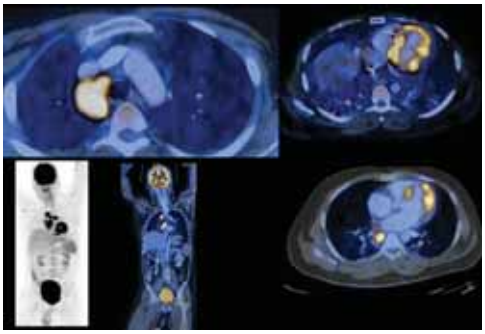

Figure 4: PET-CT images (colored image) showing multi-organ lesions in sarcoidosis with corresponding PET (gray image) image in coronal plane.

MISCELLANEOUS INFLAMMATIONS

In large-vessel arteritis, PET-CT is helpful in diagnosis and assessment of treatment response especially when perivascular tissues are also involved[21]. Examination is false-negative in blood vessel is smaller than 4 mm in diameter.

If the clinical & laboratory suspicion is high, whole body imaging with PET-CT is useful in identifying multi-organ involvement in sarcoidosis and also deciding the site of biopsy (figure 4)[22].

Drug induced lung injury is commonest with bleomycin. Early changes may be masked by dependant atelectasis on HRCT lungs and needs prone position scanning. However, PET-CT is useful not only in early detection but is also a good indicator of treatment response[23].

In AIDS, PET-CT imaging helps in localization of infectious foci / tumoral lesions with sensitivity and specificity being approximately up 92% and 94%[24]. Differentiation between CNS lymphoma, toxoplasmosis, and other nonmalignant CNS lesions becomes easier as CNS lymphoma demonstrate high FDG uptake while Toxoplasmosis demonstrates relatively low FDG activity. However, it is not as useful in distinguishing infection from tumor outside the central nervous system.

- **Assessment of myocardial viability:** F18-FDG PET-CT allows simultaneous assessment of physiology and anatomy. The effect of coronary atherosclerosis on myocardium can also be studied[25, 26].
- **Guidance for interventions:** Apart from diagnostic and staging work up, PET-CT and PET-MR images can be used for intervention procedures. PET-CT is valuable in the identification & localization of multiple lesions and helps in selecting the appropriate lesion for biopsy[19, 24, 27]. Sampling errors can be avoided if metabolically active areas of the tumor are biopsied. Also, when the lesion is not well appreciated on CT scan, this technique helps to get good tissue samples. Pre-procedural PET-CT is adequate for most large lesions while fusion of the needle in-situ CT mage with pre-needle insertion PET image is more suitable for small lesions. Needle is hardly apparent on coarse PET images.

FUTURE TRENDS

Infection/inflammation: FDG-labeled leukocytes and FDG-labeled anti-tubercular drugs may be available for assessment of intra-abdominal, renal, intracerebral, and cardiac infections.

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