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IMAGE OF THE MONTH

One-stop shopping ^{18}F-FDG PET/CT in a patient with vascular type Behçet's disease

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A 43-year-old woman with a history of vascular type Behçet's disease presented prolonged worsening edema in the upper body. A transaxial contrast enhanced computed tomography (CT) image (**A**) shows contrast defect in the superior vena cava (SVC) (*arrow*). The 3D volume rendered image (**B**) shows markedly enlarged intercostal veins and inferior epigastric vein of the right chest wall consistent with collateral vessels. In early dynamic scan, positron emission tomography (PET)/CT emission scanning of the chest region with a 1-min acquisition was performed beginning simultaneously with ^{18}F-fluorodeoxyglucose (FDG) bolus injection. ^{18}F-FDG was injected from the right median cubital vein. To evaluate hemodynamics and vascular anatomical structures, each 3 s time frame was reconstructed during the first 1 min. Static scan was performed 120 min after ^{18}F-FDG injection. PET/CT angiography images (maximum intensity projection images, **a**: 0–3 s, **b**: 4–6 s, **c**: 7–9 s, **d**: 10–12 s, **e**: 13–15 s, **f**: 16–18 s, **g**: 19–21 s) reveal blood flow to SVC from the right subclavian vein via the intercostal veins and enlarged collateral vessels similar to the findings on contrast enhanced CT. A static ^{18}F-FDG PET/CT fused image shows no abnormal uptake of SVC wall (**h**).

In vascular inflammatory diseases such as Behçet's disease, Takayasu aortitis or giant cell aortitis, dilatation or occlusion of vessels sometimes occurs. Although scintiangiography was previously used for evaluating vascular disorders [1], it has been abandoned due to its low spatial resolution. CT angiography is useful in detecting structural changes such as aneurysm, dissection and stenosis, especially during disease follow-up [2]. Recently, Drescher and Freesmeyer introduced the usefulness of PET/CT angiography using early dynamic PET/CT [3–7]. They clearly visualized the aorta and its main branches on PET/CT angiography. On the other hand, ^{18}F-FDG PET/CT is a known useful imaging tool in the evaluation of the activity of vascular inflammations [8, 9]. ^{18}F-FDG PET/CT angiography can be performed as part of PET/CT examinations indicated for metabolic evaluation without adding any acute risks to the patient. ^{18}F-FDG PET/CT can be a "one stop shopping" imaging modality for vascular inflammatory disorders, especially large vessel vasculitis.

