

Case Studies in PET & PET-CT



Dr Nat Lenzo *BMedSc(Hons) BSc MMed FRACP*
Head: WA PET/Cyclotron Service, Sir Charles Gairdner Hospital &
Dept. of Nuclear Medicine, Royal Perth Hospital
Founding Member: Australian Institute of Radiochemical Engineering
Assoc. Prof: Edith Cowan University, Perth, Western Australia

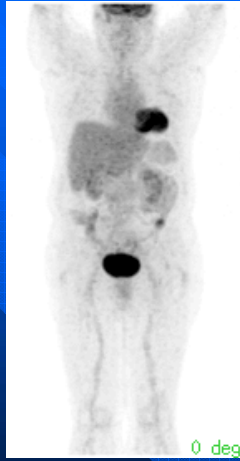


Case Study 1.

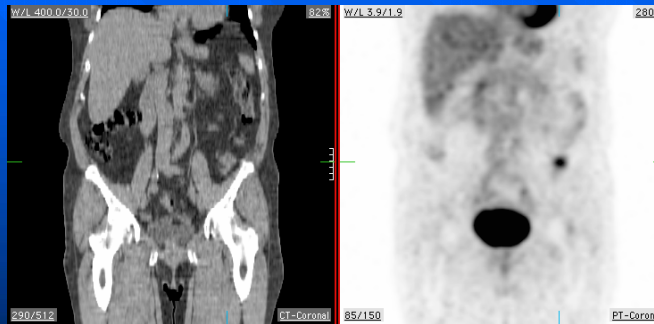
- 55 year old female
- Thyroid cancer, rising thyroglobulin
- Iodine scan negative
- ? Site of thyroid cancer recurrence



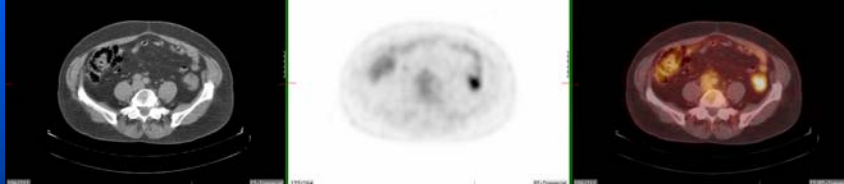
Case Study 1.



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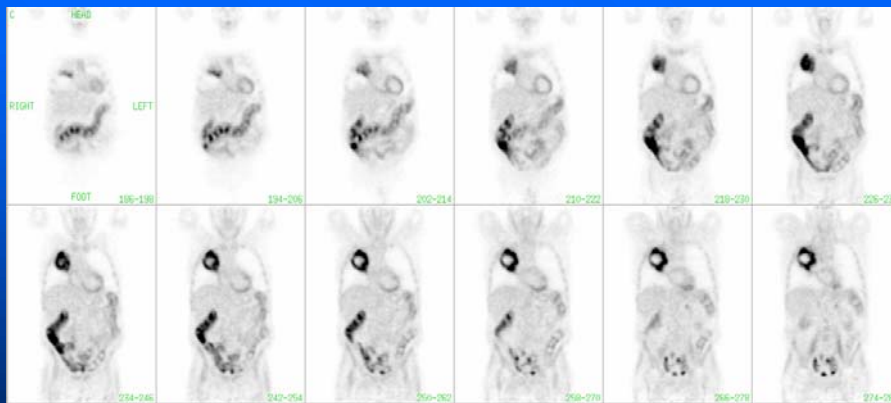
Case Study 1.



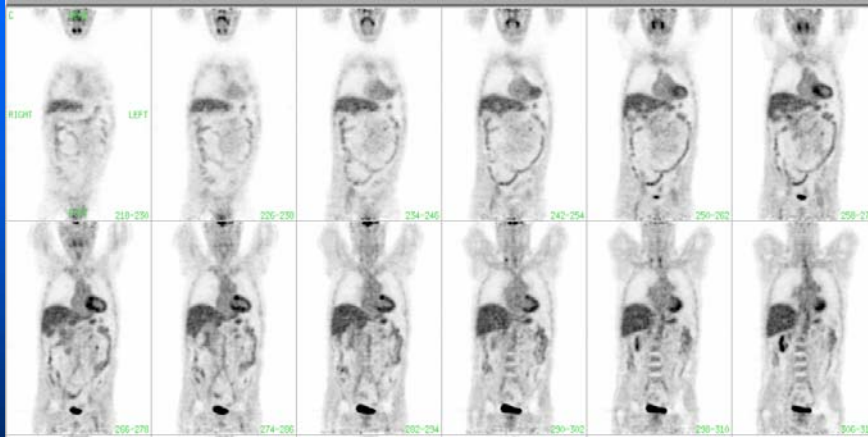
No evidence of FDG avid
thyroid cancer.
Incidental colonic cancer
confirmed at colonoscopy



Case Study 1.



Case Study 1.



Case Study 1.

