gamma GAZETTE

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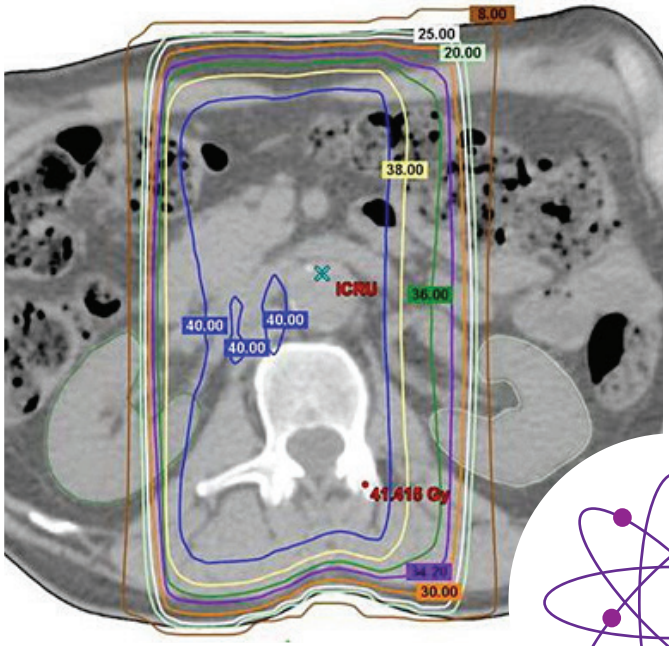

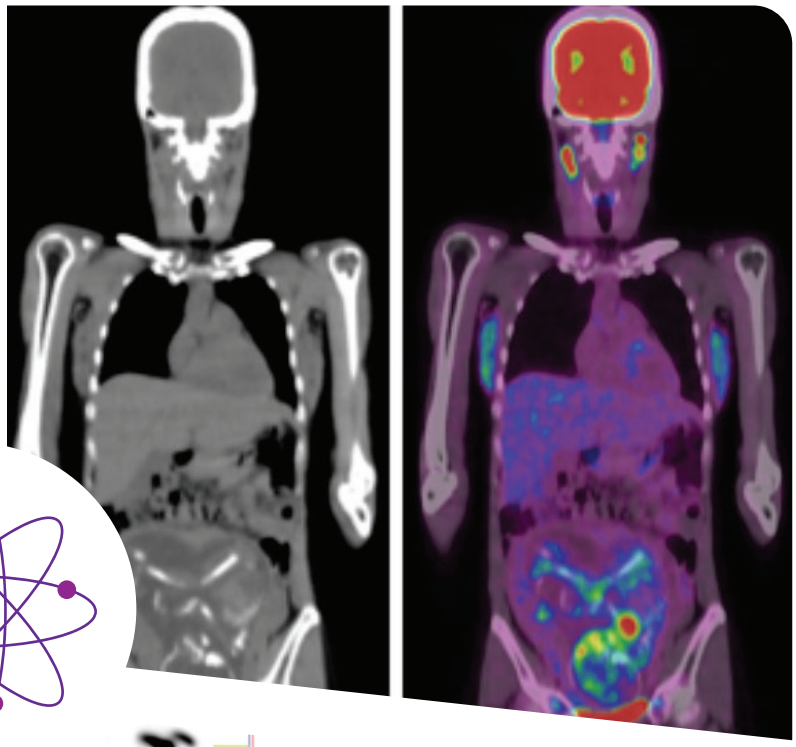

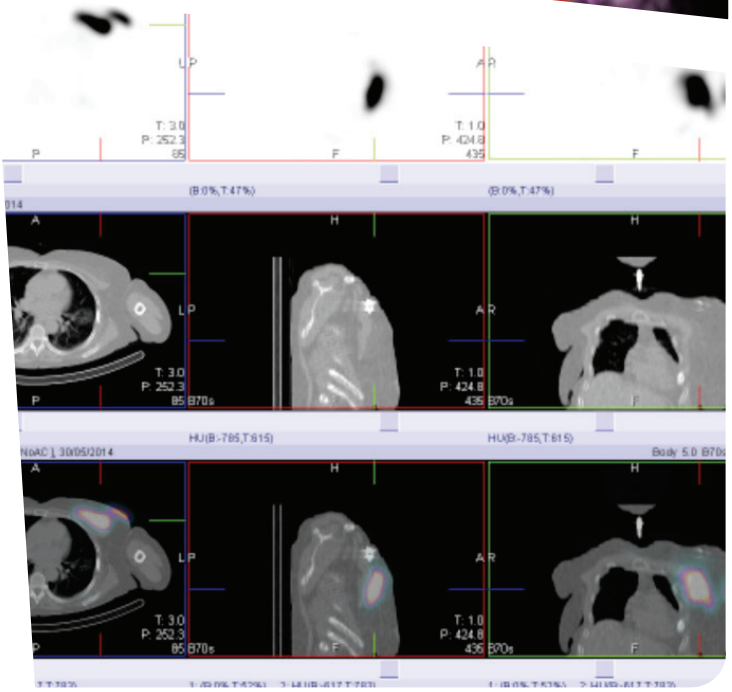

The official publication of the
Australian and New Zealand Society
of Nuclear Medicine

Contents

Deadlines

The deadlines for each issue of *Gamma Gazette* for this year are set out below. These deadlines must be strictly adhered to in order to get the journal out on time. Do not leave the submission of copy until the last minute. For advice on how to submit material please go to the website www.anzsnm.org.au

March – February 1 July – June 1 November – October 1

Welcome

Welcome to the last issue of *Gamma Gazette* for 2014. The Victoria and Tasmania branch have collated a collection of interesting educational and scientific articles for the edition. The articles range from interesting cases to an article focussing on the radiation dose to foetus from PET imaging during pregnancy.

This edition also includes an article celebrating the handover of the World Federation of Nuclear Medicine and Biology to the ANZSNM at the recent World Congress in Cancun Mexico. I would like to congratulate all those who have contributed to the ANZSNM's successful bid and those who will be working on the next World Congress to be held in Melbourne in 2018.

I would like to thank the members of the Victoria/Tasmania Branch committee and the authors and sponsors who have contributed to this edition of *Gamma Gazette*. I hope you enjoy the issue.

As this is the last issue of *Gamma Gazette* for 2014 I would like to wish everyone a happy and safe festive season and a wonderful and prosperous 2015.

Bridget Chappell
Victoria Branch Chairperson

Job Vacancies

POSITION VACANT

Sutherland Nuclear Medicine and Bone Densitometry

requires a

Nuclear Medicine Scientist (Level 2)

The job requires you to work in our private practice. The position is part-time, maternity relief for 2 days/week, working Wednesday and Friday, with holiday and sick leave relief on other days as required. The position commences in January 2015, for a period of 12 months.

The practice is located in the Sutherland Shire, Sydney, and provides Nuclear Medicine services to The Sutherland Hospital, Kareena Private Hospital, and outpatients. The practice runs a Philips Brightview SPECT/CT, 2 Siemens ECAM SPECT cameras, and a Hologics BMD scanner.

The successful candidate must demonstrate independent and significant professional knowledge and judgement when performing clinical tasks. They must also provide a high level of patient care and have a sound knowledge of work place safety issues. Interviews will be held in December 2014.

For all enquiries please contact:
Marion Lewis (chief tech) on (02) 9524 3838 (Mon-Thurs), or
send your expression of interest/CV via email: snmchief@gmail.com

For more job vacancies, please visit the ANZSNM website at: **www.anzsnm.org.au.cms/careers/jobs**

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This issue compiled by the Victoria and Tasmania branches.

Submissions

Scientific submissions on all aspects of nuclear medicine are encouraged and should be forwarded to the Secretariat (see instructions for authors published on line at www.anzsnm.org.au). Letters to the Editor or points of view for discussion are also welcome.

If original or public domain articles are found and considered to be of general interest to the membership, then they should be recommended to the Editor who may seek permission to reprint.The view expressed in any signed article in the journal do not necessarily represent those of the Society. The individual rights of all authors are acknowledged.

The ANZSNM Gamma Gazette is published three times a year: March, July and November.

Deadlines for each issue of the journal are the first of each month prior to publishing.

ANZSNM website address: **www.anzsnm.org.au**

Aims and Objectives

The Australian and New Zealand Society of Nuclear Medicine Limited

The objectives of the Society are as follows:

1. **Promote**
   a) the advancement of clinical practice of nuclear medicine in Australia and New Zealand;

   b) research in nuclear medicine;

   c) public education regarding the principles and applications of nuclear medicine techniques in medicine and biology at national and regional levels;

   d) co-operation between organisations and individuals interested in nuclear medicine; and

   e) the training of persons in all facets of nuclear medicine.

2. **Provide opportunities for collective discussion on all or any aspect of nuclear medicine through standing committees and special interest groups:**
   a) The Technical Standards Committee sets minimum standards and develops quality control procedures for nuclear medicine instrumentation in Australia and New Zealand.

   b) The Technologists Special Interest Group. With the introduction of National Registration for Nuclear Medicine Technologists / Scientists as of 1st July 2012, the future role of the Accreditation Board was reviewed and federal council made a decision to disband the current Accreditation Board and re-allocate ongoing responsibilities to the ANZSNM – Technology Special Interest Group (TSIG). The PDY and mentor program, CPD program, department accreditation and the overseas qualification exam are now managed by sub-committees of the TSIG.

   2) The Radiopharmaceutical Science SIG and a Physics SIG that maintain standards of practice for their particular speciality and provide a forum for development in Australia and New Zealand.

Office Bearers

Any changes or additions to the details listed should be forwarded in writing to the Secretariat as soon as possible.