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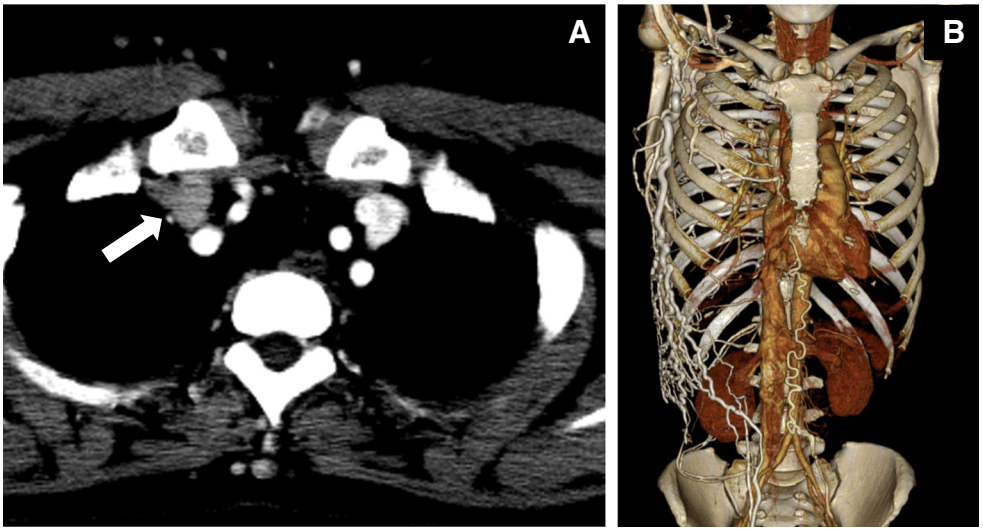
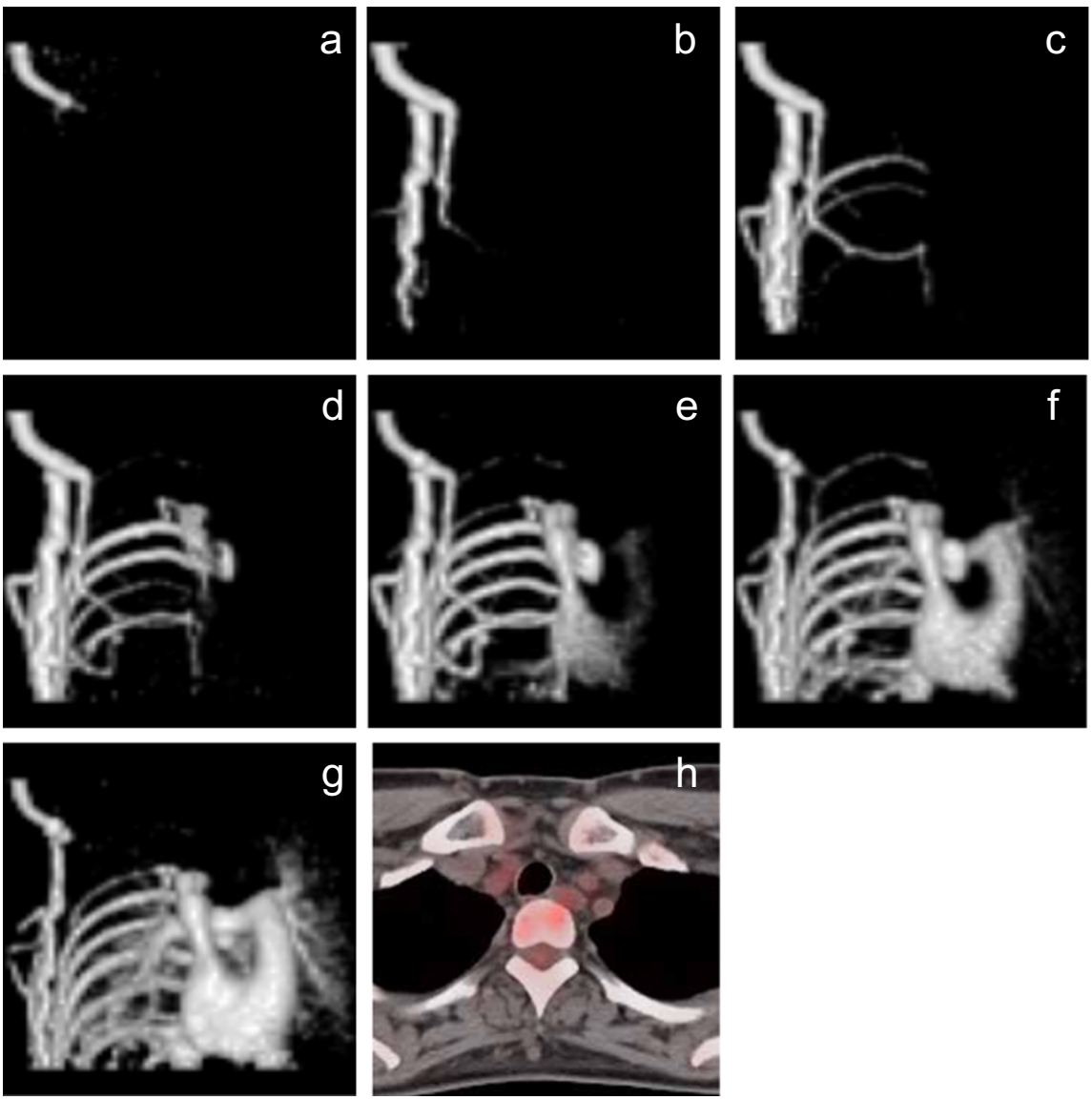

A
B


a
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