■ TEACHING POINTS

- Colonic FDG uptake is variable
- Not really helped with buscopan and possibly worsened with laxatives
- Appears to be due to activity in muscular wall of bowel
- Focal intense uptake can however be seen in polyp or cancer and should be followed up

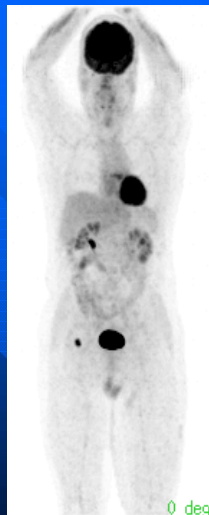


Case Study 2.

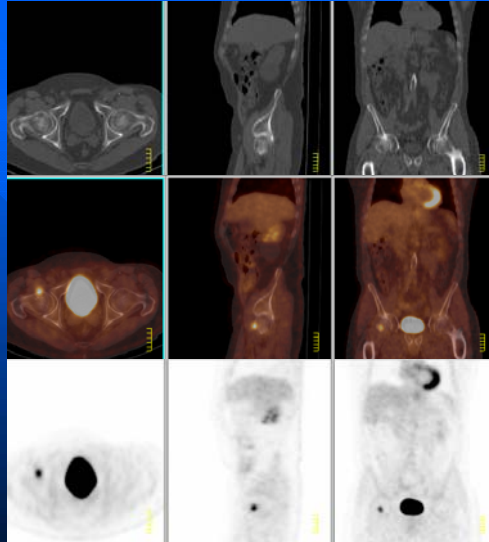
- 50 year old male
- Large high grade melanoma excised several years ago
- Presented 12 months ago with nodal recurrence - excised
- For surveillance PET scan



Case Study 2.



Case Study 2.



right femoral head
metastasis,
confirmed at
surgery

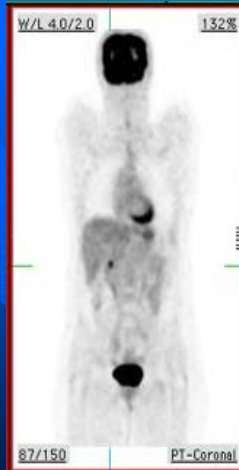


Case Study 3.

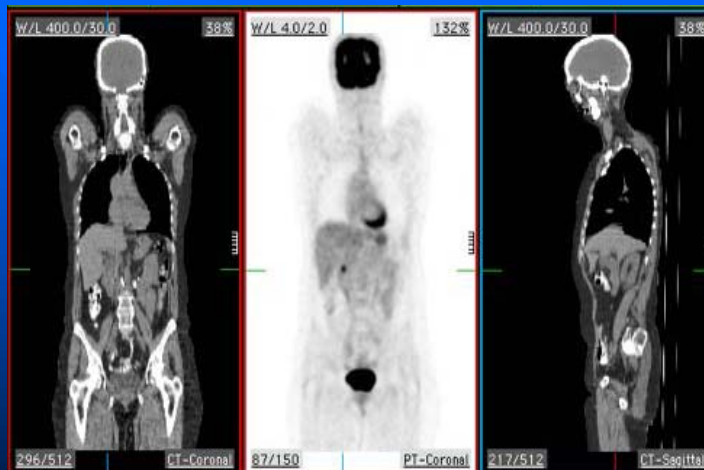
- 40 year old male
- Large high grade melanoma excised several years ago
- Asymptomatic
- For surveillance PET scan