President	Prof Vijay Kumar (IRC), email: vijay.kumar@health.nsw.gov.au
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Radiopharmaceutical/Science	Ms Jennifer Guille, email: jennifer.guille@sesiahs.health.nsw.gov.au
Physics/Computer Science	Dr Darin O'Keeffe, email: darin.okeeffe@cdhb.health.nz

Technical Standards Committee	Chairperson: Dr Darin O'Keeffe, email: darin.okeeffe@cdhb.health.nz
Scientific Advisory Panel	Chairperson: Prof Dale Bailey, email dale.bailey@sydney.edu.au
International Relations Committee	Chairperson: Professor Andrew Scott, email: Andrew.Scott@ludwig.edu.au
Nurse Member Liaison	Mr Erwin Lupango, email: Erwin.lupango@sessiahs.health.nsw.gov.au

Reporting of Abnormal Behaviour of Radiopharmaceuticals

The Society maintains a register of reports of abnormal behaviour of radiopharmaceuticals. Abnormal behaviour can be reported either by telephone fax or e-mail, or in writing to:

Dr John Baldas, ARPANSA
619 Lower Plenty Road
Yallambie VIC 3085
Tel: (03) 9433 2211
Fax: (03) 9432 1835
email: john.baldas@arpansa.gov.au

Mr J. Gordon Chan
Department of Nuclear Medicine,
Austin & Repatriation Medical Centre, Heidelberg VIC 3084
Tel: (03) 9496 3336
Fax: (03) 9457 6605
email: gordon.chan@petnm.unimelb.edu.au

ANZSNM ASM 2015

WHEEL OF CHANGE

17–20 April
Brisbane Australia

Call For Abstracts NOW OPEN

www.anzsnm2015.com.au

On behalf of the Organising Committee, we would like to invite you to attend the 45th Annual Scientific Meeting of the Australian and New Zealand Society of Nuclear Medicine (ANZSNM), which will be held in Brisbane, Queensland from the 17th - 20th April 2015. The theme of the meeting is "Wheel of Change".

The Pre-conference Symposium will be held in the beautiful surrounds of Victoria Park, Friday 17 April, 2015.

The conference's mixture of international and local speakers, in-depth educational offerings, and important delegate opportunities for contribution and discussion make it a significant event for all in the nuclear medicine community.

We look forward to welcoming you to Brisbane in 2015.

Dr Joseph Wong & Lyndajane Michel
Co-Convenors, ANZSNM Annual Scientific Meeting 2015

International keynote speakers include:

Assoc. Prof. Hojjat Ahmadzadehfar

Dr John J. Mahmarian

Prof. Frank Rösch

Prof. Dr. Markus Schwaiger

AUSTRALIAN AND NEW ZEALAND SOCIETY OF NUCLEAR MEDICINE

For further information
Please contact:

Conference Manager:
Plevin and Associates Pty Ltd
Tel +61 8 8379 8222
anzsnm2015@plevin.com.au

REGISTER NOW

President's Report

The ANZSNM is conscious that we must be forever moving forward to offer our members the best support and service available. For this reason, since I updated you last, I am delighted to inform you that we have made significant progress in revamping the society's website, as a new comprehensive platform for our members. The new website will assist in improving the professional status of our members, communication, membership benefits and promote greater awareness of the society within the public and government circles. Our Secretariat, Drajon Management with Dr Andrew St John, the new General Manager, and his team members have been working hard to liaise with the website developers, Internet Vision Technologies (IVT), to implement the web-design and incorporate our required functional aspects of the website. They are working closely with the executive committee of the ANZSNM to have the deadline go live late November 2014 and the progress has been very systematic. The hard work, dedication and contribution over the past years by many members of web-committee are highly appreciated and their continued support is vital. The website will be built to perform many tasks such as membership renewal, co-ordinate and publicise SIG activities, deliver CME and accreditation-related activities, and disseminating information through its on-line presence as well as in *Gamma Gazette.*

The International Relations Committee (IRC) worked tirelessly in securing the bid to assume the Presidency of the WFNMB (World Federation of Nuclear Medicine & Biology), culminating in the World Congress of Nuclear Medicine & Biology (WCNMB) in Melbourne in 2018 with Prof. Andrew Scott as the chairperson and a team of experts in the organising committee. The baton change happened at the recent WCNMB 2014 in Cancun, Mexico in Aug 2014. Under the leadership of the ANZSNM, the WFNMB will be instrumental in expanding global nuclear medicine activities between 2014 and 2018, especially in education and training activities in many emergent new world regions, and in particular in the Asia and Oceania region, recently described as "the hottest spot in the development and expansion of nuclear medicine and molecular imaging".

In September the ANZSNM hosted a one day symposium in Melbourne on the topic of "PET and Molecular Medicine in Radiotherapy Treatment Planning", in conjunction with the combined scientific meeting of the Royal Australian & NZ College of Radiologists (RANZCR), the Australasian College of Physical Scientists & Engineers in Medicine (ACPSEM) and the Australian Institute of Radiography (AIR). This is a four-yearly event combining all of the major radiology and radiation therapy practitioners and so the meeting was aimed at enhancing interaction with colleagues in the complementary disciplines involved. Speakers were drawn from nuclear medicine as well as from the fields on radiation oncology and radiology. It was an intense day with much fruitful discussion and it appears that all participants were able to acquire new knowledge from their colleagues in the other disciplines. The symposium was convened by Sze Ting Lee and Dale Bailey and we appreciate their efforts.

There are several key initiatives being engineered by the ANZSNM society and its structural arms. One such project is participation in the "SNMMI Global Initiative Project" aimed to further enhance the availability, use and access to diagnostic and therapeutic radiopharmaceuticals globally. A detailed analysis of this issue has never before been formally undertaken and this process will attempt to ensure patients have access to as full a spectrum of Nuclear Medicine scans and treatments as is possible. It will also allow strategic planning for ensuring continued supply of radiopharmaceuticals in both developed and emerging nations (for more details see IRC Report). It will be discussed further at the Annual Congress of EANM-2014 in Gothenburg, Sweden.

The next annual conference of ANZSNM 2015 in Brisbane is shaping up very nicely with the conspicuous participation by the Presidents of SNMMI and ARCCNM (Asian Regional Co-operation Council in Nuclear Medicine). The prominent clinician Prof. Marcus Schwaiger (Germany), scientist Prof. Frank Roesch (Germany) and technologist Dr April Mann have confirmed their participation, which will continue to improve the bilateral relationships between ANZSNM and overseas associations. The Scientific Advisory Panel (SAP), chaired by Prof. Dale Bailey, has played a key role in stream-lining the selection of overseas speakers with known clinical and scientific expertise combined with outstanding communication and presentation skills. The local organising committee is working hard to make it a grand success in Brisbane. The planning is underway for the ANZSNM-2016 meeting in Rotorua, NZ with a number of international experts already locked in.

The ANZSNM has joined forces with the AANMS in a number of recent developments, such as the clinical trials group, ARTnet, and a Radiopharmaceuticals Licensing and Registration working party to enhance dialogue with government, and we should see this continuing into the future. The options are also being explored to establish a Radionuclide Therapy multi-disciplinary group within the framework of the society.

I am delighted to say again that I am privileged to work with a team of dedicated members in the Federal Council, and with the new Secretariat, and appreciate their support in all facets of running the activities of the society. All members should feel free to let us know how we can improve the services provided as we expand further into the digital world.

Prof. Vijay Kumar
President ANZSNM

Branch News

AUSTRALIAN CAPITAL TERRITORY

The ACT Branch has been very quiet of late. AHPRA has recently released some information regarding the changes to the supervised practice program for new graduates of 3 year courses and also practitioners just returning to work after an extended absence. AHPRA has some specific requests regarding principal supervisors of this category of employees and the ACT Branch is eagerly awaiting further instructions from AHPRA.

Sharon Mosley
ACT Chair

SOUTH AUSTRALIA

The South Australian Branch of the ANZSNM held a meeting in July at Calvary Hospital with a fantastic attendance. The SA Technologist group also held a V/Q protocol review in August which was well represented from all SA departments.

As we near closer to the end of 2014 SA is down to its final few meetings for the year. The last meeting October 29 at Flinders Medical Centre with the AGM to be held on November 26 at The Caledonian Hotel.

The Technologist Branch will be holding their AGM/Radpharm Award late November/December with the date to be confirmed. We look forward to ending 2014 with well attended, interesting meetings.

A very big thankyou to all those that have helped to make the meetings this year succesful.

Nicole Ayars
SA Branch Secretary/Treasurer

WESTERN AUSTRALIA

The last few months have seen some very educational and informative opportunities for Western Australia technologists.

Firstly, our ANZSNM WA Branch held a Gastrointestinal System workshop on August 9 at the UWA Club. Of course a big thankyou goes out to all our presenters; Stephanie O'Donnell, Diane Cheong, Dr Ian Yusoff, Emma Brook, Dr Jonathan Tibballs, Dr Geoff Bower, Dr Russell Troedson and Shayne White, for your interesting and informative presentations. I would also like to extend a thankyou to Dr Nelson Loh for another challenging quiz. Last, but not least, thankyou very much to our sponsors; GE Healthcare, Sirtex, ANSTO Health, Siemens, GMS and the ANZSNM.

Secondly, our Radpharm Presentation night was held at PRC Subiaco. Again thankyou to our entrants Emma Brook from RPH and Amy Evans from SCGH for the hard work they displayed in their presentations, and a big congratulations to Amy who won the Radpharm funding prize for the 2015 ANZSNM Annual Conference in Brisbane.

One more thankyou to all the technologists who attended these events and made them a great success. It remains a high priority of the WA ANZSNM committee to provide informative and entertaining events to our members (and non-members), and your support is greatly appreciated. Hopefully we can continue this trend for future events and meetings.

