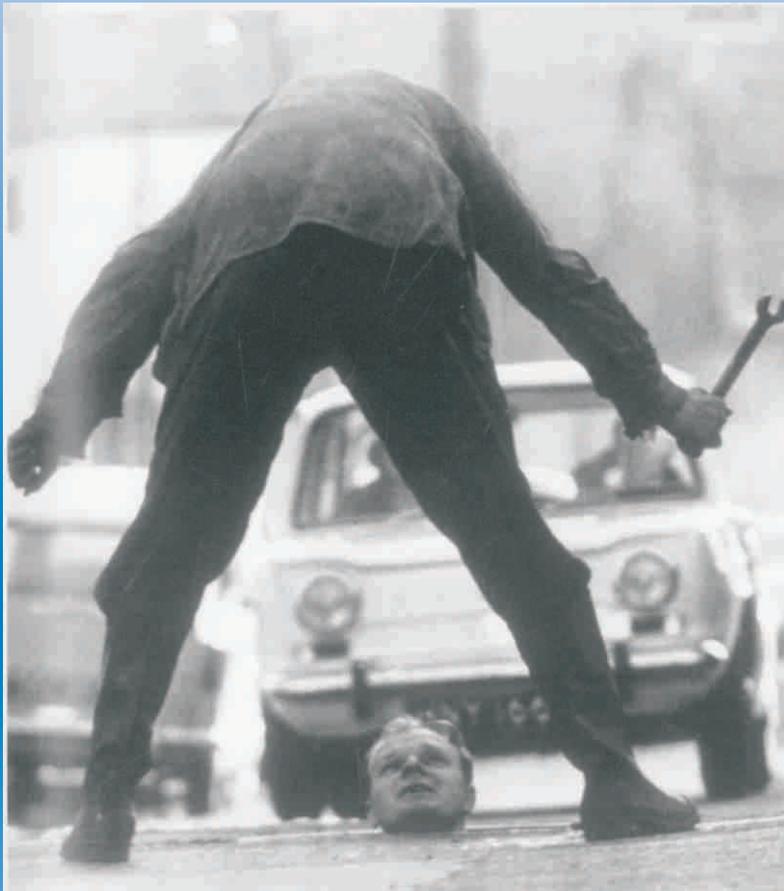


# Scintillations



If everyone is thinking alike  
then somebody isn't thinking.  
- General George S. Patton

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## Case7. PET in Bone infections

Contributed by :

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Fig. 7A.



Fig. 7B.

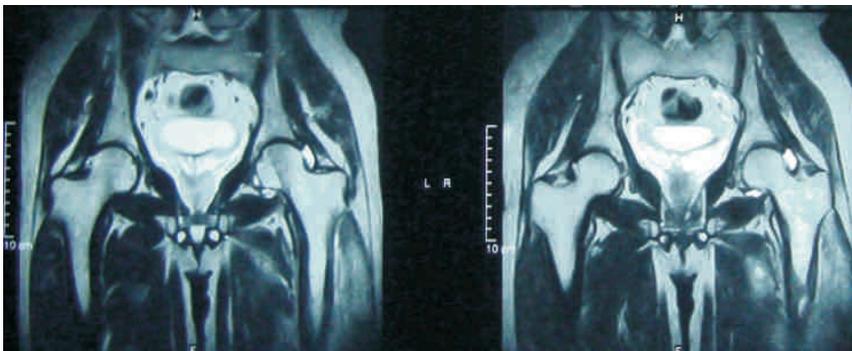


Fig. 7C.

A 32 years old gentleman complained of pain in the left hip and left thigh lasting several weeks. There was associated history of low grade fever. Plain radiograph shows minimal increase in density of the left femur. (Fig 7A)

An MRI revealed bone marrow oedema. (Fig 7B and 7C)

Three phase bone scan revealed normal first phase, minimally increased soft tissue pooling in the second phase and intense inhomogeneous tracer localization in the shaft of left femur in the third phase. (Fig 7D)

An FDG PET scan was performed to rule out infection. The PET scan revealed patchy localization of FDG in the shaft of left femur. (skip lesions involving the marrow, cortex and soft tissue around the left femur.) (Fig 7E)

Based on these findings a diagnosis of chronic bone infection such as tuberculosis was made. Histology revealed plasma cell osteomyelitis.

