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The British Institute of Radiology

18 SEPT 2020

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BRACHYTHERAPY – AN UPDATE ON CURRENT UK PRACTICE

Virtual event

CPD: 3 CREDITS

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BRACHYTHERAPY – AN UPDATE ON CURRENT UK PRACTICE

Virtual event

CPD: 3 CREDITS

This exciting half-day virtual event will provide updates for best practice for gynaecological and prostate brachytherapy from leading clinicians in the field. Radiotherapy experts will explain the best way to plan these treatments. Furthermore, an overview of emerging techniques / treatment accuracy / safety will be presented.

Who should attend: Oncologists / therapy radiographers / radiotherapy physicist of all grades from trainees to consultants.

Educational aims:

- To be aware of current best practice for gynaecological brachytherapy
- To be aware of the current most likely causes of errors and incidents in brachytherapy in the UK

13:30	**Welcome and introduction** Dr Keith Langmack, Head of Radiotherapy Physics, Nottingham University Hospitals NHS Trust
13:35	**Current best practice in prostate brachytherapy** Professor Peter Hoskin, Consultant Oncologist, Mount Vernon Cancer Centre, University of Manchester
14:00	**Q&A**
14:05	**Survey of UK practice of HDR prostate brachytherapy planning** Dr Lucy Partridge, Senior Clinical Scientist – Radiotherapy Physics, The Clatterbridge Cancer Centre NHS Foundation Trust
14:25	**Q&A**
14:30	**Current best practice in gynaecological brachytherapy** Dr Li Tee Tan, Consultant Oncologist, Addenbrookes Hospital
14:50	**Q&A**
14:55	**Modern treatment planning for gynaecological brachytherapy** Ms Diane Whitney, Principal Physicist, Addenbrookes Hospital
15:15	**Q&A**
15:20	**Break**
15:30	**Auditing the accuracy of brachytherapy dosimetry** Ms Sarah Wilby, Principal Clinical Scientist, Deputy Head Brachytherapy Physics, Portsmouth Hospitals University NHS Trust on behalf of Dr Tony Palmer, Head of Medical Physics, Portsmouth Hospitals NHS Trust

This course provides 3 CPD credits in accordance with the CPD Scheme of the Royal College of Radiologists

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15:50	**Q&A**
15:55	**Electronic brachytherapy – an overview** Dr David Eaton, Principal Physicist, Guy's and St. Thomas' Hospital NHS Foundation Trust
16:15	**Q&A**
16:20	**An analysis of brachytherapy related errors and near misses in the UK** Ms Helen Best, Senior Clinical Radiotherapy Officer, Medical Exposures Group Public Health England
16:40	**Q&A**
16:45	**Close of event**

Sponsors

We would like to thank our sponsors for this event. Our Silver sponsors, OSL and Varian, will be available during the event in sponsor breakout rooms. Please be sure to stop by and say 'hello'! Representatives will be on hand to answer any questions and provide demos of the latest products.

Programme Organiser

Dr Keith Langmack, Head of Radiotherapy Physics, Nottingham University Hospitals NHS Trust

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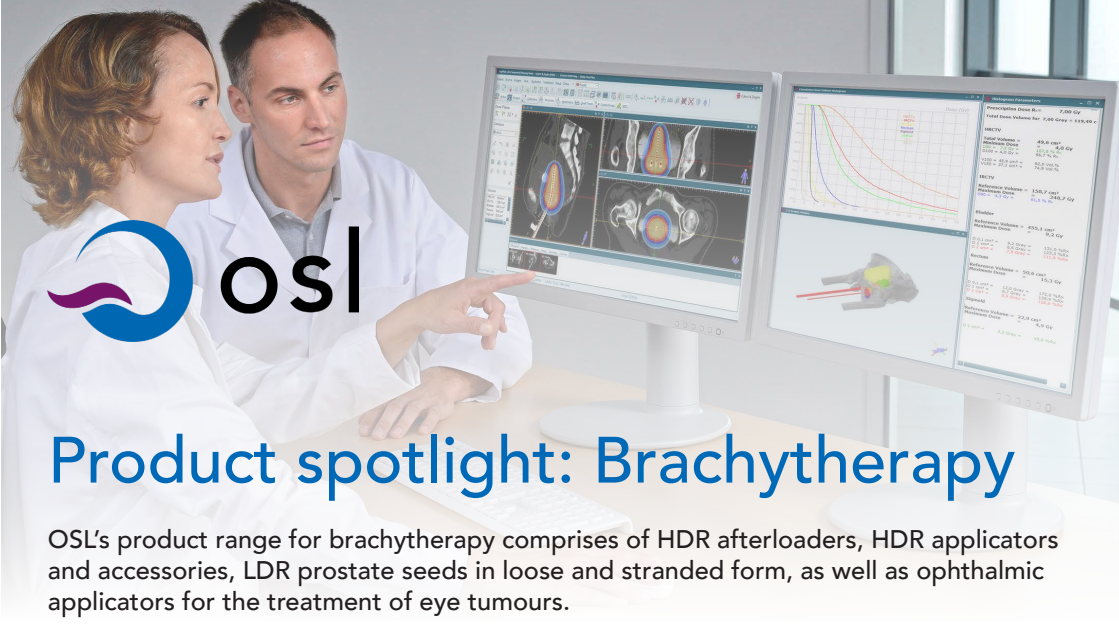

