The key role of nuclear technology in medical diagnosis for: Infectious diseases

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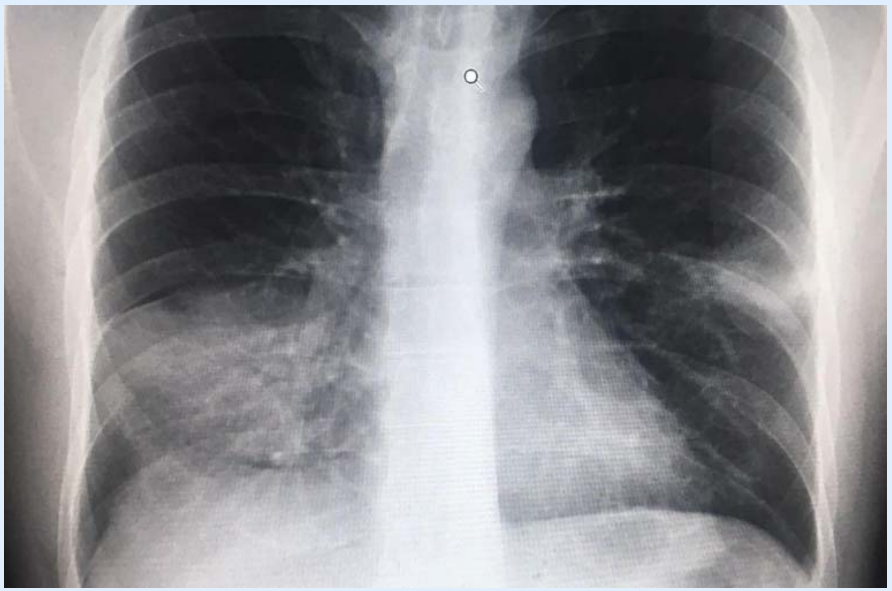
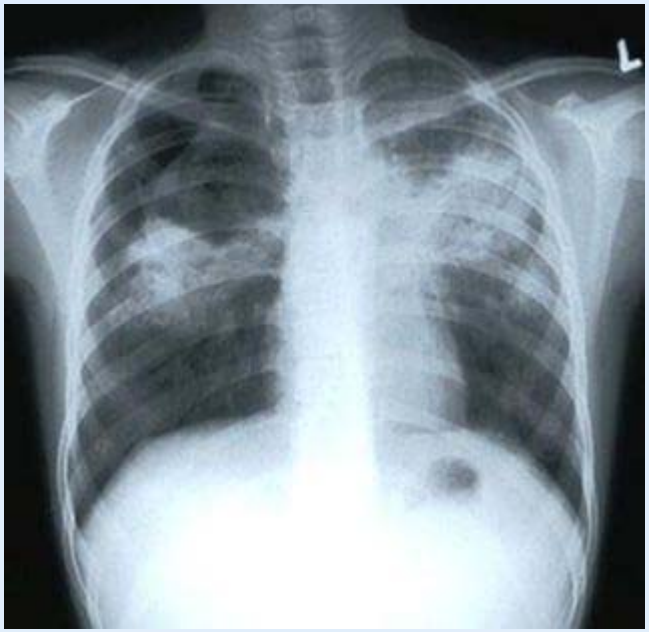
Nuclear Techniques in Human Health

Prevention, Diagnosis, Treatment

Elite v Mass availability

- Diseases and Challenges of the Rich/Elite are they different from the poor??





Infections

Infections: Pneumonia is top killer; followed by TB; diarrhoeal disease; Malaria

Antibiotic resistance and Multi-drug resistance are emerging challenges (beyond diagnosis and first-line treatment)

Some communicable diseases such as TB are resurgent due to migration

Challenges with Infectious Diseases

- Inflammation v Infection
- Healing v active infection
- Pain around prostheses after hip replacement surgery
- Fever of Unknown Origin
- Fungal Infections
- Super-infections
- Infection v Cancer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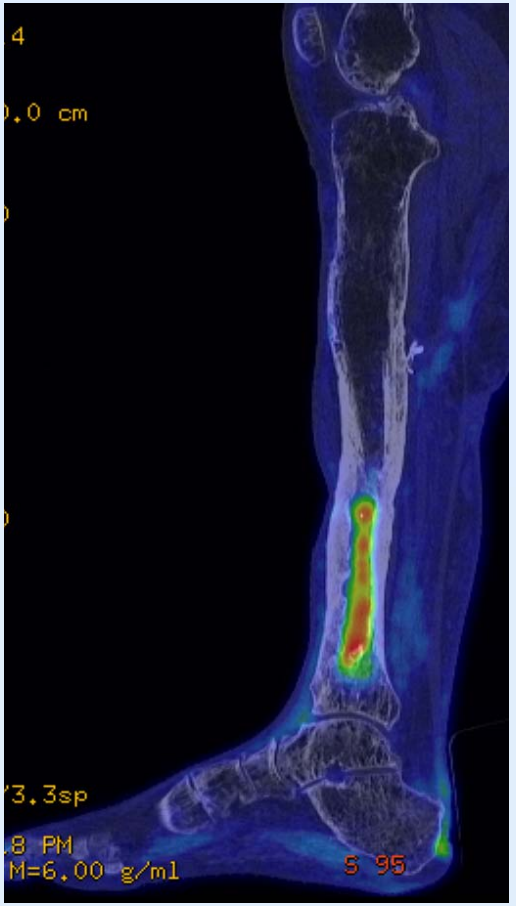
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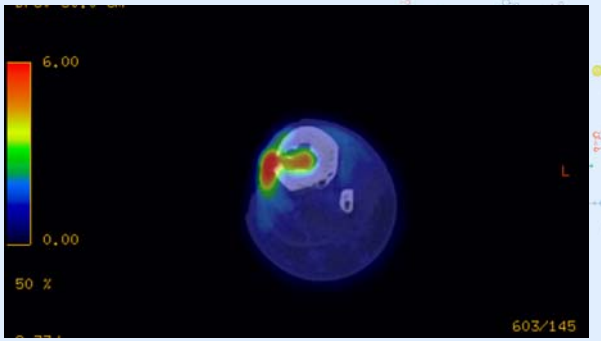
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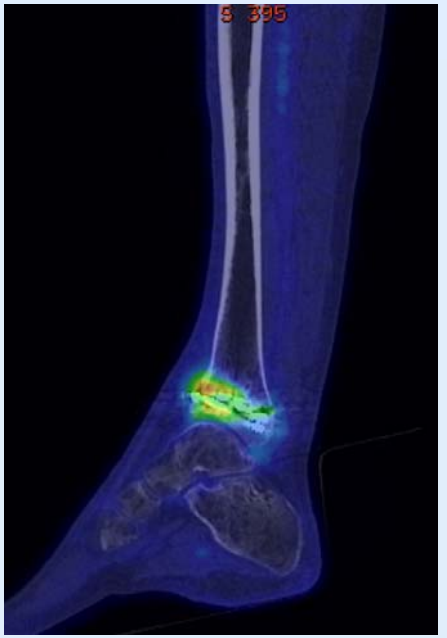
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Emerging Challenges

