

Images in Medicine

FDG-PET/CT imaging in hyperimmunoglobulin E syndrome

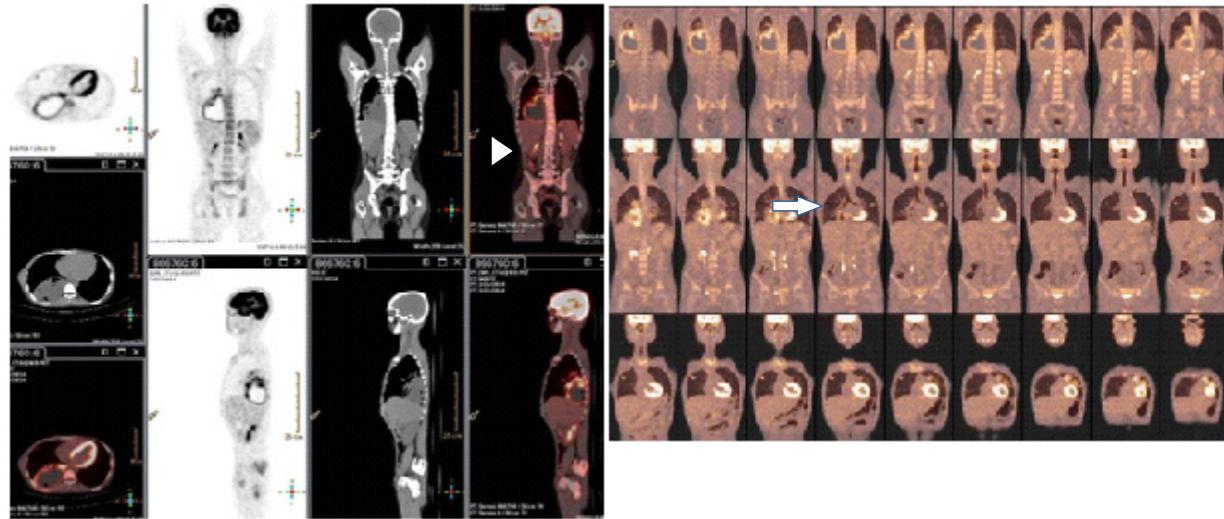


FIG 1. FDG-PET/CT showing a large loculated collection (with interspersed air pockets) with peripheral FDG uptake (arrowhead) and central photopenia in the right pleural space posteriorly and multiple FDG avid rounded nodules in both lungs (arrow)

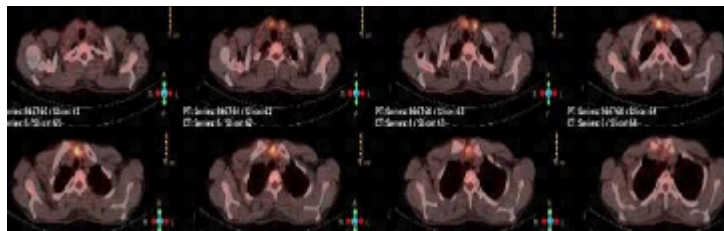


FIG 2. FDG-PET/CT showing erosive arthropathy of the right sternoclavicular joint (arrowhead)

A 24-year-old man presented with a 5-month history of productive cough and right-sided chest pain. He had a previous history of recurrent skin and soft tissue infections since childhood and history of otorrhoea since 2 years. On clinical examination, his vital parameters were within normal limits. General examination revealed erythematous papular lesions all over the body, a bony swelling over the left sternoclavicular joint and a leonine facies. There were reduced breath sounds in the right infrascapular region. Complete blood count revealed an elevated absolute eosinophil count of 3600/cmm and raised serum IgE level (4496 i.u./ml). An opinion was sought from the otorhinolaryngologist and chronic suppurative otitis media was detected.

A final diagnosis of hyperimmunoglobulin E syndrome (also known as Job syndrome) was made. Chest X-ray showed a homogenous opacity in the right lower zone. CT scan of the chest showed multiple necrotic nodules with cavitation in bilateral lung parenchyma and a cystic lesion in the right lower lobe with rupture into the pleura. There was erosive arthropathy of the right sternoclavicular joint. FDG-PET/CT (Figs 1 and 2) was done for whole body survey of active infective foci. It showed a large loculated collection (with interspersed air pockets) with peripheral FDG uptake (SUVmax of 5.88) and central photopenia in the right pleural space posteriorly and multiple FDG avid rounded nodules in both lungs (SUVmax in the most intense lesion was 7.80). An FDG avid lesion was also noted in the suprasternal region (SUVmax 6.09; Fig. 2).

Patients with the hyperimmunoglobulin E syndrome can harbour recurrent 'cold' staphylococcal infections, eczematous skin lesions and severe pulmonary infections frequently resulting in pneumatoceles. FDG-PET/CT could be a very useful whole body non-invasive imaging modality to detect active infective lesions with high sensitivity.

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