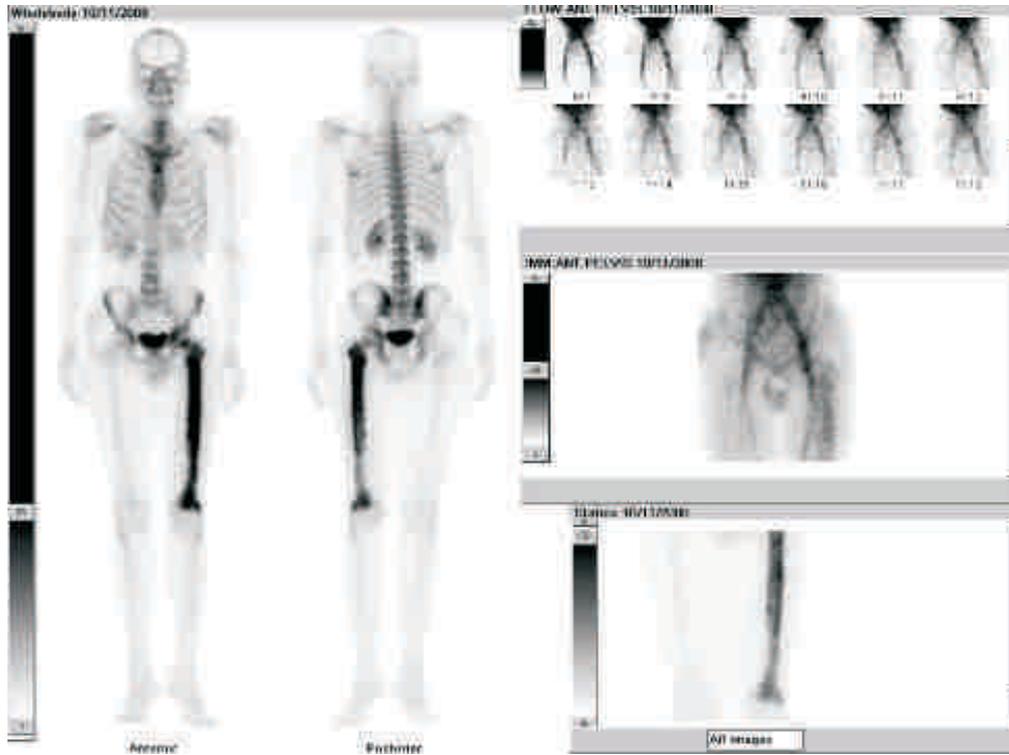


Fig. 7D.

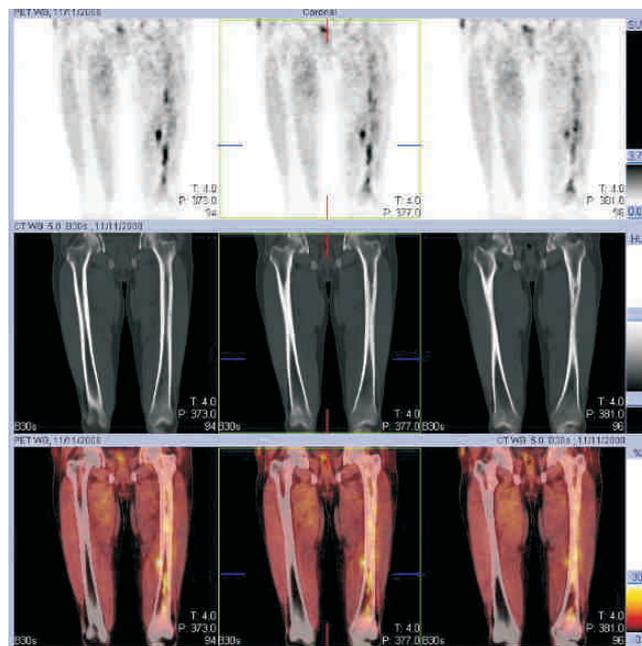


Fig. 7E.

## *Case8. PET in unknown primary*

**Contributed by :**

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*Dr. Dhanpathi - Consultant in Nuclear Medicine*



**Fig. 8A.**



**Fig. 8B.**

A 64 years old male presented with backache.

There was radiological evidence of collapse of D11 vertebra. (MRI reveals marrow signal abnormality in the D11 vertebra suggestive of metastasis Fig 8A)

A whole body Bone scan shows solitary lesion in the D11 vertebra. (Fig 8B) Based on the bone scan it was not possible to differentiate osteoporotic collapse from metastasis.

Biopsy of the D11 vertebra revealed high grade metastatic carcinoma. His PSA was 10.50 ng/ml.

In view of this, a whole body PET-CT scan was requested so as to localize the primary malignant site.

The study revealed two areas of abnormal FDG localization viz. one in the naso-pharynx and another in the prostate gland. (Fig 8C and 8D)

Biopsy from both the sites confirmed malignancy.

