

# Intra Operative Radiotherapy News *In Tayside*

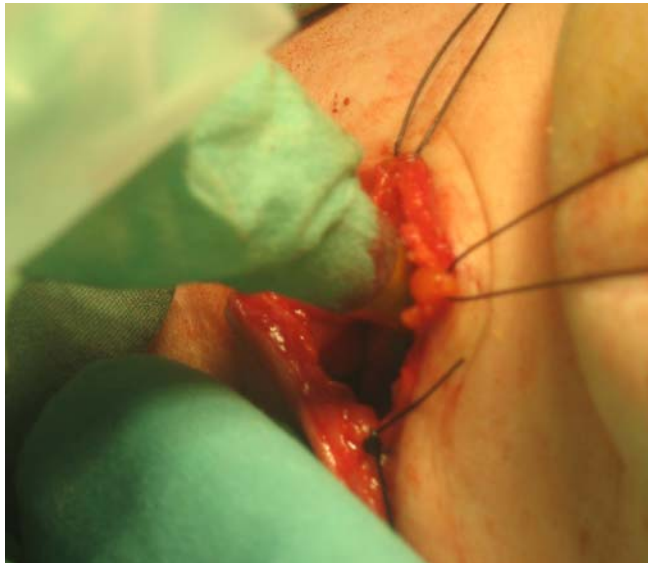


May 2006

Intraoperative Radiotherapy News

Issue 2

## Editorial



The Scottish Executive have recently published their long awaited report "*Cancer in Scotland – Radiotherapy Activity Planning for Scotland 2011-2015*" where increasing clinical demand for both equipment and staff are discussed. One key prediction is that by 2015, between 242,384 and 318,422 fractions of treatment (clinical demand) is expected, a 38% - 81% increase on the number of fractions delivered in 2003. This implies a significant increase in both the number of clinical accelerators as well as staff numbers. They estimate that an additional 13 accelerators would be required to meet demand. It has been proposed that a service redesign in conjunction with a smaller service expansion (3 or 4 additional accelerators) may provide a more feasible option for increasing service capacity.

### **Targeted Intraoperative Radiotherapy (Targit) being delivered to tissues around breast cancer**

The report states that "*in breast cancer, intra-operative radiotherapy (IORT), which is at the early stages of clinical evaluation, may potentially replace external beam radiotherapy in the treatment of stage I patients undergoing wide local excision (WLE). These patients represent about 33% of the projected 2011-2015 XRT breast cancer workload and therefore, if IORT is proven to be clinically effective and adopted as treatment of choice, a considerable workload would be directed away from external beam services*". It further surmises that "*if IORT replaces external beam radiotherapy for early breast cancer this would have a profound effect on the requirement for machine capacity*".

We were pleased to note that the Executive recognise the potential of IORT and that this innovative technique may influence their forward planning. The IORT group are quietly optimistic of its future success in the treatment of various types of cancer. We believe it to be safe, cost-effective and of significant benefit to patients. If in the near future, IORT proves to be a viable clinical alternative to external beam radiotherapy, NHS Tayside will be ideally placed to offer it as a routine service.

Kris Armoogum DipIPEM(S)

We would welcome any comments, enquiries or questions.

The persons to contact are:

[Kris Armoogum](#) or [Caroline Ackland](#)

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## New Team Member

Welcome to June Gardner who has recently joined our team. Her role is IORT Research Nurse/Tissue Bank Liaison. She brings a wealth of experience with her and plays a key role in a new project investigating the radiation effects on normal tissue during IORT.

## What is IORT?

In general terms, intraoperative radiotherapy is a method by which radiotherapy treatment is delivered as a single, high dose in the operating theatre immediately after surgical resection of a tumour. The radiobiological effectiveness (RBE) of the PRS (Photon Radio Surgery) system is between 1.2 and 2.5- so the single dose could replace the usual 6-weeks' course. That is, the approximate physical IORT dose can be multiplied by a factor of 2.5 to determine the biologic effects. Funded by the Ninewells Hospital Cancer Campaign, Ninewells Hospital recently acquired four Zeiss Intrabeam™ Intraoperative Radiotherapy (IORT) treatment systems.

## The IORT Team

The key members of an effective IORT team include the surgeon, radiation oncologist, medical physicist, anaesthetist, nursing staff and pathologist. Although the basic concept of IORT is simple, the complexity arises where professionals from many different disciplines are involved in collaborative working. IORT requires a high level of coordination and an IORT nurse coordinator is invaluable.

**IORT Research Nurse/Coordinator:** Caroline Y Ackland

**IORT Tissue Bank Liaison Nurse:** June Gardner

**Medical Physicists:** John M Parry, Kris S Armoogum, Colin Mackay, David Sutton, Salam Souliman

**Pathologists:** Colin Purdie, James Ironside, Lee Jordan

**Radiation Oncologists:** Alastair J Munro, John A Dewar, Douglas J Adamson

**Surgeons:** Neuro: Sam Eljamel, Breast: Jayant S Vaidya, Alastair M Thompson, Douglas Brown

**Radiologists:** Denis McLean

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## IORT for Breast Cancer

NHS Tayside is participating in an international clinical trial (Targeted Intraoperative radiotherapy TARGIT-A) investigating the suitability of IORT to treat stage I breast cancer. To date we have 55 patients have been recruited in this trial are one of the top recruiting centres.

## IORT for Invasive Intracranial Malignancies

Intracerebral metastases are common and occur in up to 15% of cancer patients. The survival rates for malignant intracranial tumours are only about 7.5% at 2 years. We have treated 14 patients with the Intrabeam™ system using highly focused x-ray beams centred onto a small volume of tumour typically up to 3.5 cm diameter. Patients diagnosed with intracranial primary or single secondary malignant tumours are considered for IORT.

