Serial assessment at computed tomography and fluorine-18-labelled deoxyglucose positron emission tomography for the diagnosis and treatment of nonaneurysmal infective aortitis

Shingo Sakamoto MD¹, Naoyuki Yokoyama MD¹, Satoshi Kasai MD¹, Yuiichi Tamori MD¹, Toshiya Okajima MD¹, Tsuyoshi Yoshimuta MD¹, Koichi Akutsu MD¹, Masahiro Higashi MD², Satoshi Takeshita MD FACC¹

A 62-year-old man presented with persistent slight fever and lumbarago, which had persevered for the past two months. The patient's history included a dental extraction three months earlier. Laboratory analysis revealed elevated white blood cell count, erythrocyte sedimentation rate and C-reactive protein level. Computed tomography (CT) imaging revealed a soft tissue thickening surrounding the infrarenal abdominal aorta, which was enhanced with contrast media (Figure 1A, arrow). The abdominal aorta was not dilated, and was measured at a maximum diameter of 27 mm, including the surrounding soft tissue. A fluorine-18-labelled deoxyglucose (FDG) positron emission tomography (PET) scan was performed, with increased FDG uptake noted at the site of soft tissue thickening (Figure 1B, arrow). Although the patient had multiple negative serial blood cultures, based on the history of dental extraction as well as the results of

the imaging studies, he was diagnosed and treated for nonaneurysmal infective aortitis. During seven weeks of antibiotic therapy, the patient's symptoms gradually improved. The laboratory markers also normalized. A follow-up CT at 13 weeks documented improvement of periaortic tissue thickening (Figure 1C, arrow). Repeat FDG PET demonstrated resolution of the abnormal FDG uptake (Figure 1D, arrow). A follow-up CT at nine months confirmed further decrement of the periaortic soft tissue thickening (Figure 1E, arrow). FDG PET continued to show no abnormal FDG uptake (Figure 1F, arrow).

The present case demonstrates the effectiveness of serial CT imaging in conjunction with FDG PET for the early diagnosis and treatment of this disease. To the best of our knowledge, the present article is the first to report successful antibiotic treatment of infective aortitis before aneurysm formation.

Figure 1

¹Department of Medicine; ²Department of Radiology, National Cardiovascular Center, Osaka, Japan

Correspondence and reprints: Dr Satoshi Takeshita, Department of Medicine, Division of Cardiology, National Cardiovascular Center,

5-7-1 Fujishiro-dai, Suita, Osaka 565-8565, Japan. Telephone 81-6-6833-5012, fax 81-6-6872-7486, e-mail stake@muse.ocn.ne.jp

Received for publication September 3, 2007. Accepted September 9, 2007