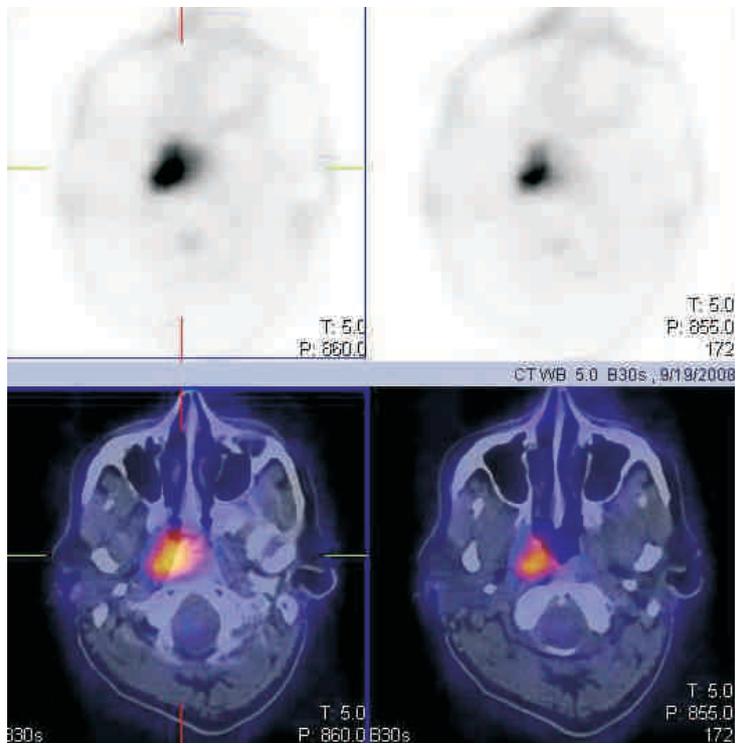


Fig. 8C.

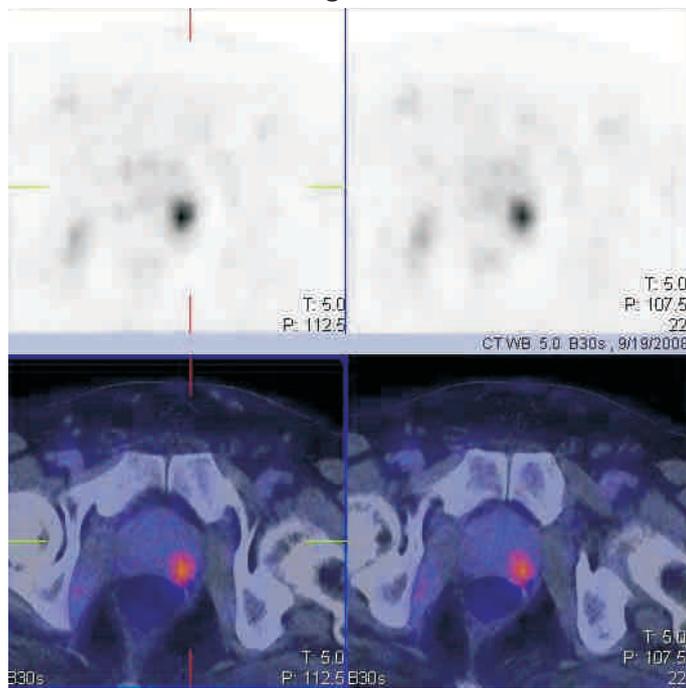


Fig. 8D.

## Case9. Mycotic pulmonary embolism

Contributed by :

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*Dr. Dhanpathi - Consultant in Nuclear Medicine*

*Dr. Shrikant Solav - Consultant in Nuclear Medicine*

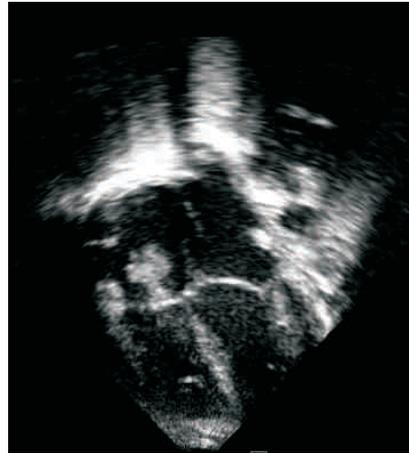


Fig. 9A.

