



Atypical gouty mediastinal tophus mimicking thymoma on ^{18}F -FDG PET/CT

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Although gout is very common, extra-articular ^{18}F -FDG positive disease is scarce [1]. We report here an unusual ^{18}F -FDG avid tophus location and the immunohistochemical rationale for ^{18}F -FDG positivity. A 73-year-old man with a history of gout was referred for characterization of a mediastinal mass. ^{18}F -FDG PET-CT showed an anterior 20-mm mediastinal mass (density $27 \text{ HU} \pm 11$), with moderate ^{18}F -FDG uptake (**a**, $\text{SUV}_{\text{max}} \text{ EARL} = 5.3$). This aspect mimicked a thymoma, leading to surgery and surprisingly, pathology showed a gouty tophus. Tophi usually affect the peripheral joints, even if they can occur in atypical locations such as the eye, nose, spine, and viscera [2]. Moreover, in conventional CT, tophi are typically seen as hyperdense masses about 160 HU or above, due to crystal depositions [3], although false-negatives may

occur in CT with low density, due to lower crystal concentrations [4]. Macroscopic aspect (**b**) showed a well-defined nodular lesion with whitish crystals. Hematoxylin-eosin-saffron staining (**c**, **d**) showed fine, parallel, and crystalline imprints (**c**, black arrows) surrounded by a granulomatous reaction with macrophages and giant cells (**d**, black arrows). That was confirmed by immunohistochemistry aspect which showed, after CD163 staining, macrophages, and giant cells with cytoplasmic staining (**e**, black arrows). This case demonstrates that unusual localization of extra-articular tophi may occur and are likely to be ^{18}F -FDG avid, via an organized chronic inflammatory granulomatous response to the accumulated crystals [5]. PET readers should not be misled by unusual localization and CT density.

This article is part of the Topical Collection on Image of the month

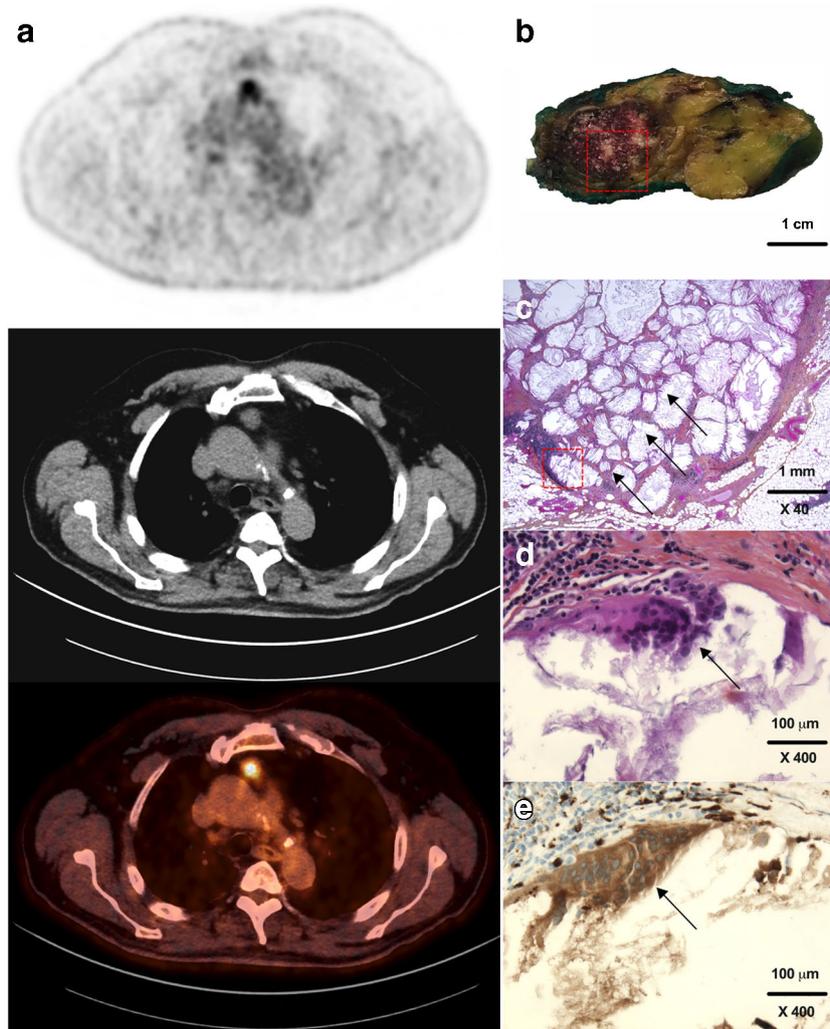
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Compliance with ethical standards

Informed consent Approval to use clinical and pathological images and to publish them was obtained from the patient.

Conflict of interest The authors declare that they have no conflict of interest.

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