Successful Disruption of Massive Calcified Nodules Using Novel Shockwave Intravascular Lithotripsy

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A 74-year-old woman underwent coronary angiography showing severely calcified lesions in the ostial and mid-left circumflex artery (LCx) with patent graft to the left anterior descending artery and occluded graft to the LCx (Figure A). Even after multiple rotational atherectomies (RA) with a 1.5-mm burr (Figure a), optical coherence tomography (OCT) demonstrated almost unmodified massive calcified nodules (CN) in the ostium, with multiple intimal microdissections (Figure b–d). Accordingly, intravascular lithotripsy (IVL; Shockwave Medical, Fremont, CA, USA), which was introduced more recently as an alternative to atherectomy for the treatment of calcified coronary lesions, was performed using a 3.5×12-mm IVL balloon, in which 40 pulses were applied (Figure a’). OCT clearly showed disrupted CN with enlarged lumen; specifically, deep fractures were created on CN (Figure b’–d’). Finally, an excellent angiographic result was obtained with implantation of 2 drug-eluting stents followed by adequate post-dilatation (Figure B).

Consistent with previous reports, IVL can produce focal disruption to gain lumen area, even in the presence of circumferential deep calcification.1 Of note, the present case has further demonstrated the effectiveness of the novel IVL technique on a massive CN, one of the hardest types of rock to treat.

Disclosures
The authors declare no conflicts of interest.

Reference