- Antibiotic resistance
- Multi-drug resistance
- Diseases attributed to migrations

Infection in migrants/refugees

Unique health needs

Access typically only to basic infrastructure

Basic nutrition and health needs contribute to compliance with treatment, prognosis

Poor immunisation cover/history

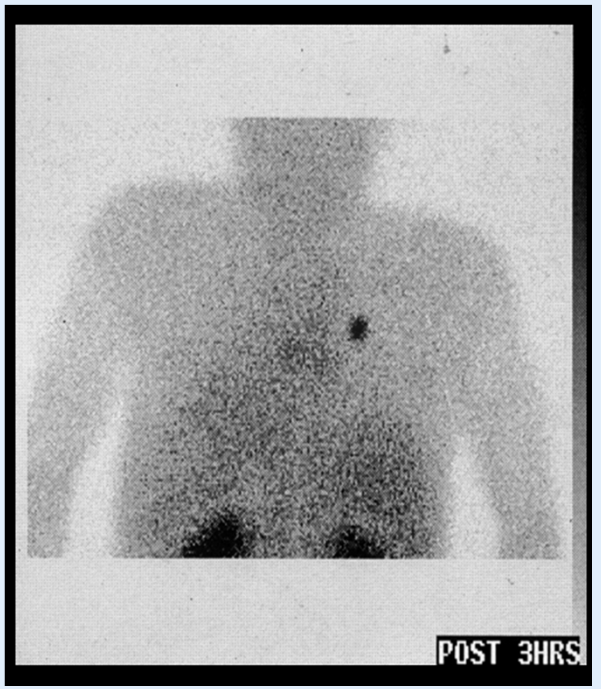
Undiagnosed Diabetes/Hypertension

Imaging: Migrants and refugees

- Imaging more akin to “screening” rather than “diagnostic”, because of possible unknown chronic conditions
- Correlation of imaging with history and biochemistry/microbiology big challenge
- Multi-system and multi-disciplinary approach required; if necessary some expertise can be provided remotely via tele/video conferencing

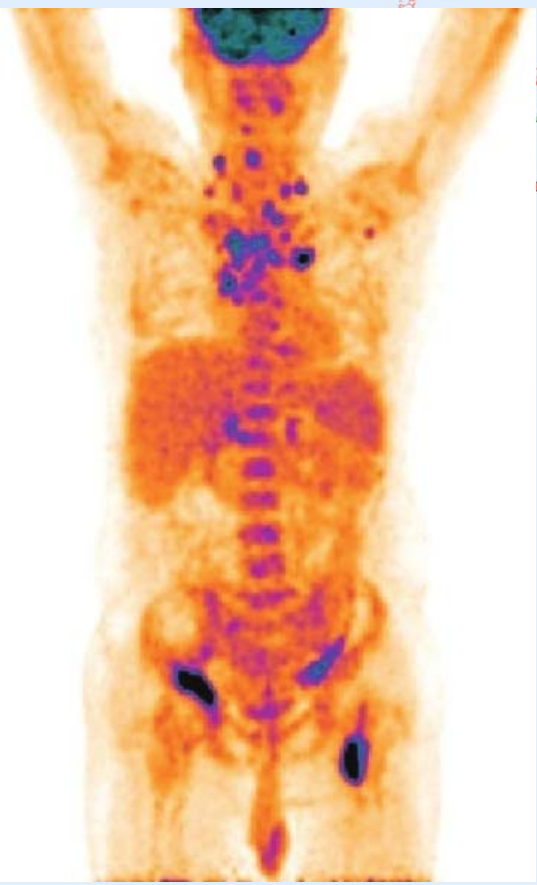
Imaging in Infections

- Plain film
- Ultrasonography
- Isotope scanning with Tc99m kits
- CT scanning
- PET-CT scanning



Infection and PET-CT

- First line in PUO/FUO?
- Infection v Cancer in Lung/Lymphoma…
- Surgical treatment planning
- New more specific molecules (Molecular Imaging)
- MDR-TB (multi-drug resistant TB)
- IAEA CRP on MDR-TB and PET-CT



Thank you