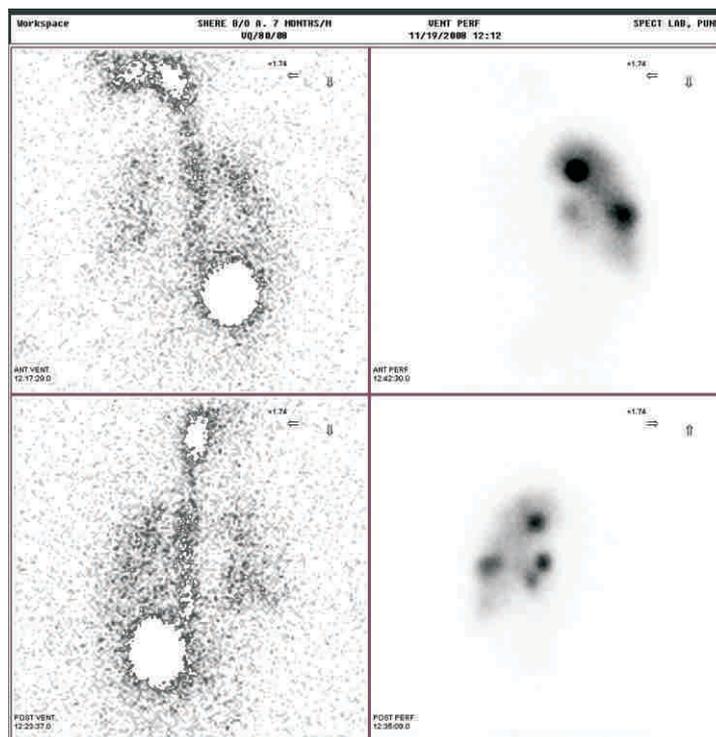


Fig. 9B.

This eight week old baby had high grade fever, altered sensorium, leukocytosis.

An echocardiogram revealed vegetations in the tricuspid valve. (Fig 9A)

A ventilation-perfusion scan shows homogeneous distribution of radio-aerosol in all the segments with absence of perfusion in the entire right lung. (This is called ventilation-perfusion mismatch) (Fig 9 B)

An angiogram revealed proximal blocked right pulmonary artery. (Fig 9 C)

The child underwent per operative thrombectomy and a follow up VQ scan shows significant improvement in perfusion to the right lower lobe. (Fig 9D)

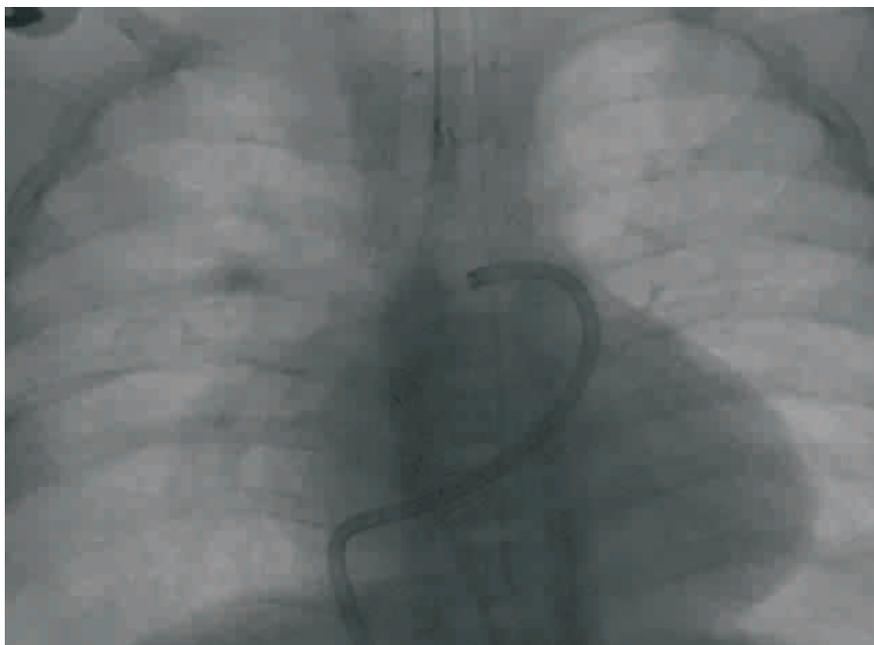


Fig. 9C.

