



The Royal Australian and New Zealand College of Radiologists®

The Faculty of Radiation Oncology

Faculty of Radiation Oncology RANZCR Submission to the House Health Committee Inquiry into Skin Cancer

Background

The Faculty of Radiation Oncology, RANZCR, is the peak bi-national body advancing patient care and the specialty of radiation oncology across Australia and New Zealand. FRO is responsible for setting of quality standards, producing excellent radiation oncology specialists, and driving research, innovation and collaboration in the treatment of cancer. Radiation oncology is a medical specialty that involves the controlled use of radiation to treat cancer either for cure, or to reduce pain and other symptoms caused by cancer.

Radiation therapy (also called radiotherapy) is the term used to describe the actual treatment delivered by the radiation oncology team. Radiation therapy is a highly cost effective cancer treatment. It costs only 6 cents out of each health-care dollar spent on treating cancer overall, yet it is responsible for about 40% of all cancer cures. It may be used alone or in conjunction with surgery, chemotherapy and other treatments. It is usually completely non-invasive, and accessed through out-patient clinics.

Over 100,000 Australians are diagnosed with cancer each year. It is estimated that about half of them will benefit from radiation therapy as part of their overall cancer treatment. This means that 1 in 2 patients with cancer may benefit from radiation therapy at some point during their illness. Skin cancers are extremely common and radiation therapy is a key pillar of their treatment.

The term skin cancer includes a wide spectrum of disease, ranging from very benign and superficial lesions which are easy to treat, all the way to highly malignant life threatening cancers such as merkel cell carcinoma and melanoma which have a high mortality rate. It also affects all age ranges, and is not simply a disease of the elderly.

The incidence of all skin cancers is rising, particularly as our population ages, with exposure to sun being a key causative factor, often over many years. It is likely that the caseload for radiation treatments will show a concurrent increase as a result. However, this trend may be offset by:

- Impact of the prevention campaigns (such as 'sun-smart' strategies);
- Better management prior to skin conditions in the pre-malignant phase;
- More effective management of early skin cancer.

The majority of skin cancers are managed successfully in the community by GP's, dermatologists and plastic surgeons. However, patients with life threatening or complex conditions should be managed (where possible) by a multi-disciplinary team of experts which will include surgical, medical and radiation oncologists. These complex conditions include melanoma, merkel cell carcinoma and high risk squamous cell carcinomas (ie poorly differentiated, large, recurrent, high risk locations eg lip, ear,

scalp and/or with underlying immunosuppression). Radiation Oncology plays an important role in the management of these conditions, both in the curative and palliative settings.

Use of radiation therapy in the management of skin malignancies

Superficial (SXT) and orthovoltage (or deep, DXT) radiation therapy beams are generally used for the treatment of simple, small squamous cell carcinoma (SCC) and basal cell carcinoma (BCC), (as well as non-malignant skin conditions such as keloid). There still are some specific clinical situations where the unique characteristics and physical properties of superficial radiation therapy remain compelling, one example being treatments around the eye, such as skin cancers on the eye. These treatments are currently offered in every state of Australia, except the Northern Territory, and by dermatologists as well as radiation oncologists.

It is anticipated that superficial and orthovoltage treatments will move solely to the domain of radiation therapy departments as anecdotal evidence suggests this equipment is being phased out in the private dermatology practices.

Higher energy X-ray and electron beams which are in the megavoltage range, are produced by linear accelerators and are capable of penetrating more deeply into tissue. The machines are standard equipment in all radiation oncology departments and are used to treat the majority of cancer patients requiring radiation therapy. Complex and sophisticated planning of the treatments may be required to produce radiation dose distributions which tailor high dose regions to the cancer, whilst minimizing doses to normal tissues to reduce side effects.

The technical applications of the different types of radiation therapy are listed below.

Applications of radiation therapy modalities in skin cancers

The type of radiation therapy used to treat skin cancers is dependent on the indication for treatment, the dose required and the volume needing to be treated.

1. Small, superficial lesions on the skin surface
 - SXRT or DXRT, low energy, limited penetration through skin
2. Larger deeper lesions on the skin surface
 - Electrons
3. Lesions which are deep, or when it is important to treat lymph node basins draining the area of the primary cancer; and/or needing to treat near cranial nerves
 - Megavoltage radiotherapy
 - i. 3-dimensional conformal radiation therapy (3DCRT), including multi-leaf collimation to shape the radiation beams to the target

- ii. Intensity modulated radiation therapy (IMRT) – increasingly used to treat complex situations especially in the head and neck region, providing excellent dose distributions by varying the intensity of the beams through the treated area.

Most radiation therapy centres currently have access to this technology, but in some instances it can be difficult for rural patients to access all of these options easily. It is expected that the expertise for treating patients with IMRT who fall into the level 3 will become more widely available as centres gain experience and develop the appropriate protocols for the required quality assurance. Resources are required to ensure that all centres have the personnel and technology required to provide a safe and high quality service for these patients.

To prepare Australia for the increasing cancer incidence, expansion of radiation oncology services should be enacted in a planned and sustainable way. Investment in technological, clinical and laboratory research and in building radiation treatment centres is vital for the health of Australians now and into the future.

For more information about radiation oncology, please visit
<http://targetingcancer.com.au/>

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