The diagnostic usefulness of $^{18}$F-fluorodeoxyglucose-positron emission tomography/CT in SAPHO syndrome

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DESCRIPTION

A 62-year-old man was referred to the outpatient cardiology service of our hospital with a 3-month history of right chest pain. Cardiac enzymes, including the CK-MB isoform of creatine kinase and troponin, ECG and chest radiography examinations were normal. Laboratory examinations were normal, except for elevated C reactive protein level (13.45 mg/dL). Findings of contrast-enhanced thoracic CT were normal (figure 1A–D), as were those

![Figure 1](https://casereports.bmj.com/)

**Figure 1**  (A) Contrast-enhanced chest CT in the sagittal plane showing normal findings. (B–D) Contrast-enhanced chest CT in the transverse planes showing normal findings. (E) $^{18}$F-fluorodeoxyglucose-positron emission tomography/CT (FDG-PET/CT) in the sagittal plane showing intense accumulation in and around the left sternoclavicular joint and the sternum. (F–H) FDG-PET/CT in the transverse planes showing intense accumulation in and around the left sternoclavicular joint and the sternum.
of ultrasonography of the sternum and the xiphoid process. To further investigate the cause of chest pain, the patient was referred to our pulmonary department. Since inflammatory lesions of the sternum, which could not be detected by CT, were suspected, $^{18}$F-fluorodeoxyglucose (FDG)-positron emission tomography/CT (PET/CT) was performed, which demonstrated intense accumulation in and around the left sternoclavicular joint and the sternum (maximum standardised uptake values: 4.0) (figure 1E–H). Although there were no cutaneous lesions, the patient was diagnosed with synovitis, acne, pustulosis, hyperostosis, osteitis (SAPHO) syndrome based on clinical findings, including the FDG-PET/CT results. After beginning treatment with non-steroidal anti-inflammatory drugs, his chest pain disappeared completely, and the C reactive protein level normalised. SAPHO syndrome is characterised by synovitis, acne, pustulosis, hyperostosis and osteomyelitis; it was first described in 1987. Although SAPHO syndrome is difficult to diagnose, some case reports have shown the usefulness of FDG/PET-CT for early-stage diagnosis, as in the present case. This case is clinically important because the patient was eventually diagnosed as having SAPHO syndrome by FDG/PET-CT during investigation for chest pain originally presumed to result from heart disease.

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**REFERENCES**


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**Learning points**

- A patient with SAPHO (synovitis, acne, pustulosis, hyperostosis, osteitis) syndrome may be referred to the cardiology service for chronic chest pain that may initially be presumed to be related to heart disease.
- SAPHO syndrome is often not diagnosed even after contrast-enhanced thoracic CT and laboratory tests.
- $^{18}$F-fluorodeoxyglucose-positron emission tomography/CT may be a useful imaging modality for the diagnosis of SAPHO syndrome.