implemented and data is being collected for future re-auditing. Emphasising the management of adrenal incidentalomas through this audit could reduce discrepancies nationally and improve patient safety.

Molecular and functioning imaging

P-125 How can PET/CT amyloid imaging aid in the diagnosis of alzheimers disease?

Clare Moody; Louise Jordan
Newcastle Hospitals NHS Trust

Aim: How can functional imaging through Positron Emission Tomography (PET) aid in Alzheimers Disease (AD) diagnosis by detecting beta-amyloid neuritic plaques in the brain.

Content: Amyloid imaging for early AD diagnosis will be discussed in terms of its impact on the patient care pathway. A positive amyloid scan can increase the clinical certainty of AD whereas a negative scan can exclude AD from the diagnosis. Various radio-isotopes are available for use in amyloid imaging, although this focuses on 18F-florbetapir (AMYVID), which has FDA approval for clinical use.

Relevance: Amyloid imaging using PET/CT is a highly researched topic with several companies producing radio-isotopes. AD is a progressive and fatal neurodegenerative disease, early detection can increase the scope for improved management and treatment. Currently, clinical diagnosis may take up to 3 years and requires the patient to have onset of dementia. At this stage any treatments to reduce the build up and continued deposition of amyloid plaques may be too late, an early diagnosis could have a positive impact on the patient and also on NHS resources.

Discussion: Key issues concerning beta-amyloid imaging, voiced by the FDA and the Alzheimers Society, are image interpretation and inter-reader variability. Specific image interpretation training for all reporting clinicians has been introduced.

Studies are in progress on the use of these tracers as biomarkers of AD progression and to assess anti-amyloid therapies. It is hoped this will contribute to drug development in AD, provided that early responses to treatment are sensitive to changes detectable by PET amyloid imaging.

P-126 Optimising body CT imaging for SPECT.CT tumour isotope imaging

Davina Mak; Peter Strouhal; Peter Turner; Fiona Whittingham; Helen Balmforth
Royal Wolverhampton Hospital

Aims: Artefacts are often seen on body CT scans as part of whole body isotope SPECT.CT scans, including respiratory motion and related to air in bowel or air-surface interface artefacts. We looked at ways to minimise these and so optimise CT images from a diagnostic perspective with minimal patient impact.

Impact: CT images acquired for localisation and attenuation as part of whole body SPECT CT tumour isotope scan have greater potential to provide additional diagnostic information, with no additional radiation burden, by the implementation of some or all of these manoeuvres.

Outcomes: Reduction in bowel gas artefacts can be achieved with oral contrast in MIBG and Octreotide scans; soft tissue-air interface artefacts can be mitigated with wedges to subtly alter patient position and normal saline bags for parathyroid scans; respiratory movement artefacts is markedly improved using end-expiration in any chest scans.

Discussion: Minor additional patient preparation with minimal inconvenience for patients or staff produces a greater diagnostic yield from the CT component of SPECT.CT in any neck, chest and abdominopelvic scans. Minimal/no associated risks are seen, no compromise on scanning time encountered and only a minimal increase in staff involvement required.

P-127 "New clear" hybrid imaging for pulmonary emboli

Peter Strouhal; Peter Turner; Helen Balmforth; Fiona Whittingham
Royal Wolverhampton Hospital

Aims: To propose updated (hybrid) imaging algorithm for the detection of pulmonary emboli.

Content: Quick review of development of VQ planar imaging into SPECT and to illustrate how Q SPECT alone can be used as a gatekeeper for CTPA imaging; subsequently detailing a new technique of integrating this with CTPA images

(performed on same scanner or fused later), when needed, to identify only clinical relevant pulmonary emboli. Can also use Q SPECT to evaluate which PE identified on CTPA might be clinical relevant.

Impact: To streamline referrals for PE imaging, to reduce delays from non-diagnostic VQ or CTPA scans, to reduce negative PE detection rate from CTPA and avoid false positives as much as possible; to reduce the reliance on ventilation isotope imaging, which often limits the availability of VQ scans, so reduce costs.

Outcomes: Small numbers of patients only put thru this algorithm to date but >95% correlation between positive Q SPECT and CTPA; no patients with discordant Q SPECT and CTPA who were watched rather than treated proved to have PE; CTPA reduced referrals with improved rate of positive findings.

Discussion: Clear advantage to have a gamma camera with CT capability rather than separate scanners; need a nuclear medicine department but Q SPECT is more reproducible and more straightforward a technique than perhaps appreciated; need dedicated staff and fusion software to deliver the final outcomes/imaging.

P-128 **Breast cancer: The curious incidence of the hot head on the bone scan**

Katherine Klimczak; David Little; Nicholas Ridley; Sarah Taylor
Great Western Hospitals NHS Foundation Trust

Aims/objectives: To present the range of normal skull appearances on 99m-Technicium bone scintigraphy.
To highlight the causes for increased uptake within the skull on bone scans in breast cancer patients

Content: This pictorial review will display a selection of normal bone scintigraphy images alongside the varying pathologies we have encountered in our institution over the last 5 years to highlight the causes for a 'hot head' on a bone scan in female patients with breast cancer.

Relevance/impact: Whole body 99mTechnetium methylene diphosphonate (99mTc MDP) bone scintigraphy is used commonly in patients with breast cancer for the early detection and staging of bone metastases. Bone scintigraphy is not without limitation and can give false-positive results in the presence of benign bone lesions that show increased osteoblastic reaction. It can also give a falsely reassuring negative result if the metastases present are not metabolically active enough to cause sufficient uptake.

This poster will focus on the causes of increased uptake within the skull on the bone scan and alert the reader to the potential for the possible alternative diagnoses than metastatic disease. The various pathologies we have encountered in our institution over the last 5 years include; metastases, Paget's disease, hyperostosis frontalis interna, previous craniotomy, benign bone lesions and sinus disease.

Discussion/conclusion: As bone scintigraphy remains a valuable tool in assessing the presence and extent of bone metastases in breast cancer, Radiologists must be aware of the other causes of increased skull uptake to ensure the accuracy of their reports.

Innovation in service delivery

P-129 **The art of rejection**

Nicholas Taylor
Great Western Hospitals NHS Foundation Trust

The presentation will explore how film rejection data from Computed and Digital Radiography (CR/DR) systems can be customised by the user and provide examples on how data collected from nine Fuji CR/DR workstations has been adapted, customised and standardised with analysis performed every monthly. Data from all workstations is exported as Excel spreadsheets along with jpegs of rejected images via data stick to a central data hub and amalgamated to a central spreadsheet allowing month on month comparisons between readers and departments as well as the main rejection criteria, namely, positioning errors, exposure errors and patient identification errors.

The analysis of the data has allowed trends between workstations, and departments to be tracked, as well as indicating areas for improvement/training needs, particularly when combined with the ability to review rejected images on the workstations at the time of data collection.

Exported jpegs permit a traditional review of overall image quality and rejection criteria as used with plain film. The benefit of the image being digital is that it can be reviewed on any PC, at any time, without the problems of storage, manual handling and disposal experienced before the advent of digital imaging in radiography.