, but also use of bladder filling and flatus tubes to reduce OAR interference)
- Gaining new appreciation of breadth of brachytherapy techniques available, and a clear difference between the UK and Europe in terms of brachytherapy provision
- Learning about service development and set-up for the interventional oncology unit at Gemelli Hospital
- Appreciating the ability to perform complex brachytherapy implants (e.g. Head and neck) with surgical colleagues present in theatre to assist
- Improved understanding and application of brachytherapy dosimetry and planning with interstitial implants.

12a. Envisaged benefits of the visit longer term (your own practice)

Nice, France

- I aim to work as a brachytherapy consultant. The impact of this visit on this include:
 - o An appreciation of different applicator approaches to maximise and improve parametrial dose coverage whilst minimising OAR toxicity. I aim to use this knowledge to diversify/tailor approaches to different patients, including the use of both transperineal/transvaginal approached to interstitial insertions and the use of transabdominal and/or transrectal US.
 - o Indications for primary and salvage breast brachytherapy and the set-up/workflow required to perform it
 - A niche yet growing indication of breast brachytherapy would offer women who want breast preservation as opposed to mastectomy in the salvage setting, or who prefer an accelerated, single day approach to primary adjuvant therapy.
 - Interstitial technique is one practiced in my department already. Introduction of a breast brachytherapy service would require expert input to set-up, but the expertise and technical ability of brachytherapists, physicists and radiographers is already available.
 - o Research – new collaboration with a brachytherapy centre to work together in advancing HDR brachytherapy research. I am already writing up their data for salvage breast brachytherapy for presentation/publication

Rome, Italy

- To discuss with my department the value of migrating from a single implant approach, to a double implant approach in cervical cancer (This was already a point of discussion in Rome).
- The effectiveness of using flatus tubes and bladder filling to reduce OAR encroachment into brachytherapy volumes
- The use of flexible plastic tubes to improve different interstitial approaches as opposed to reliance on rigid plastic needles alone
- The introduction of skin brachytherapy (contact) is feasible and justifiable, but requires education of the department
- I aim to foster relationships with my local breast and head and neck surgeons to try and see if joint sessions are possible, with the aim to start performing implants.

12b. Envisaged benefits to the wider group (dissemination to others in your centre/clinical oncology community/multiprofessional team)

- I will present a summary of my trip and what I learned to my brachytherapy department, and will also aim to present in clinical governance to the whole oncology department
 - o The ultimate goal is to expand the brachytherapy provision within our department and hospital, with an aim to offer brachytherapy for different tumour sites including breast, skin, head and neck and GI.
 - o Patients (particularly those requiring salvage) would benefit from the introduction of brachytherapy for their cancers as a potential radical (or palliative) treatment.
- Brachytherapy department :
 - o Discuss different approaches to analgesia (e.g. PCA) for gynae brachytherapy, but also the use of novel devices such as HyponVR (an immersive sound/video headset which distracts patients and reduces pain during procedures such as implant insertion/removal)
 - o Discussion of different applicators to use in brachytherapy and expanding our repertoire – especially to include flexible plastic tubes
 - o Discussion regarding different approaches to cervix brachytherapy dosimetry and number of implantations.

13. Please outline any problems you encountered before, during or after your visit


None whatsoever.

14. Any additional comments

Many thanks for the opportunity – this has really given me the context and understanding needed to improve brachytherapy provision in my centre, with an aim to push the boundaries of brachytherapy practice in the UK.

15. Do you have any ‘top tips’ that you would like to share with prospective visiting fellows?

When you're on your visit, the more you engage the more you get out of it. Use it as an opportunity to create new friendships/relationships which you can take back with you for future collaborations and opportunities. I am submitting abstracts for ESTRO with the people I met during my visits.

	
Signed:	Date: 28/09/23
Report approved by:	Clinical Oncology Professional Support and Standards Board
Date	9/11/23