Product spotlight: Brachytherapy

OSL's product range for brachytherapy comprises of HDR afterloaders, HDR applicators and accessories, LDR prostate seeds in loose and stranded form, as well as ophthalmic applicators for the treatment of eye tumours.

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Radiation may cause side effects and may not be appropriate for all cancers. See www.varian.com/use-and-safety for more information.

Biographies and abstracts

Ms Helen Best, Senior Clinical Radiotherapy Officer, Public Health England

Helen is an experienced therapy radiographer who has been part of the radiotherapy team at Public Health England (PHE) since 2012. Helen is the editor of the radiotherapy publications "Safer Radiotherapy", which disseminates learning from the analysis of radiotherapy error and near miss events (RTE).

An analysis if brachytherapy related errors and near misses in the UK

The radiotherapy team at PHE are an independent resource for the radiotherapy community with the goal of improving patient safety and efficiency in radiotherapy within the context of legislation. This involves the analysis of radiotherapy error and near miss events (RTE) and promulgation of learning across the community. Brachytherapy is a radiotherapy sub speciality RTE associated with brachytherapy are analysed and included in the national triannual analysis. Trends and learning outcomes will be shared

Dr David Eaton, Head of Radiotherapy Dosimetry, Guy's and St Thomas' NHS Foundation Trust

David Eaton is a clinical physicist at Guy's and St Thomas's Hospital in London. He studied initially at the University of Cambridge, where he later received his PhD for work in intraoperative radiotherapy (IORT). He has worked in a number of clinical radiotherapy departments around the UK, and was also the lead physicist for the national radiotherapy trials quality assurance group (RTTQA). Research interests have included IORT, practical radiation dosimetry, radiation protection, and clinical trials QA, leading to about 50 publications and 10 book chapters. He is a fellow of the Institute of Physics and Engineering in Medicine (IPEM), and member of the BIR leadership SIG.

Electronic brachytherapy – an overview

Electronic brachytherapy is an emerging technology, which uses compact mobile low energy x-ray sources to deliver radiotherapy in close proximity to treatment sites such as breast, skin and rectal cancers. Advantages include steep dose fall-off around the source, straight-forward shielding requirements, inherent portability, and no contamination or exposure risk when the source is switched off. However, different equipment uses various geometries and delivery techniques, clinical outcome data is limited, and accurate dose measurement is challenging. In order to fully embrace the potential of this technology, a multi-disciplinary approach is essential.imaging with high field MRI. He is a member of the Royal College of Radiologists (RCR) professional learning committee, and leads the annual London temporal bone radiology course.

Professor Peter Hoskin, Consultant in Clinical Oncology, Professor in Clinical Oncology, Mount Vernon Cancer Centre, University of Manchester

Professor Peter Hoskin trained in clinical oncology at the Royal Marsden Hospital London and has been consultant in clinical oncology at Mount Vernon Cancer Centre, Northwood UK since 1992. He is also Professor in Clinical Oncology in the University of Manchester and honorary consultant in clinical oncology at the Christie Hospital, Manchester and University College Hospital, London. Research interests focus on radiosensitisation, biomarkers, radiotherapy quality assurance, palliative radiotherapy, and brachytherapy. He is a member of the GEC ESTRO committee and chairs the ESTRO UroGEC group. In the UK chairs the Fellowship Examination Board and the Academic Committee for the Royal College of Radiologists. He has published extensively and was Editor of Clinical Oncology for 15 years. He is now Clinical Editor for Radiotherapy and Oncology and sits on several journal editorial boards including Brachytherapy and the Journal of Contemporary Brachytherapy.

