

## Extra-articular rheumatoid arthritis imaged by [18F]FDG-PET/CT

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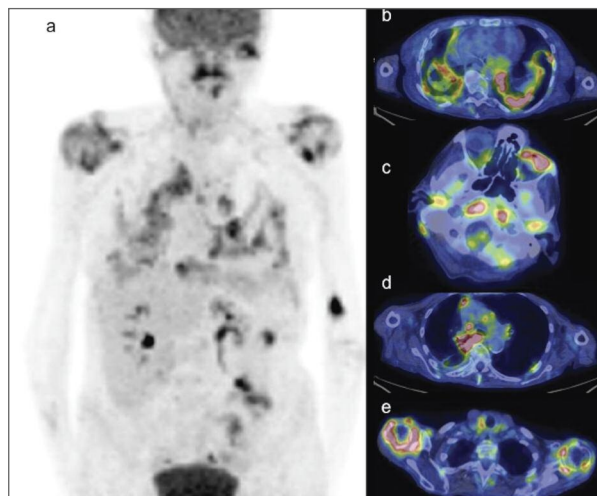
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Rheumatoid arthritis (RA) is the most common systemic connective tissue disease. Signs of systemic inflammation include constitutional features (e.g. profound fatigue, influenza-like symptoms, fever, sweats and weight loss) and extra-articular manifestations (ExRA). The most frequent of such manifestations, the subcutaneous rheumatoid nodule, has been reported in up to one third of patients with RA. Severe ExRA manifestations (e.g. vasculitis, rheumatoid lung disease, pericarditis, and pleuritis) are more frequent in patients with rheumatoid nodules<sup>1</sup>. Severe ExRA has been associated with an increased mortality compared with patients with RA in general<sup>2</sup>.

A 83-year-old woman, followed in the outpatients clinic, with a 20-year history of seropositive RA characterized by systemic involvement including cutaneous and pleuro-pulmonary rheumatoid nodules, scleromalaciaperforans, and rheumatoid vasculitis associated with multi-organs failure, presented cough, hemoptysis, and weight loss. Due to the persistency of these clinical manifestations she was hospitalized and diagnostic workup, including [18F]FDG-PET/CT was performed. PET/CT showed several areas of [18F]FDG uptake (orbit, nasopharynx, lymph nodes, pleura, lung, stomach, bowel, and joints). [18F]FDG-PET/CT findings were consistent with ExRA manifestations as confirmed by pleural biopsy.

In RA [18F]FDG-PET/CT has been mainly used to assess joint(s) involvement or to evaluate metabolism in lung nodule(s). Due to the association between RA and systemic chronic inflammation, [18F]FDG scan provides a non-invasive, quantitative method to study the metabolic activity of target tissue, in vivo, which can identify site(s) of active RA inflammation with higher sensitivity compared to clinical assessment<sup>3</sup>.

In conclusion, [18F]FDG-PET/CT may be used to



**FIGURE 1.** The maximum intensity projection (MIP) image (a) shows several areas of high [18F]FDG uptake in orbit, pharynx, lymph nodes, pleura, lungs, stomach, bowel, and joints as confirmed by fused axial images (b: pleura thickenings/lungs; c: left orbit; d: lymph nodes; e: joints)

assess joints disease activity as well as ExRA manifestations.

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