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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Drug-eluting stent implantation for subclavian artery reocclusion after bare-metal stent implantation: two-year outcomes

Implantacja stentu uwalniającego lek z powodu reokluzji tętnicy podobojczykowej po implantacji stentu metalowego: wyniki po 2 latach

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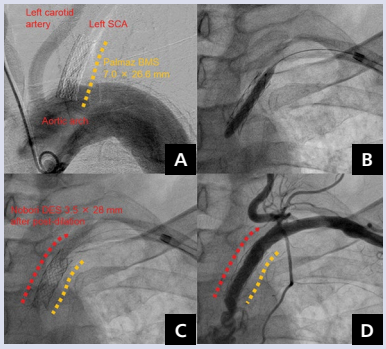

Figure 1. Angiography and endovascular therapy. BMS — bare-metal stent; DES — drug-eluting stent; SCA — subclavian artery

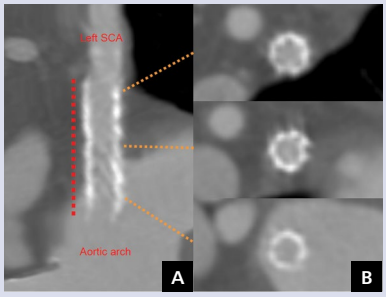

Figure 2. Computed tomography images at the two-year follow-up. SCA — subclavian artery

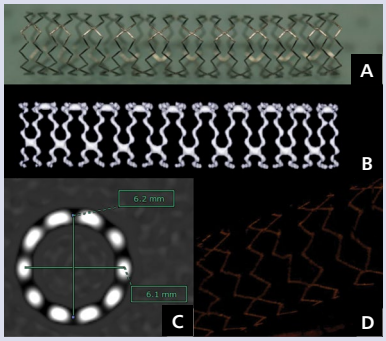

Figure 3. A 3.5-mm-diameter Nobori drug-eluting stent dilated by a 6.0-mm--diameter semi-compliant balloon at a pressure of 12 atm

There is currently no guideline for an optimal repeat endovascular therapy (EVT) strategy for subclavian artery (SCA) restenosis after bare-metal stent (BMS) implantation. We report a case of drug-eluting stent (DES) implantation for SCA reocclusion after BMS implantation with a favourable outcome for up to two years. A 63-year-old female had undergone primary EVT with a Palmaz BMS (7.0 × 26.6 mm, Cordis, New Brunswick, New Jersey, USA) for a *de novo* occlusion in the left proximal SCA nine years ago. Dual antiplatelet therapy was initiated with 100 mg/day of aspirin and 200 mg/day of ticlopidine before the primary EVT. The patient provided written, informed consent prior to the treatment. The left brachial systolic blood pressure (SBP) became significantly lower than the right brachial SBP with a recurrence of left arm claudication. Repeat angiography showed left SCA in-stent reocclusion (Fig. 1A). According to quantitative angiography, the reference vessel diameter was 6.0 mm. Pre-dilation was performed using 4.0-mm and subsequent 6.0-mm-diameter semi-compliant balloons. Then, a Nobori DES (3.5 × 28 mm, Terumo, Kanagawa, Japan) was implanted without stent migration (Fig. 1B). Finally, post-dilation was performed using a 6.0-mm-diameter semi-compliant balloon at 24 atm. The final angiography showed no significant residual stenosis without obvious findings of stent deformation (Fig. 1C, D). Also, there were no periprocedural vascular complications. At the two-year follow-up, computed tomography (CT) showed acceptable patency with no evidence of stent fracture (Fig. 2). The patient had no symptoms and no significant difference between left and right brachial SBPs. There were concerns that a 3.5-mm-diameter Nobori DES, which might be suitable for over-expansion, could be over-expanded to 6.0 mm in diameter. We conducted a bench test using CT and optical coherence tomography in normal saline to measure the diameter and observe the structure of the stent (Fig. 3). We confirmed that a 3.5-mm-diameter Nobori DES could be over-expanded to at least 6.0 mm in diameter with no evidence of stent deformation using a 6.0-mm-diameter semi-compliant balloon at 12 atm. DES implantation is known to be effective for coronary, femoropopliteal, and carotid artery in-stent restenosis after BMS implantation. Also, in the aforementioned bench test a 3.5-mm-diameter Nobori DES was shown to be over-expanded to at least 6.0 mm in diameter without evidence of deformation. We provided evidence that DES implantation was successfully performed for the treatment of SCA reocclusion after BMS implantation, and the vessel patency was maintained with no evidence of stent fracture for up to two years. DES implantation could be a feasible and effective treatment option for SCA restenosis after BMS implantation.

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Conflict of interest: *none declared*