

Patients with significant asbestos exposure and symptoms present a different clinical problem and high resolution CT may well be indicated. However, these patients will have abnormal physical findings, spirometry and chest X-rays.

Safety

In Australia it is estimated that CT scans account for 65% of the population's medical radiation exposure.³ Chest or abdominal CT scans deliver an average dose of 8–10 mSv (compared to a chest X-ray which is 0.02 mSv) and the dose to the breast tissue during a chest CT might be over 30 mSv.^{4,5,6} The International Commission on Radiological Protection estimates the risk of inducing a fatal cancer as 6% per Sievert which means that the doses involved in chest CT examination would lead to a fatal tumour in one per 2500 scans. This risk is age-related and in children it may be as high as one in a few hundred.⁷ Clearly, chest CT scans need to be ordered with a careful analysis of the risk-benefit ratio.

Conclusion

Although CT of the chest is an extremely valuable investigation, it is much overused and is not without adverse effects. Being familiar with the different types of CT scans – conventional and high resolution – is important for doctors who order these tests as the two techniques have entirely different uses and indications. For example, high resolution CT scan may well miss a small pulmonary mass, but a conventional CT scan even on lung windows cannot reliably detect or assess interstitial lung disease or bronchiectasis.

References

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3. Wise KN, Thomson JEM. Changes in CT radiation doses in Australia from 1994 to 2002. *The Radiographer* 2004;51:81.
4. Rehani MM, Berry M. Radiation doses in computed tomography. *BMJ* 2000;320:593-4.
5. McCollough CH, Liu HH. Breast dose during electron-beam CT: measurement with film dosimetry. *Radiology* 1995;196:153-7.
6. Mayo JR. Radiation dose issues in longitudinal studies involving computed tomography. *Proc Am Thorac Soc* 2008;5:934-9.
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Further reading

Mendelson R, editor. Diagnostic imaging pathways. A clinical decision support tool and educational resource for diagnostic imaging [website]. Government of Western Australia, Department of Health. www.imagingpathways.health.wa.gov.au [cited 2009 Jul 14]

Conflict of interest: none declared

Self-test questions

The following statements are either true or false (answers on page 115)

7. Conventional CT scanning is the most appropriate technique for assessing bronchiectasis.
8. Small lesions in the lung are best detected using high resolution CT.

Patient support organisation

Myeloma Foundation of Australia

See articles on multiple myeloma on pages 92–4 and 95–8

The Myeloma Foundation is a volunteer-driven, non-profit organisation which supports and informs those living with the disease and educates those involved in its care and treatment. A telephone support line is staffed by myeloma support nurses. The Foundation runs seminars and workshops, support groups and health professional education. The website contains informative videos and fact sheets, links to a patient guide and a newsletter, and resources for health professionals such as the myeloma nurses' learning program.

Website www.myeloma.org.au

Myeloma support line 1800 693 566 (free call, Mon–Fri working hours)

eAudit – Proton pump inhibitors

An electronic clinical audit (eAudit) from the National Prescribing Service will soon be available to assist general practitioners in reviewing patients taking proton pump inhibitors (PPIs). This eAudit provides the opportunity to:

- identify patients with inadequate control of dyspepsia
- determine appropriate duration of PPI use for a range of clinical indications
- reflect on education provided to patients about lifestyle modification and rare but important adverse effects
- compare management to current guidelines, using the immediate feedback provided.

This eAudit is recognised for points in professional development programs and the Quality Prescribing Initiative of the Practice Incentive Program (May 2009 to April 2010).

Enrolments are open from the end of August 2009.

See www.nps.org.au/healthprofessionals