Serial Observation of Aortic Puff-Chandelier Rupture for 2 Years by Non-Obstructive General Angioscopy

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An 83-year-old man with a history of hypertension, dyslipidemia, and acute coronary syndrome was referred for chest pain. Two years later, percutaneous coronary intervention was performed for progression of a severe stenosis of the left circumflex artery. Non-obstructive general angioscopy (NOGA) was repeated to screen aortic atherosclerosis and to evaluate the change.¹ There were 2 notable findings. First, NOGA revealed puff-chandelier ruptures¹ and a flap-like lesion in a portion of the greater curvature of the aortic arch, although little calcification had been found by computed tomography (Figure A,B; Supplementary Movie). Two years later, peeled intima and an open fissure appeared at the site (Figure C,D), which was considered to be the entry point of the asymptomatic early stage of a tiny dissection, because blood flowed through the fissure. The second change was in the infrarenal aorta. Computed tomographic angiography (CTA) showed calcification and intimal thickening (Figure E,F), and NOGA showed puff-chandelier ruptures.¹ Scattering of plaque components from the puff-chandelier rupture might have continued for 2 years (Supplementary Movie). Histopathology of a sample from the infrarenal aorta¹ revealed atheroma both at baseline and 2 years later (Figure G,H).

The patient continued to be event-free for 3 months with conservative follow-up.

Disclosures

K. Kodama is the President of Inter-tec Medicals, Co. Ltd. S. Komatsu is a technical consultant for Nemoto Kyorin-do Co. Ltd. All other authors have no relationships to disclose. The procedures followed were in accordance with the Declaration of Helsinki and the Ethics Committee of Osaka Gyoumeikan Hospital (2015-004).

Reference

1. Komatsu S, Yutani C, Ohara T, Takahashi S, Takewa M, Hirayama A, et al. Angioscopic evaluation of spontaneously ruptured aortic plaques. *J Am Coll Cardiol* 2018; **71**: 2893–2902.

Supplementary Files

Supplementary Movie. Puff-chandelier rupture with flap-like lesion at baseline. An open fissure into which blood seemed to flow was detected 2 years later. Serial computed tomography angiography did not show any findings suggesting dissection, such as ulcer-like projections or double lumen in the aortic arch, in this patient.

Please find supplementary file(s);
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Figure. (A) Sagittal view of aortic arch by computed tomographic angiography (CTA) shows the intima at the greater curvature is not thickened (arrows). (B) Maximum intensity projection by CTA, showing little calcification (arrowhead). Sagittal (C) and coronal (D) view of the aortic arch by CTA 2 year later. (E) Axial image of the infrarenal aorta by CTA showing eccentric mixed plaque. (F) Maximum intensity projection by CTA shows calcification. Puff-chandelier plaque stained with hematoxylin-eosin at baseline (G) and 2 years later. (H) Atheroma with cholesterol crystals was detected in both specimens.