Biographies and abstracts

Current best practice in prostate brachytherapy

Prostate brachytherapy, both LDR and HDR remain important treatment options for men with prostate cancer across all risk groups. The transrectal ultrasound guided transperineal approach is established as a standard. LDR brachytherapy is now best undertaken as a single step procedure with iterative planning; for HDR both single step and two step procedures are undertaken with different imaging and quality assurance requirements. Boost brachytherapy for dose escalation with either LDR or single dose HDR is now well established. Single dose HDR monotherapy remains investigational. Rigorous quality assurance is essential for safe and effective prostate brachytherapy.

Dr Lucy Partridge, Senior Clinical Scientist – Radiotherapy Physics, The Clatterbridge Cancer Centre NHS Foundation Trust

Dr Lucy Partridge is a senior clinical scientist in radiotherapy physics with a particular interest in brachytherapy. She has made significant contributions to prostate, gynaecological and rectal brachytherapy at different centres in the U.K. She is a RTTQA physicist for the PIVOTAL Boost trial. She is also responsible for reviewing benchmarking and clinical HDR prostate brachytherapy plans to assess suitability for inclusion in the trial.

Survey of UK practice of HDR prostate brachytherapy planning

The talk aims to provide an overview of the different imaging and planning techniques in the U.K. for HDR prostate brachytherapy using data from the PIVOTAL Boost trial. Examples of each technique are demonstrated. Advantages and disadvantages of each technique are discussed.

Dr Li Tee Tan, Consultant Oncologist, Addenbrooke's Hospital, Cambridge University Hospitals NHS Trust

Dr Li Tee Tan has a special interest in image-guided brachytherapy for cervix cancer having implemented the technique at Addenbrooke's in 2005. She is a core member of the EMBRACE international cervix cancer research group.

Current best practice in gynaecological brachytherapy

Image-guided brachytherapy is the new gold standard for cervix cancer brachytherapy. Mature data from the EMBRACE-I study have shown high local control across all stages with limited late toxicity. This talk describes the strategies that are needed to reproduce the same results in UK centres. By the end of this talk, participants will be able to describe and implement strategies to improve the outcome for their cervix cancer patients.

Ms Sarah Wilby, Principal Clinical Scientist, Deputy Head Brachytherapy Physics, Portsmouth Hospitals University NHS Trust on behalf of Dr Tony Palmer, Head of Medical Physics, Portsmouth Hospitals NHS Trust

Auditing the accuracy of brachytherapy dosimetry

Commencing with a review of the assessment of accuracy in brachytherapy physics dosimetry via quality control and audit, and the challenges this brings, the presentation will then focus on a review of the first UK end-to-end audit of HDR brachytherapy dosimetry. This was conducted via an IPEM working party, and visited 46 centres in the UK. A purpose designed phantom was used, which was CT scanned, planned and treated at each centre. A dosimetric comparison of intended and delivered dose distributions was undertaken using film dosimetry. A high level of accuracy was demonstrated although two errors were found. Results of an associated absolute dosimetry audit via the Interlace trial using alanine and ion chambers will also be discussed. The presentation will then consider current developments in brachytherapy dosimetry verification including work to validate a robotic prostate brachytherapy device,

Biographies and abstracts

Ms Diane Whitney, Head of Brachytherapy Physics, Cambridge University Hospitals NHS Foundation Trust

Ms Diane Whitney is currently Head of Brachytherapy Physics in Addenbrookes hospital, where she has worked for 24 years. Her role is to provide Physics support to both Gynae HDR brachytherapy and Prostate LDR brachytherapy. In gynae, she has seen and supported the transition from simple LDR Intracavitary brachy to IGBT Venezia IC with oblique needle interstitial brachy.

Modern treatment planning for gynaecological brachytherapy

A brief history of the evolution of brachytherapy treatment planning, from the basic Manchester system, through Vienna and onto Venezia and how this has influenced how we plan and the decisions we make today. And how evolution in EBRT should also influence decisions in Brachytherapy.

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