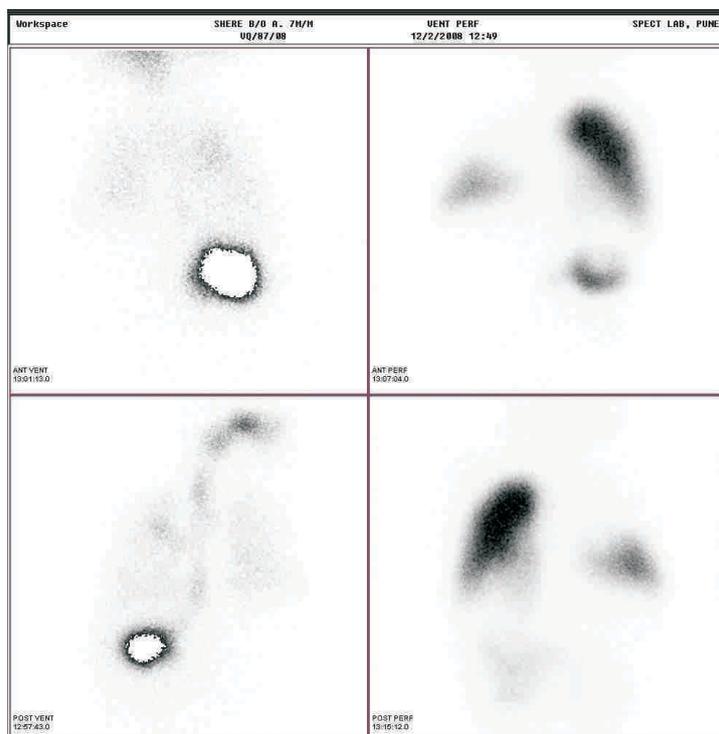


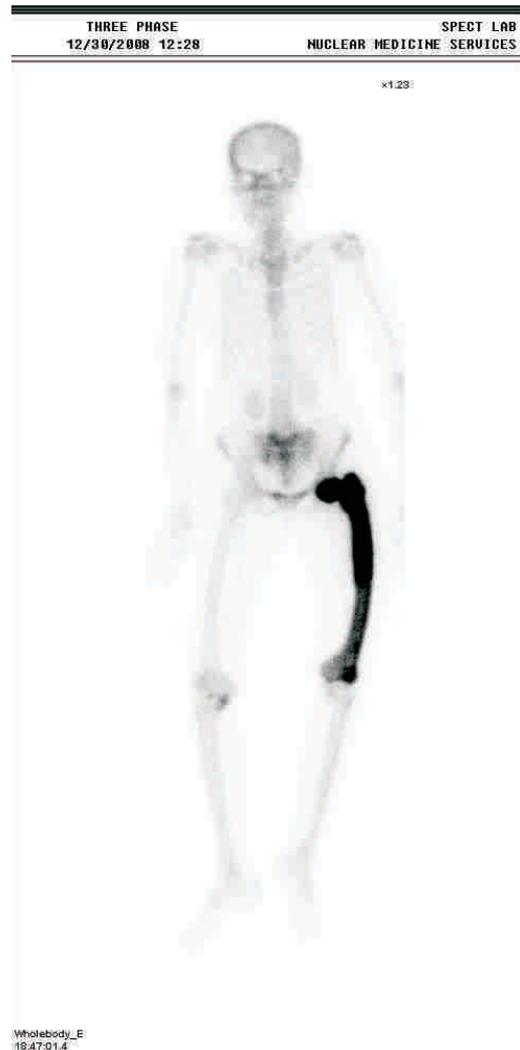
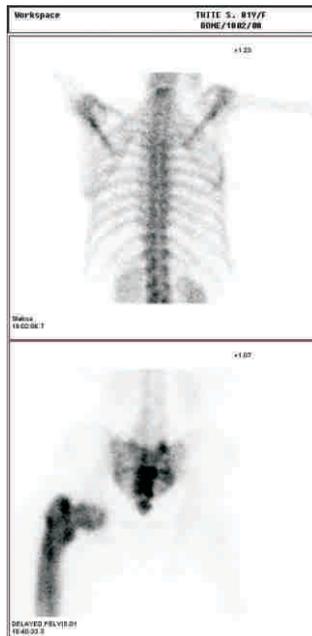
Fig. 9D.

## Spot Diagnosis

Contributed by :

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- Orthopedic Surgeon*

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Consultant in  
Nuclear Medicine*



This middle aged lady presented with backache and pain in the thigh region. Plain radiograph revealed patchy osteolytic and sclerotic areas in the left femur.

Whole body bone scan shows avid uptake of tracer involving the entire left femur. The sacrum shows increased inhomogeneous uptake of tracer. The appearance was typical of Pagets disease involving the left femur and sacrum. Serum alkaline phosphatase was 744 U/L (normal 258) and her calcium, phosphorous levels were normal. Salient features: Pagets disease is also called as osteitis deformans, osteoporosis circumscripta (skull). It is a focal / regional metabolic disorder of the skeleton that usually involves more than one bone. There is excessive bone remodeling leading to coarse trabeculae, sclerosis and expansion of the involved bones. Bone scan shows typical intense tracer uptake in the involved bones especially during the lytic phase.

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