## Conference Reports

### 10th Annual Meeting of the Scientific Association of Swiss Radiation Oncology



rocky outcrops, visible for miles around, each crested by medieval castles (Valère and Tourbillon).

The conference ran over 3 days and was attended by delegates mainly from Switzerland but also from the US, Luxembourg, Spain, Canada, the Netherlands and Germany. We were the only group from the UK. KA gave a talk on “Performance Reproducibility of Intra Operative Radiotherapy Equipment – Photon Radiosurgery System” to an audience of approximately 150 delegates. It was well received and several questions were fielded at the end. The conference was well organised and also well represented by manufacturers. True to form, the conference always finished almost exactly on time. It is also true that you set your watch by the train departure times – KA.

This scientific meeting was attended by Kris Armoogum on the invitation of Jean-Yves Ray, chairman of the local organising committee. It was held in the picturesque town of Sion (from Latin *Sedunum*, meaning Place of Castles), the capital of the canton Valais. It is a small town of just 27,000 but with an exceptionally long history. Archaeological evidence points to the site having been inhabited during Neolithic times. The town lies in a mostly flat valley between two mountain ranges and an interesting geographical feature is the presence of two



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## **The RCN International Research Nursing Conference 2006**

The RCN International Research Nursing Conference 2006 was held in York this year and June and I had the opportunity to attend as stewards.

The conference was very well attended from all over the world. and it was extremely interesting to see the volume and variety of nursing research that is being undertaken nationally and internationally.



Attending the conference as a steward gave insight to amount of work stewarding requires. We were given the option to chose any sessions that we were particularly interested in attending, however, we chose not to express a preference. Covering sessions that we would not have chosen ourselves proved to be very beneficial and enlightening.

Next year's conference is to be held in the Caird Hall in Dundee. Anyone wishing to steward at this conference, please do not hesitate to contact either June or myself – CA, JG.

## **13<sup>th</sup> European Cancer Conference**

Jayant S Vaidya was an invited speaker at the largest cancer conference in Europe held in Paris in November 2005. Dr Vaidya defended the option of partial breast irradiation and the consensus was that it is time we tested this new approach in randomised trials such as Targit - JSV.

## **List of conference and meeting presentations**

[8th Biennial ESTRO Meeting on Physics and Radiation Technology for Clinical Radiotherapy \(Sept 2005, Lisbon\)](#) Kris Armoogum et al

[IPEM Annual Scientific Meeting \(Sept 2005, Glasgow\)](#) Kris Armoogum

RCN Cancer Care 2006: Innovation and Change (Jan 2006, Chester) Caroline Ackland

[10th Annual Meeting of the Scientific Association of Swiss Radiation Oncology \(March 2006, Sion\)](#). Kris Armoogum

*Targeted intraoperative radiotherapy (TARGIT) yields very low recurrence rates when given as a boost.* San Antonio Breast Cancer Conference Dec 2005 Jayant S Vaidya et al

## **Invited Talks**

*Debate for Partial breast irradiation in selected patients and accurate targeting of boost in others.* 13th European Cancer Conference (ECCO-13), Paris, 1 Nov 2005 Rationale for partial breast irradiation in selected patients (15 min) Jayant S Vaidya

*Intraoperative radiotherapy for breast cancer 3rd European conference on Plastic and Reconstructive Surgery of the Breast.* Milan 17 December 2005. Jayant S Vaidya

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*Targit*. 8th Milan Breast Cancer Conference, Milan, Italy, 24 Jun 2006 Jayant S Vaidya

*Intraoperative radiotherapy for breast cancer*, Annual Meeting of Scottish Radiological Society, Dundee, UK, 19 Nov 2004, Jayant S Vaidya

*Intraoperative Radiotherapy for breast cancer, Focus on Innovative and Locoregional Treatments-VII* Congresso Nazionale SITILO (Societa' Italiana Di Terapie Intergrate Locoregionali in Oncologia), Florence, 26 Nov 2004, Jayant S vaidya

*Targit Meeting with Surgeons and Radiation Oncologists*, New Orleans, USA, 7 Dec 2004 Jayant S Vaidya

*The International TARGIT trial, 1<sup>st</sup> Workshop on Health Technology assessment Programme for Italy* (Programma Ricerca e Innovazione Emilia-Romagna – 1st Workshop-La radiotherapia intraoperatoria nel tumore della mammella), Bologna, Italy, 21 Dec 2004 Jayant S Vaidya

*Targeted Intraoperative radiotherapy trial Scottish Cancer trialists Meeting*, St Andrews, UK, 25 Feb 2005, Jayant S Vaidya

*Targeted Intraoperative radiotherapy trial*, Breast Cancer trialists Meeting, Dundee, UK, 10 Mar 2006 Jayant S Vaidya

## Awards

£20,000 Cancer Research UK Pilot study award at the NCRI conference 3 Oct 2005 Jayant S Vaidya and Heiko Enderling

<http://www.dundee.ac.uk/pressoffice/contact/2006/February/mathssurgery.html>

## Public Access

Public access to this Newsletter is via:

[http://www.medicalphysicist.co.uk/IORT\\_page.html](http://www.medicalphysicist.co.uk/IORT_page.html)

## Publications

An informative new website has been set up to highlight the work of the IORT group. It also functions as a repository of scientific papers published by members of the group. See below.

<http://www.dundee.ac.uk/surgery/targit/targitpapers.htm>

<http://www.dundee.ac.uk/pressoffice/contact/2006/February/>

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(JSVaidya-Research Image as Art- UCL prize in 2002)

[Mr. Kris Armoogum](#)

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