A 66-year-old man presented to our department with one day history of intermittent angina. After loading of aspirin 300 mg and clopidogrel 300 mg, coronary angiography (CAG) was performed via left snuffbox approach as patient had end-stage renal disease on hemodialysis via right atriovenous fistula (Fig. 1A). CAG demonstrated the severe stenosis in the ostium of unprotected left main coronary artery (ULMCA) (Fig. 1C). ULMCA was engaged with a 6 French guiding catheter and intravascular ultrasound (IVUS) demonstrated that a minimal lumen area of 5.1 mm$^2$ (Fig. 1D) and distal reference diameter of 5.9 mm. The IVUS assessment led to a 4.0×12 mm bioabsorbable polymer everolimus-eluting stent (SYNERGY™, Boston Scientific, Marlborough, MA, USA) implantation at 16 atmosphere (atm). Postdilation was achieved with a 5.0×12 mm noncompliant (NC) balloon at up to 18 atm. Repeated IVUS showed a minimal stent area (MSA) of 7.5 mm$^2$ at the distal portion of stent, but revealed severe malapposition at the same site (Fig. 1E). Significant malapposition led to 2nd postdilation with a 5.0 mm NC balloon at 18 atm by stent boost guidance (Fig. 1F). Follow-up IVUS showed markedly improved malapposition and MSA of 17.4 mm$^2$ (Fig. 1G). Final CAG showed good distal flow without residual stenosis (Fig. 1C). There was no bleeding complication of sheath remove site on next day (Fig. 1B).

The feasibility of percutaneous coronary intervention (PCI) of ULMCA via distal radial approach, called snuffbox approach, is concerned. Kiemeneij$^1$ reported procedures with 6 French catheters were performed for simple and complex lesion over half of all study patients and there is no puncture trauma and no major bleeding. Our experience highlights the efficacy and safety of snuffbox approach in IVUS-guided PCI for ULMCA.
REFERENCES


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IVUS-guided PCI for LM via Snuffbox Approach

Figure 1. (A) Peripheral angiography of left hand demonstrating relevant caliber of distal radial artery compared with conventional puncture site of radial artery (arrow, punctured artery site of left snuffbox approach). (B) Inserted 6 French sheath via left snuffbox approach (upper) and clear wound of puncture site on next day after removal of sheath (arrow, lower). (C) Diagnostic CAG demonstrating severe stenosis in the ULMCA (arrow, upper) and post percutaneous coronary intervention CAG demonstrating successful stenting of the ULMCA (arrow, lower). (D) IVUS cross-section demonstrating minimal lumen area of 5.1 mm² and plaque burden of 78% (PB, plaque burden). (E) IVUS after post-stent implantation with postdilation demonstrating MSA of 7.5 mm² and significant malapposition (1.1 mm of distance between both arrowheads). (F) Stent boost imaging demonstrating under-expansion stent before 2nd postdilation (arrowheads in upper) and well-expansion after 2nd postdilation (arrowheads in lower). (G) Follow-up IVUS demonstrating MSA of 17.4 mm² without malapposition. CAG = coronary angiography; IVUS = intravascular ultrasound; MSA = minimal stent area; ULMCA = unprotected left main coronary artery.

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Conflict of Interest
The authors have no financial conflicts of interest.

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