Our final ANZSNM meeting for the 2014 calendar is our AGM meeting to be held at Princess Margaret Hospital on November 25. Specific details regarding presenters, activities will be provided in the very near future. We look forward to seeing you all there.

Matt Patterson
WA Branch Committee Member

NEW ZEALAND

New Zealand is enjoying the signs of spring, with daylight saving providing some welcome balmy evenings. Well, we live in hope!

September saw our Annual Branch meeting, this year in sunny Nelson. While there is in fact no Nuclear Medicine or PET Departments in this part of NZ, we decided at last years meeting that Nelson would be a great place for us to meet. There was a fantastic turnout of NM Physicians, tech's and vendors, with the Saturday night themed dinner (Fur, Leather, Lace and denim!) offering something for everyone.

A huge thank you to Victoria Brooks from Fulford Radiology in New Plymouth and Tracey Wharehoka from GMS Nuclear Supplies for putting together such a fantastic meeting. At the AGM we welcomed in the following office bearers:

- Chairperson – Dr Sue O'Malley
- Treasurer – Karen Wiki
- Secretary – Pru Burns
- TSIG Representative – Jackie Bague

Alana Martin, NMT at the Mercy Radiology PET/CT Department in Auckland won the Cyclotek Pharmaceuticals poster prize, her poster was titled "The Role of NM and PET/CT in Neuroblastoma".

Trish Mead, Charge NMT at Auckland Hospital won the Radpharm Award, "How old is too old for a MCU?" ▶

In exciting news, the University of Auckland is now offering New Zealand students an online post graduate diploma in Nuclear Medicine Imaging. Six students are currently enrolled and are about to complete their first academic year. This course offers NZ based radiographers the opportunity to branch into our fantastic profession, without having to study off shore.

Plans are coming together for the Annual Scientific Meeting planned to visit NZ in April 2016 – stay tuned for updates on the exciting and explosive venue!

Pru Burns
NZ Branch Secratary

VICTORIA/TASMANIA

The second half of the year has seen the Victoria/Tasmania Branch committee busy finalising the program for the Branch's Annual Day Seminar and AGM that took place in at the Crowne Plaza Melbourne on October 11, 2014 with a broad range of topics being presented on Changing Paradigms in Molecular Imaging. I would like to thank our members for their support of this event in particular those who volunteered their time and energy to present on the Day.

The AGM held as part of the Annual Day Seminar saw a changing of the guard with two members of committee standing down. I would like to thank Melinda Hill for her hard work and contribution to the committee during her tenure particularly with her involvement in Nuclear Medicine promotions in Victoria over the past three years. ANZSNM resentativeat the local and Federal level I would like to welcome the new committee members elected at the AGM, Christian Testa and Jessica Welch.

CPD and educational events remain the main focus of the branch with several events having taken place over the last few months. A half day seminar was held in Hobart in August with around 25 people attending, the VSNMT hosted the Radpharm Awards as part of their annual day seminar which was also held in August.

In 2015 we are aiming to hold several scientific meetings as well as the Day Seminar in October, with a post conference meeting in April however the speaker for this meeting is yet to be confirmed. In addition to the Annual Day Seminar and various meetings throughout the year the Victoria/Tasmania Branch is hoping to again hold at least onea series of "Molecular Imaging Masterclass" in 2015. These focussed events will have limited places with ANZSNM members having priority access and complimentary registration to the event.

As this is the last *Gamma Gazette* of the year, and my final report as a board member I would like to wish all members a Safe and Happy Festive season and look forward to seeing you all at these exciting Society events in 2015.

Bridget Chappell
Branch Chair

Vale: Perri Bakaimis

In September the Victorian Nuclear Medicine Community lost one of its members with the passing of Nuclear Medicine Technologist Perri Bakaimis. The entire community was deeply saddened and left poorer by Perri's death. On behalf of all Vic/Tas Branch members I would like to extend our deepest sympathies to her husband, children and her sister Helen. The following is a tribute prepared by Sarah Gales from Cabrini Hospital and Perri's sister Helen:

It is with great sadness that the ANZSNM Vic Branch learned of the passing of Perri Bakaimis on Monday 1 September 2014.

Perri joined the Victorian Nuclear Medicine community in 2000 when she began her studies at RMIT University, upon completion of her Science degree at Monash University. Perri was a fabulous student and the course enabled her to fulfil her dream to work with people. In 2003 Perri accepted an intern position at Cabrini Hospital and she quickly became a valued member of the Nuclear Medicine team and highly regarded by her colleagues.

Perri was also a member of the Victorian Society of Nuclear Medicine Technologists (VSNMT) Committee, and for many years edited the Newsletter. She was also an active member of the Victorian Nuclear Medicine Internship Committee (NMIC) and in this role, mentored many RMIT graduates during their intern year.

Perri was a most caring, generous, fun and engaging person and she really found her niche working in Nuclear Medicine. Perri will be greatly missed by her team at Cabrini and the Nuclear Medicine Community in Victoria.

It was Perri's dream to raise awareness and much needed funds for breast cancer, in particular for research into the triple negative subtype associated with the BRCA gene mutation. Gifts can be made in Perri's name to the National Breast Cancer Foundation (NBCF) by using the following link: http://my.imisfriendraising.com.au/PersonalPage.aspx?SID=267760&LangPref=en-CA or by selecting the 'In Memory' tab and searching for Perri's page on the NBCF website.

Perri is survived by her beloved husband Theo, her two beautiful children Tiana and Yianni and her wonderful younger sister Helen.
Helen Pipilakis, Nuclear Medicine Department, Monash Medical Centre

Sarah Gales, Nuclear Medicine Manager, Cabrini Health

Special Interest Group News

TECHNOLOGISTS

The ANZSNM has been working closely with the MRPB to finalise the new supervised practice policy that is due to commence from November 1, 2014. A copy of the final document is available from the AHPRA MRPB website and we would recommend that all technologists review this document. The ministerial endorsed supervised practice program will replace the existing ANZSNM PDY program as of this date.

There are a few important points to note:

- Graduates of 3 year courses will need to complete the MRPB supervised practice program which is a 12 month program with quarterly reporting, similar to the existing ANZSNM PDY course;
- Graduates of accredited 4 year courses will be eligible for full general registration on successful completion of all course work;
- A PDY who has enrolled in the ANZSNM PDY program before March 31, 2014 will complete their PDY training through the ANZSNM as this program has been approved by the MRPB through to March 31, 2015;
- A PDY that has enrolled in the ANZSNM PDY program after March 31, 2014 will need to transition to the new MRPB supervised practice program as of January 1, 2015. The MRPB are currently developing guidelines to assist the PDY and employer (supervisor) with this transition process;
- As of November 1, 2014, all new PDY or supervised practitioners will need to enrol in the MRPB supervised practice program;
- The reporting process will be on-line via a link on the MRPB website, which is not available as yet

If you have any questions regarding the new program, please contact either or Helen Tierney from AHPRA on helen.tierney@ahpra.gov.au or the ANZSNM secretariat (secretariat@anzsnm.org.au)

The annual TSIG symposium for 2014 was held Saturday July 26 in Queenstown, New Zealand. We had over 50 attendees and the program included presentations on brain tumour imaging, lung SPECT/CT, Parathyroid SPECT/CT using a cardiac camera, case study presentations and a few abstract submissions. A great day was had by all and most found time to either ski or enjoy the food and wine. We would like to thank the sponsors for their ongoing support and hope they will continue to be involved next year.

The revised scope of practice document will be available on the new website by the end of November. If you require a copy before this date, please contact the secretariat.

The ANZSNMT have been working with the AIR to revise the guidelines for eligibility to complete the AIR MRI Accreditation course. This is currently being discussed by the board of the AIR and we hope to receive their decision in the next few months.

The ANZSNMT have also put together a working group to develop an ECG training and interpretation course that will be available as an on-line course via the ANZSNM website. The program will take time to develop but we hope to have a provisional draft course to present at the ASM in Brisbane next year.

As this is the last *Gamma Gazette* for this year, happy holidays to everyone and enjoy a festive and safe Christmas season.

Liz Bailey
Chair TSIG

SCIENTIFIC ADVISORY PANEL

Recent activity by the SAP has resulted in it undertaking the following on behalf of the Society:

- We have proposed 3 potential ANZSNM-hosted CME sessions for the 2015 SNMMI Scientific Meeting (Baltimore):
  - Lung Imaging – From Planar to SPECT and PET with CT
  - Can Ga-68 replace Tc-99m in Nuclear Medicine?
  - PET/CT & Molecular Imaging in the Management of Malignant Melanoma

- Recommended to Federal Council the introduction of a new award - the ANZSNM Distinguished Achievement Award to be awarded to an individual who has made a highly significant contribution to Nuclear Medicine in Australasia. This could be through extraordinary leadership, development of diagnostic techniques or ▶

therapeutic approaches that have fundamentally changed practice, or scientific discovery that has had wide-reaching impact on the field of Nuclear Medicine & Molecular Imaging. In view of the prestigious nature of the Distinguished Achievement Award, it is anticipated that it would:
– be awarded purely based on merit;
– not necessarily awarded every year; and,
– be restricted to no more than one award per year (per Annual Scientific Meeting).

- Continue to liaise with the local organising committees for the 2015 (Brisbane) and 2016 (Rotorua) Annual Scientific Meetings regarding scientific and clinical topics and themes, and choice of appropriate speakers;
- Called for expressions of interest to form the organising committee for the 2017 meeting (NSW Branch responsibility);
- Requested applications for the ANZSNM Research Grant for 2015.

Prof Dale Bailey Phd
Chair, ANZSNM Scientific Advisory Panel

Looking Backwards to Tomorrow

Functional Imaging in Radiation Oncology

Friday 13th February 2015
8:30am-4:30pm

Lecture Theatre 101, Sydney Law School Building
University of Sydney

On the 10th anniversary of the first NM Physics SIG workshop on the topic of "Advances in PET-SPECT/CT and RTP" we look back at what has been achieved, forward to where the field is heading, and find solutions for the challenges of today.