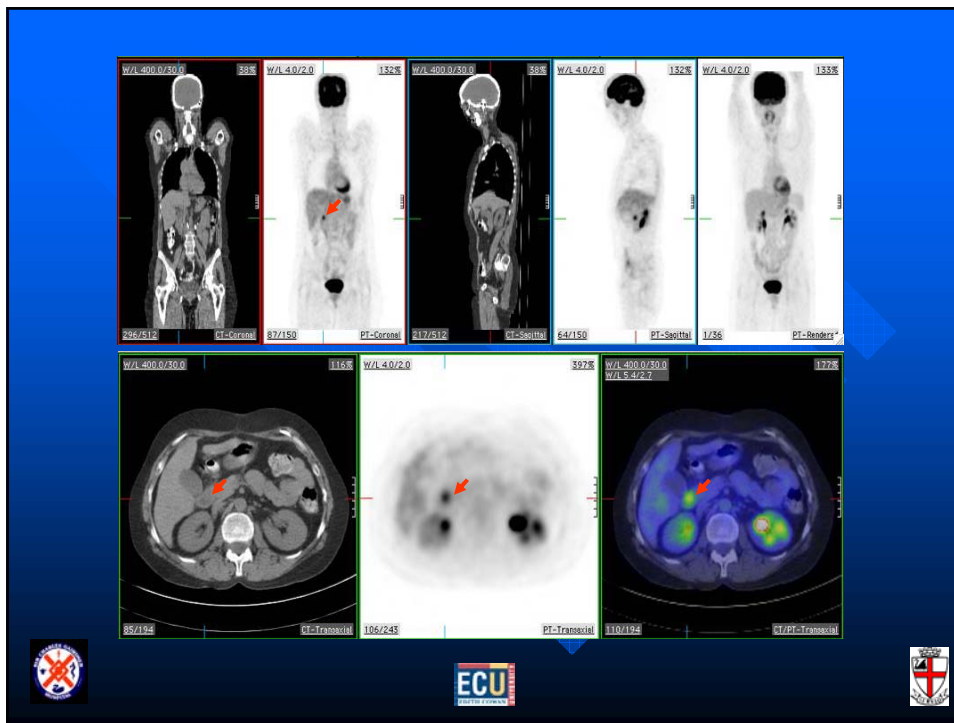


Case Study 3.



Case Study 3.





Case Study 2/3.

- TEACHING POINTS
 - **Melanoma can re-present anywhere, anytime**
 - **PET/CT improves accuracy of localisation**
 - » Benefits surgical planning

Case Study 4.

- 43 year old female
- Lymphoma
- Treated with systemic chemotherapy
- Repeat PET study 2 weeks after last cycle



Case Study 4.



Widespread marrow activation



Case Study 4.

- TEACHING POINT
 - **Important to time PET scan post-therapy**
 - » Post surgery and radiotherapy: inflammatory changes for few weeks
 - » Post chemotherapy: reactive marrow for few weeks
 - Scan prior to next cycle
 - » Post-GCSF: reactive marrow and hot spleen

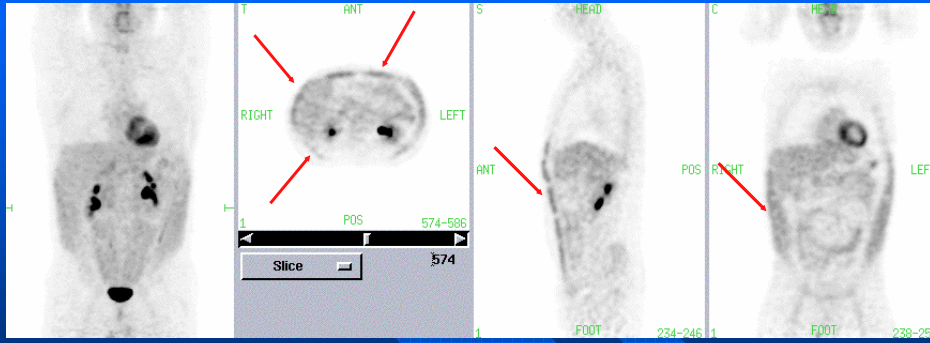


Case Study 5.

- 58 year old man
- Previous treatment of lymphoma
- Surveillance PET



Case Study 5.

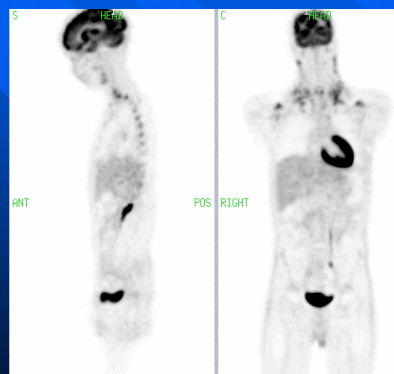


Abdominal Muscle Uptake after Sit-ups !

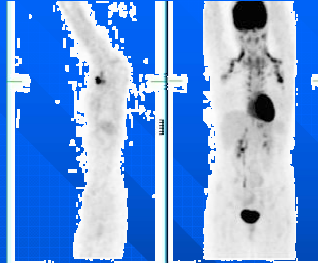


Case Study 6.

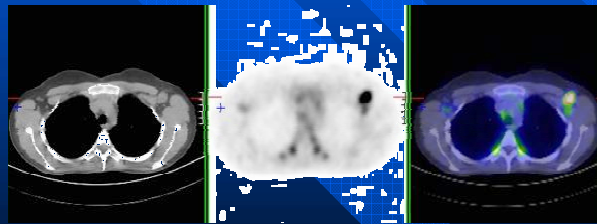
- 23 year old woman
- Staging of lymphoma



Case Study 6.



Lymphoma (axilla) +
brown fat activity



Case Study 5/6.

■ TEACHING POINTS

- **Ensure patients do not perform strenuous activity prior to PET study**
- **Beware brown fat**
 - » Cold conditions
 - » Young woman
 - » Does not improve with muscle relaxants
 - » May improve with warming
 - » PET/CT greatly improves accuracy of diagnosis



Case Studies in PET & PET-CT

■ SUMMARY

- Beware focal colonic uptake
- Melanoma can go anywhere: large FOV
- PET/CT improves localisation and surgical planning
- Important to time PET scan post-therapy
- No strenuous activity prior to PET study
- Brown fat: cold conditions, young woman, PET/CT improves diagnosis

