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IMAGES IN CARDIOVASCULAR INTERVENTION

# Peri-stent contrast staining post-everolimus eluting stent deployment disappeared in a very short duration

**Takuya Maeda[1] · Tomohiko Teramoto[1] · Nobukiyo Tanaka[1] · Hiroki Ishihara[1] · Masanori Teramura[1] · Kei Ichihashi[1]**

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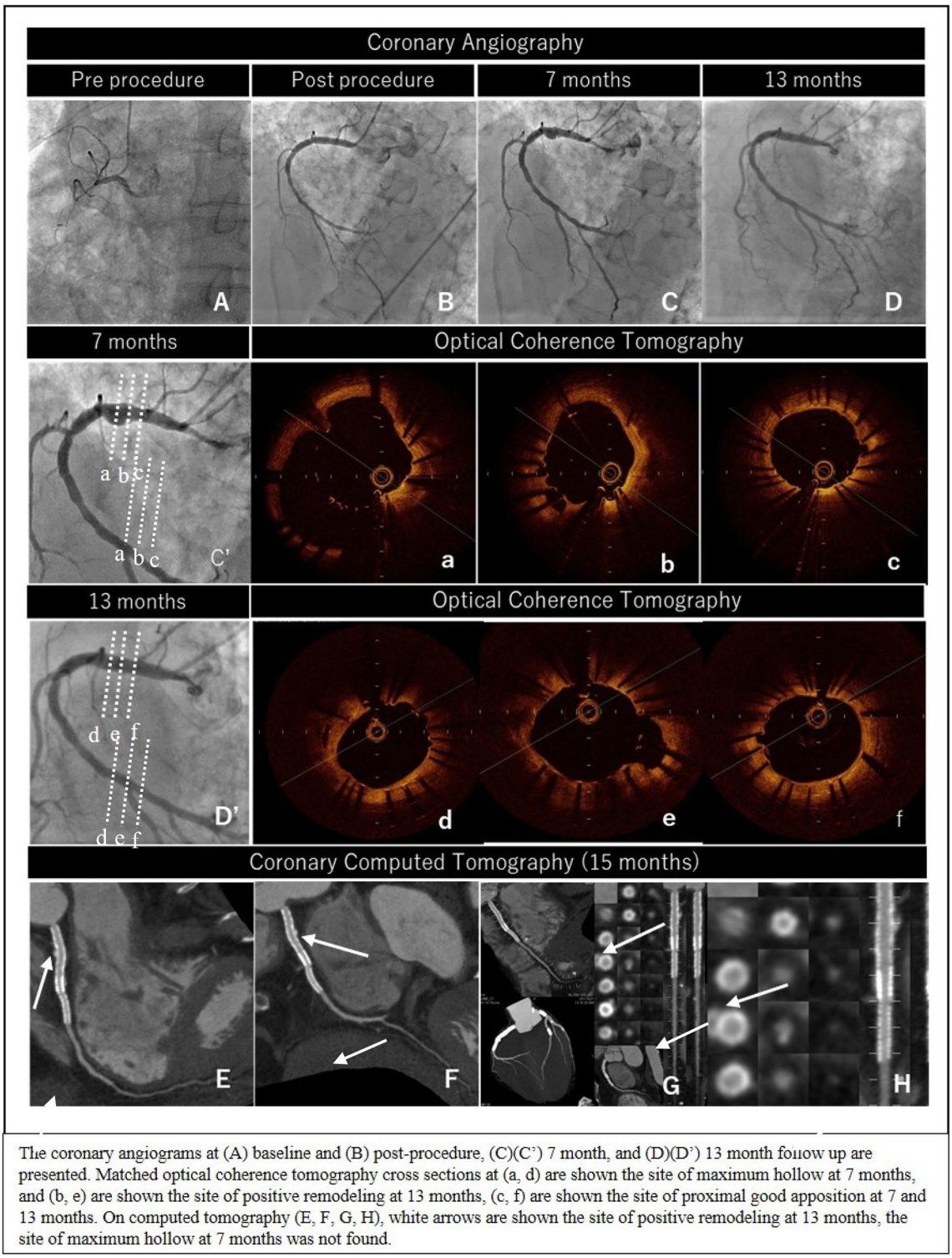
A 74-year-old man with diabetes, dyslipidemia, hypertension, and a current smoking habit was referred to our hospital due to exertional chest oppression. He underwent coronary angiography (CAG) with a diagnosis of stable angina. Angiography revealed a chronic total-occluded (CTO) lesion in the right coronary artery (RCA). Percutaneous coronary intervention was selected after a discussion with surgeons. The CTO lesion in the RCA was treated with two everolimus-eluting stents (Xience Alpine, Abbott vascular, Illinois, USA). A 2.75 × 23 mm stent was deployed distally, and a 3.5 × 33 mm stent was deployed proximally, and the deployed stents overlapped. After the implantation of these stents, good coronary blood restoration was confirmed. Follow-up angiography 7 months after the initial procedure revealed a peri-stent contrast staining (PSS) image at the proximal portion of the proximal stent (Fig. 1C, C'). Additional optical coherence tomography (OCT) was performed and OCT revealed a well-apposed stent strut and a hollow-like area behind it (depth was about 2.0 mm). Dual antiplatelet therapy was maintained for preventing stent thrombosis. Repeat follow-up CAG was performed 13 months after the initial procedure. Repeat follow-up CAG revealed prominent improvement in the PSS image (Fig. 1D, D'). Additional OCT also revealed the disappearance of the hollow area and positive remodeling of the proximal vessel.

Although PSS was considered an indicator of subsequent stent thrombosis, the occurrence of the PSS in second-generation DES was less frequent than that in first-generation DES. In addition, some PSS observed in second-generation DES heals spontaneously [1, 2]; however, it is infrequent that the PSS disappeared spontaneously in such a short duration. Considering such a short duration, we think it is more possible that this phenomenon represents the process of vessel wall injury and healing and/or the process of replacement from thrombi to PSS rather than hypersensitivity reaction for the eluting drug or restoration of positive remodeled vessel.

✉ Tomohiko Teramoto
tomo.tera@gmail.com

[1] Department of Cardiovascular Medicine, Ichinomiya Nishi Hospital, 1, Kaimei-Hira, Ichinomiya, Aichi 4940001, Japan




The coronary angiograms at (A) baseline and (B) post-procedure, (C)(C') 7 month, and (D)(D') 13 month follow up are presented. Matched optical coherence tomography cross sections at (a, d) are shown the site of maximum hollow at 7 months, and (b, e) are shown the site of positive remodeling at 13 months, (c, f) are shown the site of proximal good apposition at 7 and 13 months. On computed tomography (E, F, G, H), white arrows are shown the site of positive remodeling at 13 months, the site of maximum hollow at 7 months was not found.

**Fig. 1** Angiography and optical coherence tomography, computed tomography

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no competing interests.

## References

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