Please put the date in your diaries.
Full details and registration information will be available in December.

For further inquiries contact Darin O'Keeffe,
ANZSNM Physics Special Interest Group (darin.okeeffe@cdhb.health.nz)

Accreditation

Congratulations to the following departments which were granted Accreditation or Re-Accreditation for the training of PDY Technologists:

Newcastle Nuclear Medicine	153
Cairns Diagnostic Imaging	116
Bankstown Lidcombe Hospital	74

Congratulations to the following technologists who were granted Accreditation:

Madison Annandale
Adrian Russell
Rachel Pluker
Melissa Wunderlin
Biljana Pejovska
Rebecca Kneen

Diary dates

Email the Production Editor at the Secretariat on secretariat@anzsnm.org.au to list your upcoming conference and meeting dates on the diary page.

2014

8-9 November
RAINS 11th Annual CPD/CME Conference
Waters Edge, Port Macquarie

11 November
Qld Radpharm Awards and AGM
Pineapple Hotel, Kangaroo Point

25 November
Western Australia AGM to be held at
Princess Margaret Hospital, Subiaco, Perth

26 November
South Australia AGM to be held at
The Caledonian Hotel, North Adelaide

3 December
South Australia Technologist Group
AGM/Radpharm Awards,
Toptai Restaurant, North Adelaide

2015

17 – 20 April 2015
ANZSNM 45th Annual Scientific Meeting
Brisbane, Queensland

31 Oct – 4 Nov 2015
AOFNMB 2015 Asia Oceanic Congress of Nuclear Medicine and Biology
Jeju, Korea

2016

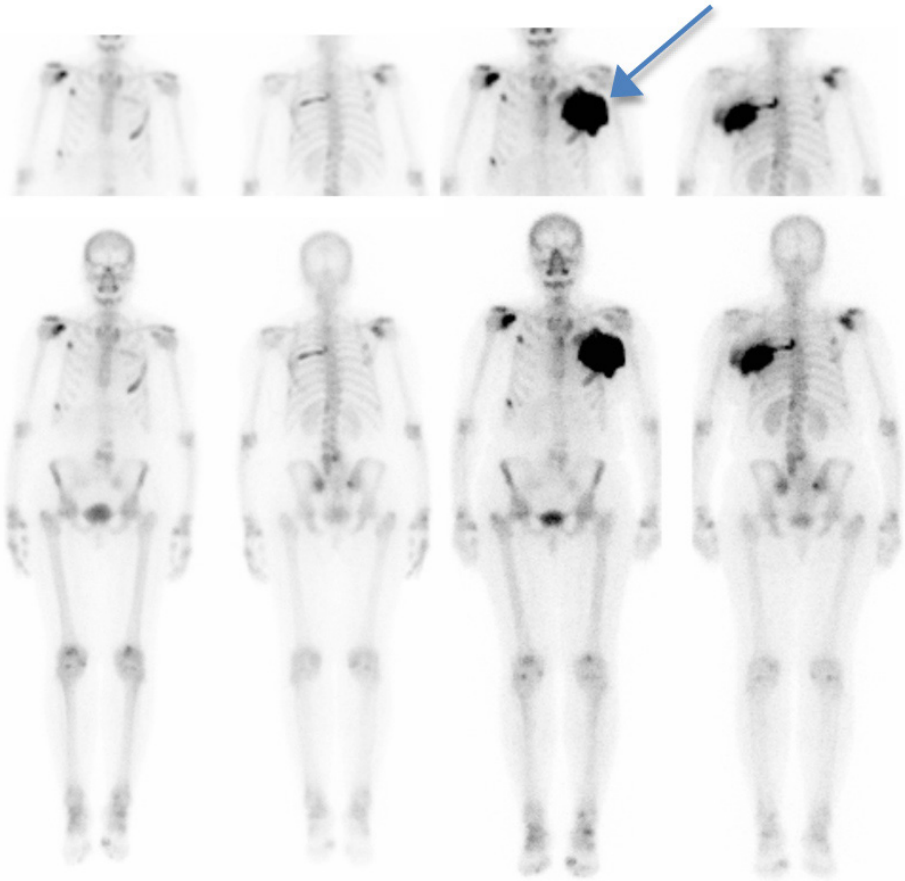
April 2016
ANZSNM Annual Scientific Meeting
Rotorua, New Zealand

What's that?

Answer on page 19

Submitted by

Ruth Winterton
Richard Dutschke
Northern Nuclear Medicine – Tasmania



Bone Scan 17/01/14 Bone Scan 30/05/14

A 59-year-old female with known breast carcinoma and known osteoblastic bony metastases, was referred for a follow-up bone scan to assess the status of her bony metastases.

The patient originally attended our department one week prior to the scan in question. Venous access could not be achieved. It was decided that the patient would return for a repeat attempt the following week.

The patient organised with the Holman Clinic – Oncology Centre – for access to be available via her infusaport – situated in the left upper chest

On the day of the bone scan a tubal attachment to the infusaport was attached in the Holman Clinic for facilitation of isotope delivery. It is noted that the patient advised our department that her infusaport had been in-situ for several years, and that she had been receiving chemotherapy via the port recently.

The port was checked for patency in the Holman Clinic with a saline injection. Isotope was injected via the port in our department – followed by a saline flush of 20ml to confirm clearance of isotope from the tubing. It is estimated that 45ml of fluid, in total, was injected into the port to confirm patency at various stages.

No discomfort from any of the saline or isotope injections was reported by the patient.

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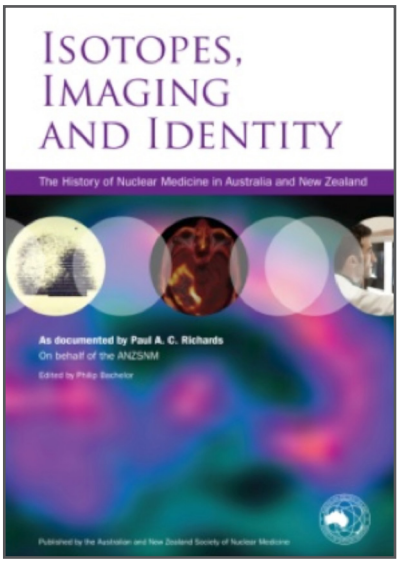

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Australia takes leadership of the World Federation of Nuclear Medicine and Biology

At the recent Congress of the World Federation of Nuclear Medicine and Biology (WFNMB), held in Cancun, Mexico in October 2014, the leadership of the WFNMB was assumed by a team from Australia. The new executive of the WFNMB will be President: Prof Andrew Scott, Secretary General: A/Prof Sze Ting Lee, and Treasurer: Prof Vijay Kumar.

The WFNMB was established over 40 years ago, in 1970, during the third Congress of the Latin-American Association of Societies of Nuclear Medicine and Biology, in Mexico City. The WFNMB was established to promote Nuclear Medicine worldwide, particularly in developing countries, and is the peak global organisation for Nuclear Medicine. The Governing Council of the WFNMB consists of representatives of all major Nuclear Medicine and Molecular Imaging Societies and Associations, including SNMMI, EANM, AOFNMB, ALASBIMN, AANM, WHO and IAEA.

The selection of the Executive Committee is by vote held every four years, and the Australian bid was successful at the vote in Milan at the EANM meeting in 2012. The Australian bid to lead the World Federation for a four year period was built on a platform of providing leadership in advocacy, teaching and training, research and technical standards, globally over the 2014-2018 period. This vision of "Global Translation of Molecular Medicine" was embraced by the global Nuclear Medicine community, as the vote (by all member countries) in Milan was unanimous for Australia taking this leadership role.

The Australian team involved with the successful WFNMB bid included Prof Andrew Scott, Dr Peter Collins, A/Prof Sze Ting Lee, Prof Vijay Kumar, Prof Dale Bailey, Ms Kunthi Pathmaraj, Prof Barry Ellison, Ms Heather Patterson, A/Prof Monica Rossleigh, Prof Harvey Turner, and Immediate Past President of the ANZSNM, Ms Elizabeth Bailey.

The next four years will be an exciting time, as we have the opportunity to further engage with our overseas colleagues in promoting Molecular Imaging and Therapy, assist with teaching and training programs, and developing (in conjunction with major Societies) initiatives that lead to improved access of patients globally to Nuclear Medicine procedures.

In addition to these activities, a WFNMB Congress is held every four years, and the 2018 Congress will be held at the Melbourne Convention and Exhibition Centre, Victoria, Australia. This will be an exciting event, bringing together scientists, clinicians, technologists, nurses and researchers engaged in Molecular Imaging research and clinical practice, and in radionuclide-based therapy. It is anticipated that over 2,000 attendees will come to the 2018 Congress, which will be held in conjunction with the 48th Annual Scientific Meeting of the ANZSNM from April 20-24, 2018.

Sze Ting

The Mexican and Australian Team with the World Federation Bell at the Closing Ceremony. From Left to Right: Luis Vargas, Gisela Estrada, Outgoing President Enrique Estrada Lobato, incoming President Andrew Scott, incoming Secretary-General Sze Ting Lee and Peter Collins.

Whole Body FDG-PET/CT imaging in a pregnant woman – is it safe?

J. Welch, P.U., S Berlangieri, S.T. Lee, K. Pathmaraj, A. Scott

Background

Due to the radioactive nature of Nuclear Medicine imaging, it is usual practice to avoid it in pregnant patients. However, pregnancy need not be considered a contradiction for nuclear medicine procedures, provided there are strong clinical justifications.

