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An 82-year-old man with stable angina had undergone implantation of a Resolute Integrity drug-eluting stent in the mid right coronary artery (RCA) 10 years earlier. He subsequently underwent PCI for an in-stent chronic total occlusion originating within the previously implanted mid-RCA stent and extending distally. During the procedure, intravascular imaging demonstrated a wire-related hematoma beginning distal to the previous stent, although the wire course was considered intraplaque. A Xience Skypoint drug-eluting stent was implanted from the distal edge of the previous stent to the distal RCA. Final angiography showed no peri-stent contrast staining (PSS), and intravascular ultrasound confirmed good stent expansion without apparent malapposition.

Approximately 7 months later, follow-up myocardial perfusion imaging demonstrated ischemia. Coronary angiography revealed focal in-stent restenosis in the mid RCA together with PSS immediately distal to the restenotic segment. OCT demonstrated fibrous neointimal proliferation at the restenotic lesion, whereas the PSS corresponded to a peri-stent cavity surrounding the overlap between the previous Resolute Integrity stent and the newly implanted Xience Skypoint stent. An entry-like communication was observed near the site of the procedural hematoma identified during the index CTO PCI.

The restenotic lesion was treated with a 3.5/30-mm Agent drug-coated balloon, whereas the PSS was managed conservatively because luminal compromise was absent. Covered stent implantation was reserved only if follow-up imaging demonstrated progression.

Five months later, repeat angiography showed no progression of the restenosis and marked attenuation of the PSS. OCT demonstrated filling of the previous peri-stent cavity, predominantly by thrombus, while the stent lumen remained preserved. Therefore, no additional intervention was performed.

Although PSS after CTO PCI has been reported, its subsequent morphological evolution has rarely been documented. In this case, serial OCT demonstrated cavity filling accompanied by angiographic attenuation of PSS during follow-up after DCB treatment for concomitant ISR, without direct treatment of the PSS. These findings illustrate the potential value of serial OCT for characterizing the temporal changes of PSS and supporting individualized management.