Recently we received requests for PET/CT imaging for two pregnant women with malignant disease for staging. The indications for these patients were: (I). cervical lymph node with biopsy proven SCC of unknown primary and (II). past history of melanoma presenting with brain metastases. Neither of these patients had CT imaging prior to PET imaging. After careful consideration, the decision was made that there was sufficient medical justification to proceed with the PET/CT studies.

Aim

To develop a PET/CT protocol for pregnant patients that delivers the lowest possible radiation exposure to the foetus whilst providing a diagnostic quality image. In addition, calculate the radiation exposure to the foetus so potential foetal adverse effects can be taken into consideration.

Methods

For both patients, the following factors were considered: would the PET/CT scan provide the required information, are alternative tests available, gestational age of the foetus, estimated radiation exposure and potential radiation risks to the foetus.

In both instances, consensus was reached that PET/CT scan was the best modality to stage their disease. The Radiation Safety Officer calculated the estimated absorbed dose to the patient and foetus based on an altered PET/CT protocol that involved a low dose CT (120kV, 50mAs) and administration of 100MBq of ^{18}F-FDG. The estimated absorbed dose was calculated using Monte Carlo software (CT-Expo V 2.2) and ICRP publication 106 (Radiation Dose to Patients from Radiopharmaceuticals, October 2007).

Results

The estimated absorbed dose to the foetus was calculated as ~6.5mGy when utilizing the altered PET/CT protocol. Of the 6.5mGy total dose to the foetus, the low dose CT contributed 4.6mGy and the administered ^{18}F-FDG contributed to the remaining 1.98mGy. According to the IRCP106 publication, this translates to a 0.3-0.4% chance of the child developing cancer from this procedure and *"malformations due to radiation probably do not occur at fetal doses less than 100–200 mGy"*.[1]

Discusion

The average radiation exposure to the foetus, when using the altered PET/CT protocol is 6.5mGy. Currently, there are few papers available on this topic, however a study completed by Takalkar et. al estimated the foetal dose from ^{18}F-FDG to be in the range of 1.1 – 2.43mGy. Takalkar et. al administered 173.9 - 340.3 MBq of ^{18}F-FDG to their pregnant patients and utilised a stand-alone PET scanner. Our results are supported by the findings of Takalkar et al who concluded from their study that the radiation dose from ^{18}F-FDG PET studies is "quite low and significantly below the threshold for deterministic effects due to radiation exposure to the foetus".[2]

However, as the low dose CT contributes to the majority of the radiation dose to the foetus, we aim to further investigate the CT parameters used and determine if it is possible to further reduce the radiation exposure to the foetus while maintaining quality diagnostic information provided by the CT. One possible method to achieve this is to increase the pitch from 0.83 to 1. This would reduce the absorbed dose to the foetus to 3.8mGy.

Conclusion

In both instances where the FDG-PET/CT scan was performed, the benefits of staging with PET/CT outweighed the risks of foetal radiation exposure and the scan findings provided information to the referring oncologists, which significantly impacted on the patient's subsequent management.

Case Study

38-year-old female, 28 weeks pregnant, presents with L cervical mass with biopsy proven SCC. No other imaging had been performed.

The patient fasted for six hours and was orally hydrated prior to the commencement of the study.

PET parameters:

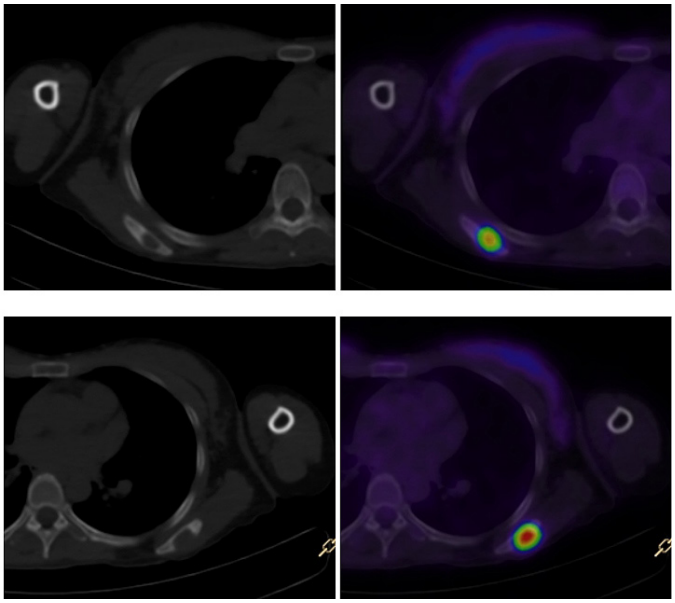
- ^{18}F-FDG administered: 100MBq
- Scanner: Philips Ingenuity TF128
- PET emission: 3 minutes per bed

Low dose CT parameters:

kV	120
mAs	50
Rotation time	0.5 sec
Pitch	0.83
DPL	329 mGy.cm
Reconstruction	Iterative

	Absorbed dose to foetus (mGy)	Effective dose to mother (mSv)
Low Dose CT	4.6	5
100 MBq ^{18}F-FDG	1.8	1.9
Total	6.4	6.9

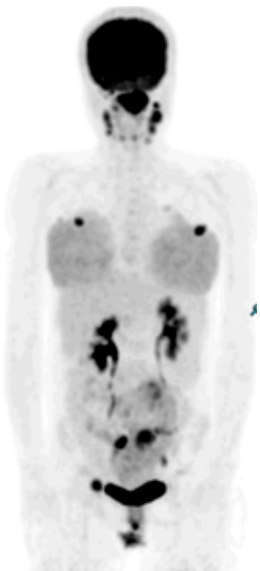
Table 1: Estimated radiation exposure from procedure



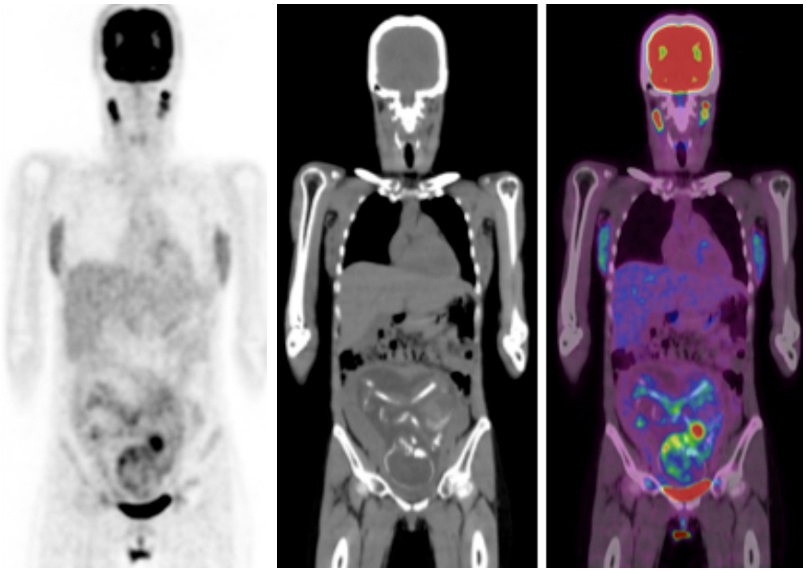
Focal FDG uptake in both scapula tips corresponds to sites of cortical erosion, suggestive of metastatic disease.

Results

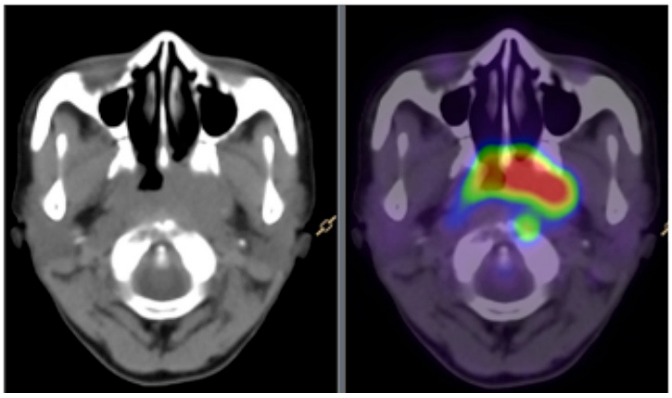
The FDG PET/CT scan findings were consistent with a large, locally invasive nasopharyngeal carcinoma, with probable involvement of the adjacent base of skull, as well as bilateral cervical nodal metastases and bony metastases.



3D Volume

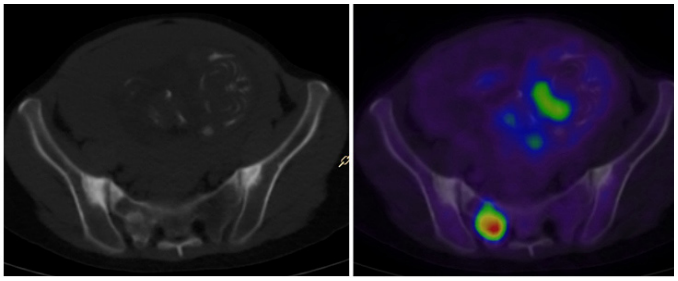


The uterus is enlarged and contains a single foetus.

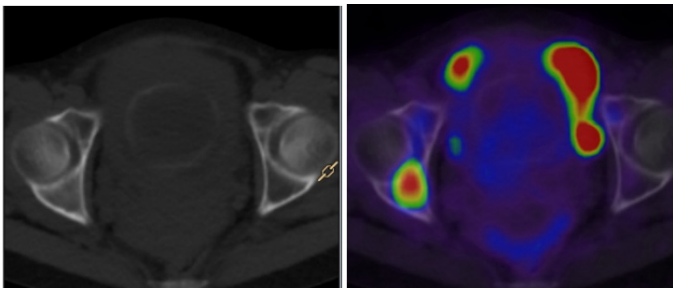


Intense FDG uptake in a large soft tissue mass in the nasopharynx.

Erosion of the left base of the skull adjacent to the mass.



Additional sites of abnormal FDG uptake in the right sacrum and right posterior acetabulum correspond to sclerotic change in bone.



Plan & Outcome

The Oncology team recommended delivery of the baby at 34-36 weeks gestation with chemo-radiotherapy to commence 1 week postpartum, if the patient remained stable. If clinical progression occurred, the plan would be to commence chemotherapy and then deliver the baby early.

The patient refused all treatment options and delivered a healthy baby girl at full term.

References

1 ICRP publication 106: Radiation Dose to Patients from Radiopharmaceuticals, October 2007.

2 ^{18}F-FDG PET in Pregnancy and Fetal Radiation Dose Estimates. Amol M. Takalkar , Alok Khandelwal, Stephen Lokitz, David L. Lilien and Michael G. Stabin. J Nucl Med July 1, 2011 vol. 52 no. 7 1035-1040

CHANGES TO PDY PROGRAM: November 1, 2014

Dear Members,

The Medical Registration Practice Board of Australia (MRPB) have released the Ministry endorsed Supervised Practice program to be overseen by the MRPB. This is due to commence 1st November 2014 and will replace the existing ANZSNM PDY program. The MRPB will continue to endorse the ANZSNM PDY program through to end of March to allow existing PDY's to complete the program.

There are a few things of importance in the new program:

- The 1:1 ratio has been removed however there are clauses in the document to ensure adequate and appropriate supervision at all times and the provision that the supervised practitioner cannot work as a sole practitioner;
- Only graduates of approved 3-year undergraduate programs and Masters programs' will be required to complete a supervised practice period. Graduates of approved 4-year programs will be eligible to apply for full registration;
- It is essential that the principal supervisors at each site read the attached documents thoroughly and have an understanding of their responsibilities in relation to both the supervised practitioner and the board;

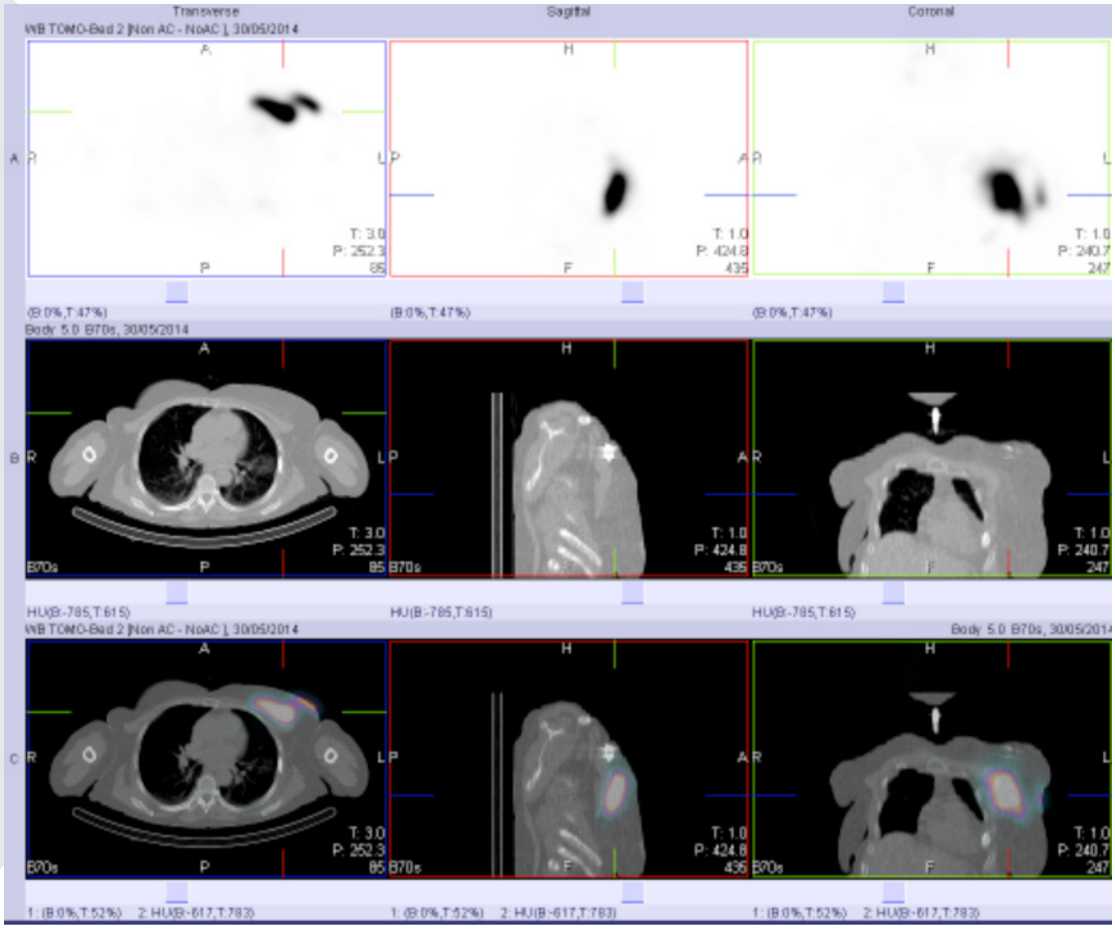
Please peruse these documents through the ANZSNM website and feel free to provide comments or concerns to the Secretariat or your State TSIG representative.

1. Medical Radiation Practice - Registration Standard - Supervised Practice
2. Medical Radiation Practice - Guideline - Provisional Registration
3. Medical Radiation Practice - Guideline - Supervised Practice

Regards
Liz Bailey
Chair TSIG

What's that? ... answer

From page 13



A large area of isotope uptake was noted in the left anterior chest. A SPECT/CT scan was obtained for localisation of this collection.

Accumulation of isotope is seen in the anterior left chest wall adjacent to the infusaport. It was decided that this represented leakage from the port into the chest wall.

The patient returned to the Holman Clinic, where some soft tissue swelling in the anterior chest wall was noted. The infusaport has been corrected, and is currently in good working order.

Bones, groans and zones

Marcia Wood

Clinical History

A 74-year-old lady with a painful left hip for investigation. A three phase bone scan was performed, and proceeded to whole body imaging to investigate a systemic condition after multiple focal lesions were found on delayed planar images. Multiple focal lesions of increased activity are demonstrated throughout the ribs, sacrum and proximal left femur, as shown in the key images below.

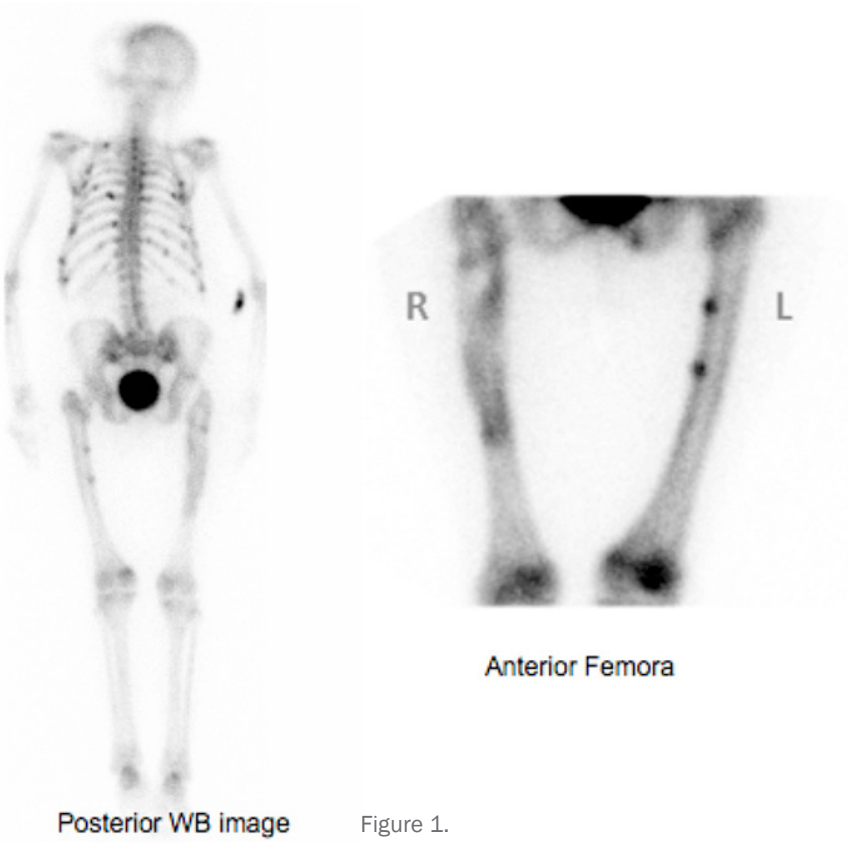


Figure 1.

Case Discussion

Correlation with the patients x-ray, revealed Looser's zones in the left femur corresponding to the increased uptake. Looser's zones or pseudofractures are unmineralised areas as a result of rapid resorption and slow mineralisation which generally run perpendicular to the bone cortex and may be surrounded by a collar of callus formation when fractured (Krane & Holick, 1994, 2178).

The combination of bone scan appearance and x-rays findings in this case were able to confirm the diagnosis of osteomalacia. Further investigation revealed the patient to be vitamin D deficient. Osteomalacia is can be difficult to diagnosis and a metabolic scan appearance, particularly with pseudofractures often creates the diagnosis. The characteristic metabolic bone disease scan may also be seen in these patients. (Ryan, 1998). Osteomalacia has number of causes such as hyperthyroid induced osteopenia, vitamin D deficiency, gastrointestinal or biliary disorders, fibrous dysplasia and renal osteodystrophy (Holick, Krane & Potts, 1994, p. 2152).

Hypercalcemia as a result of renal osteodystrophy tends to be medically managed using bisphosphonates and calcitonin, as does non-vitamin D related osteomalacia (Krane & Holick, 1994, p. 2163; Holick, Krane & Potts, 1994, p.2181). Osteomalacia as a result of vitamin D deficiency is usually treated with oral vitamin D supplements (Holick, Krane & Potts, 1994, p.2181). Bisphophonates act as osteoclast inhibitor, whilst calcitonin acts on receptors on the osteoclastsm causing a decreased release of skeletal calcium, phosphorus and hydroxyproline (Krane & Holick, 1994, p. 2163.).

References

Holick, MF, Krane, SM, Potts, JT Jr., (1994), "Disorders of bone & mineral metabolism", In Isselbacker, KJ, Braunwald, E,

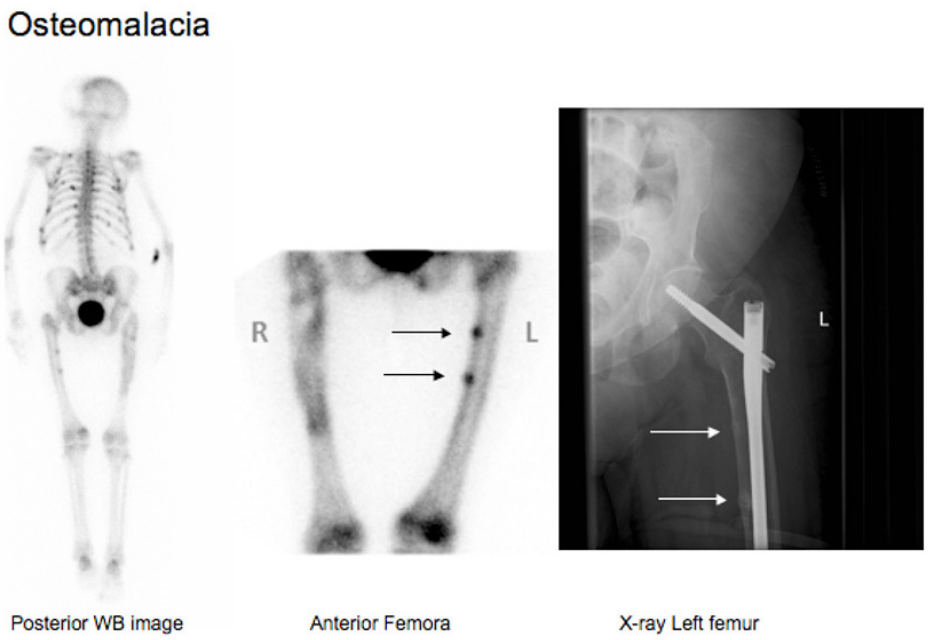


Figure 2: Whole body bone scan reveals numerous hot spots through the ribs, sacrum and femora. There is evidence of an acute intertrochanteric fracture. Anterior Femora image demonstrates 2 areas of increased uptake confined to cortical bone. X-ray confirms the presence of Looser's zones, confirming the diagnosis of osteomalacia. (Images courtesy of Dept. Nuclear Medicine and Dept. of Radiology, Austin Health. Accessed 2 May 2009).

Wilson, JD, Martin, JB, Fauci, AS & Kasper, DL (eds) *Harrisons's Principles of Internal Medicine* (13th ed). St Louis, McGraw-Hill. Vol. 2, pp. 2151-2165.

Krane, SM & Holick, MF, (1994), "Metabolic Bone Disease", In Isselbacker, KJ, Braunwald, E, Wilson, JD, Martin, JB, Fauci, AS & Kasper, DL (eds) *Harrisons's Principles of Internal Medicine* (13th ed). St Louis, McGraw-Hill. Vol. 2, pp. 2171-2183.

Krane, SM, (1994), "Paget's Disease of Bone", In Isselbacker, KJ, Braunwald, E, Wilson, JD, Martin, JB, Fauci, AS & Kasper, DL (eds) *Harrisons's Principles of Internal Medicine* (13th ed). St Louis, McGraw-Hill. Vol. 2, pp. 2190-2193.

Ryan, PJ (1998), "Orthopaedic Manifestations of Systemic Disease", *Seminars in Nuclear Medicine*, vol. 28, no. 1, pp124-131.

^{18}F-FDG Avidity in Radiation-induced Hepatitis on PET/CT

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Phone: (03) 9928 8897; Fax: (03) 9928 8890; email: mylinh.diep@monashhealth.org

Abstract
Background: Radiation-induced liver disease, also known as radiation-induced hepatic injury, is a potential radiotherapy-related complication. Documented cases of RILD include radiation-induced hepatitis and radiation-induced hepatitis B virus reactivation.
Aims: 1.To report an incident of ^{18}F-FDG avidity in acute focal radiation-induced hepatitis found on PET/CT; 2.To provide a literature overview on radiation-induced hepatitis in PET/CT.
Methods: Case report and literature review.
Results: A 71-year-old male was diagnosed with DLBCL with the largest mass adjacent to the inferior vena cava. The patient underwent chemotherapy. Mid-treatment assessment with PET/CT showed an overall good response. A post treatment PET/CT study showed small volume nodal recurrence. The patient then commenced IFRT. Subsequent PET/CT assessment demonstrated a poor response of nodal disease to the treatment with incidental increased metabolic activity in the caudate lobe of the liver. After reviewing the IFRT treatment field the possibility of focal radiation-induced hepatitis was raised. Follow-up PET/CT at six months post-RT showed resolution of uptake in the caudate lobe of the liver, which would fit with the reported suspected acute focal radiation-induced hepatitis. Radiation-induced hepatitis in itself is uncommon; with a handful of well documented cases in the literature. There are very few reports of focal radiation induced hepatitis demonstrated on PET/CT.
Conclusion: We present a case of focal acute radiation-induced hepatitis demonstrating avidity of ^{18}F-FDG on PET/CT. This case highlights the importance of careful interpretation of PET/CT studies and the pertinence of access to such information as exact RT treatment fields so as not to confuse hepatic injury with other disease processes.

Keywords: radiation-induced hepatitis; hepatic injury; ^{18}F-FDG

Case Report

Background: Radiation-induced liver disease (RILD), also known as radiation-induced hepatic injury, is a potential radiotherapy-related complication. RILD is characterised by veno-occlusion with damage of the terminal hepatic venules, resulting in post-sinusoidal obstruction.[1] Documented cases of RILD include radiation-induced hepatitis and radiation-induced hepatitis B virus reactivation.[3] These presentations can make interpreting 18Fluorine-Fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography (PET/CT) scans for therapeutic response more difficult.
Aims: 1.To report an incident of ^{18}F-FDG avidity in acute focal radiation-induced hepatitis found on PET/CT; 2.To provide a literature overview on radiation-induced hepatitis in PET/CT.
Methods: Case report and literature review.
Results: A 71-year-old male was diagnosed with diffuse large B cell lymphoma (DLBCL) with the largest mass adjacent to the inferior vena cava (IVC).

DLBCL is the most common form of non-Hodgkin lymphoma and generally responds well to combination chemotherapy. The patient underwent treatment of rituximab with cyclophosphamide,

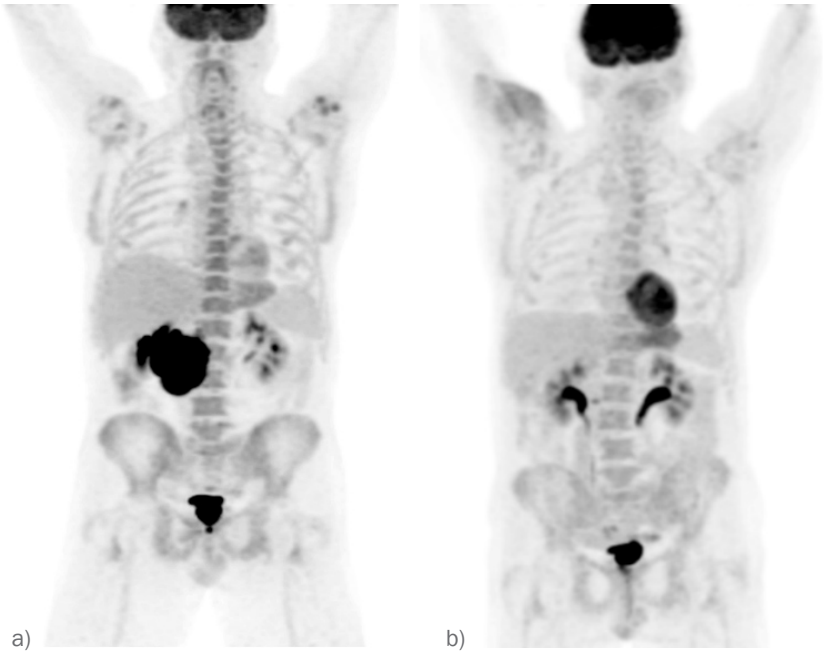
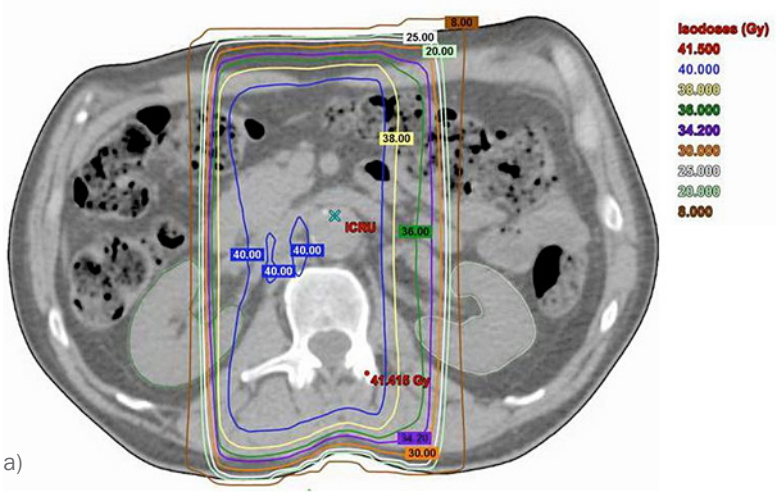
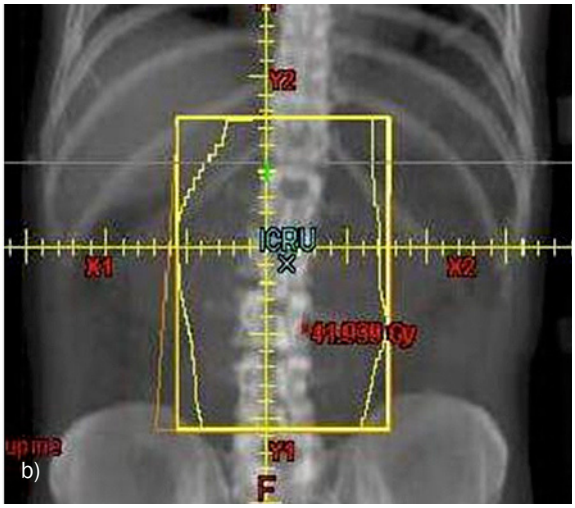


Figure 1. a) PET MIP pre-chemotherapy to stage DLBCL; b) PET MIP post 6 cycles R-CHOP to assess therapy response.





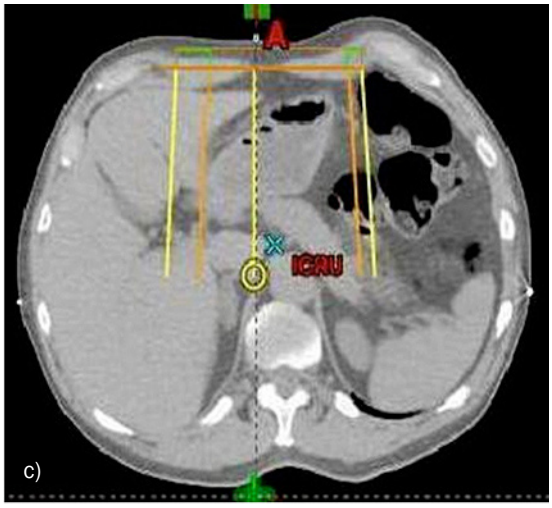


Figure 2:
a) Isodoses, expressed in Gy of IFRT, delivered through lumbar spine. The lines represent the dose area;
b) coronal view of IFRT beam delivered;
b) transaxial view of IFRT delivered to liver caudate lobe.

doxorubicin, vincristine, and prednisone (R-CHOP). CHOP by itself has been utilised to treat DLBCL for the last four decades.[5] The addition of anti-CD20 antibody rituximab to the chemotherapy drug combination was introduced only two decades ago.[5]

The patient's mid-treatment assessment with PET/CT showed an overall good response with some residual activity in the retroperitoneal nodes.

The patient then completed the remainder of the chemotherapy treatment. A post treatment PET/CT study, however, showed small volume nodal recurrence in the right retroperitoneal region at the L2/3 level. The patient then commenced Involved-Field Radiation Therapy (IFRT). A prescribed dose of 36 Gy was delivered to the lumbar spine over 20 fractions in the coronal and sagittal planes. Maximum isodose delivered to the liver caudate lobe was 41.5 Gy.

Subsequent PET/CT assessment demonstrated a poor response of nodal disease to the treatment with incidental increased metabolic activity in the caudate lobe of the liver. Contemporaneous CT did not reveal any abnormality to correlate with the noted liver uptake. After reviewing the IFRT treatment field the possibility of focal radiation-induced hepatitis was raised. Follow-up PET/CT at six months post-RT showed resolution of uptake in the caudate lobe of the liver, which would fit with the reported suspected acute focal radiation-induced hepatitis.

Radiation therapy plays a vital role in the treatment of stage I and II DLBCL with known bulky mass5. It is suggested that the radiation tolerance of the entire liver is 30-35 Gy, with acceptable toxicity if exposed to higher doses.[4] Radiation-induced hepatitis in itself is uncommon; with a handful of well documented cases in the literature. There are very few reports of focal radiation induced hepatitis demonstrated on PET/CT. More common are cases of radiation-induced hepatitis B virus reactivation after RT treatment of gastrointestinal malignancies, in particular hepatocellular carcinoma.[1] This phenomena appears to be a unique pathogenesis in Asia-Pacific carriers.[1,3]

The combination of PET/CT, R-CHOP and IFRT in the management regimen for DLBCL is relatively new.[4] More prominent in literature are incidents of radiation-induced hepatic injury found on computed tomography or magnetic resonance imaging.

Conclusion: We present a case of focal acute radiation-induced hepatitis demonstrating avidity of ^{18}F-FDG on PET/CT. This case highlights the importance of careful interpretation of PET/CT studies and the pertinence of access to such information as exact RT treatment fields so as not to confuse hepatic injury with other disease processes.

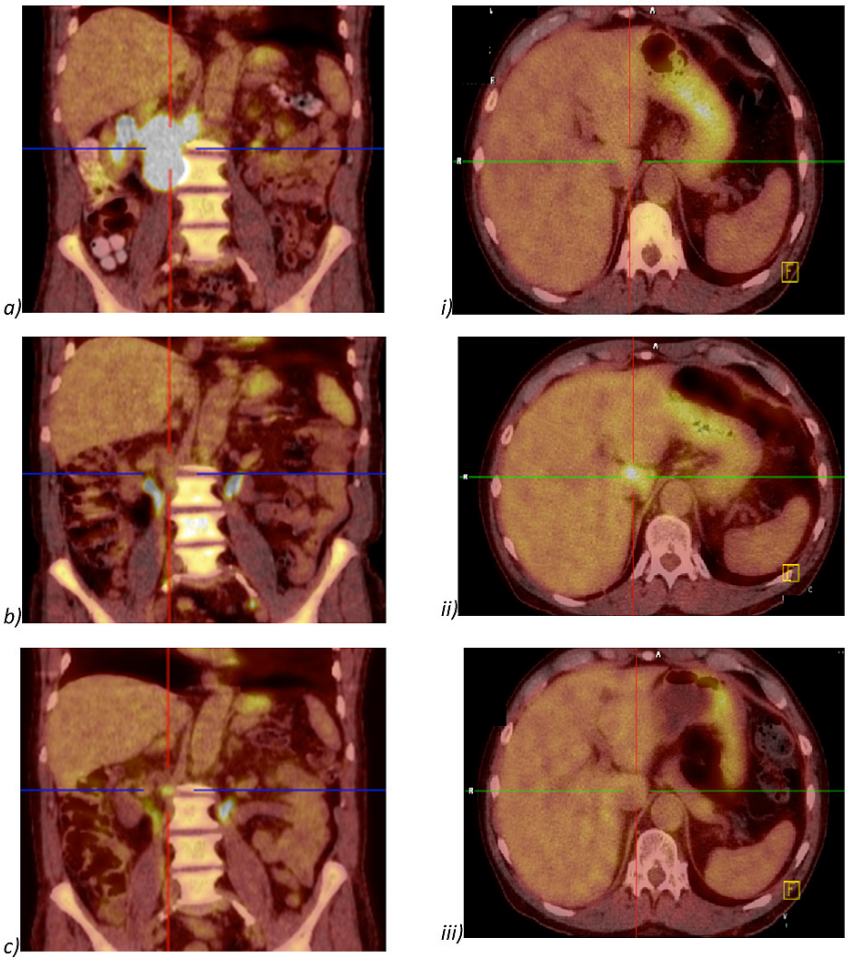


Figure 3.
PET/CT coronal view of DLBCL primary mass:
a) pre-RT scan demonstrates avid mass adjacent to IVC;
b) post-RT scan demonstrates good therapy response;
c) scan at six months post-RT demonstrates no recurrence of primary mass. PET/CT transaxial view of caudate lobe of the liver:
i) pre-RT scan demonstrates normal liver tissue;
ii) post-RT scan demonstrates non-specific focal increased metabolic activity;
iii) scan at six months post-RT demonstrates spontaneous resolution of increased uptake in the caudate lobe.

References

1. Chou CH, Chen PJ, Lee PH, Cheng AL, Hsu HC, Cheng JC. "Radiation-induced hepatitis B virus reactivation in liver mediated by the bystander effect from irradiated endothelial cells." *Clinical Cancer Research*. 2007 Feb 1;13(3):851-7.
2. Jennifer A Dorth, Leonard R Prosnitz, Gloria Broadwater, Anne W Beaven and Chris R Kelsey "Radiotherapy dose–response analysis for diffuse large B-cell lymphoma with a complete response to chemotherapy" *Radiation Oncology* 2012, 7:100
3. Lawrences TS, Robertson JM, Anscher MS, Jirtle RL, Ensminger WD, Fajardo LF, "Hepatic toxicity resulting from cancer treatment" *International Journal of Radiation Oncology*, Biology, Physics 1995;31: 1237-48
4. Moonkyoo Kong, Seong Eon Hong., Byung-Ho Kim, and Jinhyun Choi, "Three Cases of Radiation-Induced Hepatitis B Virus Reactivation after Hepatic Tomotherapy: Case Report" 대한방사선종양학회지 2011;29(1):53-62
5. Joachim Yahalom, "Radiation Therapy After R-CHOP for Diffuse Large B –Cell Lymphoma: The Gain Remains" *American Society of Clinical Oncology*; 2010: 4105-07

Many thanks to Peter MacCallum Cancer Centre for providing radiotherapy treatment data.

Australian and New Zealand Society of Nuclear Medicine