

Minimally Invasive Transcatheter Aortic Valve Replacement and Sequential Repair of Abdominal Aortic Aneurysm in an Octogenarian

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An 88-year-old man presented to our center due to exertional dyspnea. Echocardiography revealed calcified aortic valve with increased peak velocity and mean pressure gradient, but decreased aortic valve area, indicative of severe aortic stenosis (AS) (Fig. 1A-C). A transcatheter aortic valve replacement (TAVR) was planned.

Prior to TAVR, computed tomography (CT) showed an 6cm-sized abdominal aortic aneurysm (AAA) (Fig. 1D-F). Since the AAA was not tortuous, transfemoral TAVR with local anesthesia was successfully completed (Fig. 2A, B). 7 days after TAVR, transfemoral endovascular aortic repair (EVAR) was also done (Fig. 2C). Follow-up CT revealed

well-positioned valve prosthesis and aortic stent grafts (Fig. 2D).

The first report of TAVR and sequential EVAR was published in 2012.¹ There was a report of TAVR in a very high-risk AS and AAA previously treated by EVAR.² Simultaneous TAVR and EVAR cases have also been reported.³⁻⁵ Unlike these reports, we used the local anesthesia during TAVR, suggesting coexistence of severe AS and AAA can be corrected by sequential interventions of minimally invasive TAVR and EVAR.

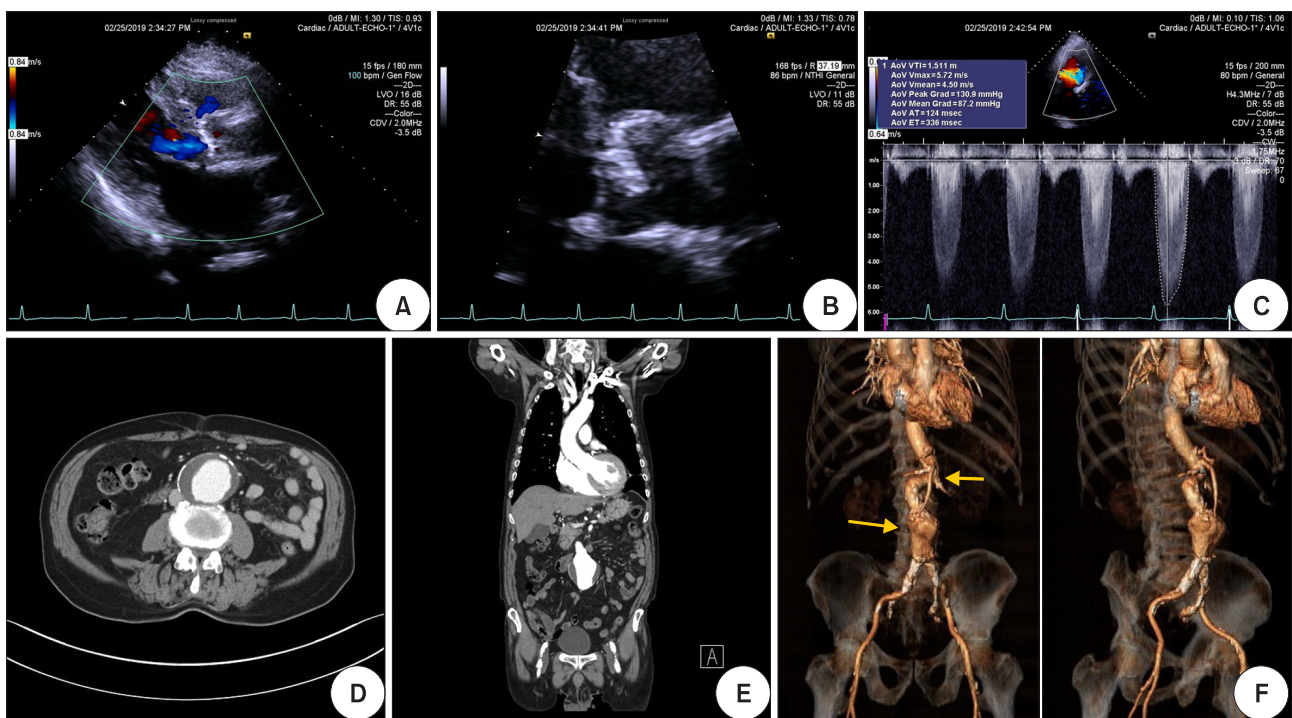


FIG. 1. (A, B) Echocardiography showed heavily calcified aortic valve with a peak velocity of 5.72 m/s, and mean pressure gradient of 87.2 mmHg. (D-F) Computed tomography showed aneurysmal dilatation of the infra-renal abdominal aorta (yellowish arrows).

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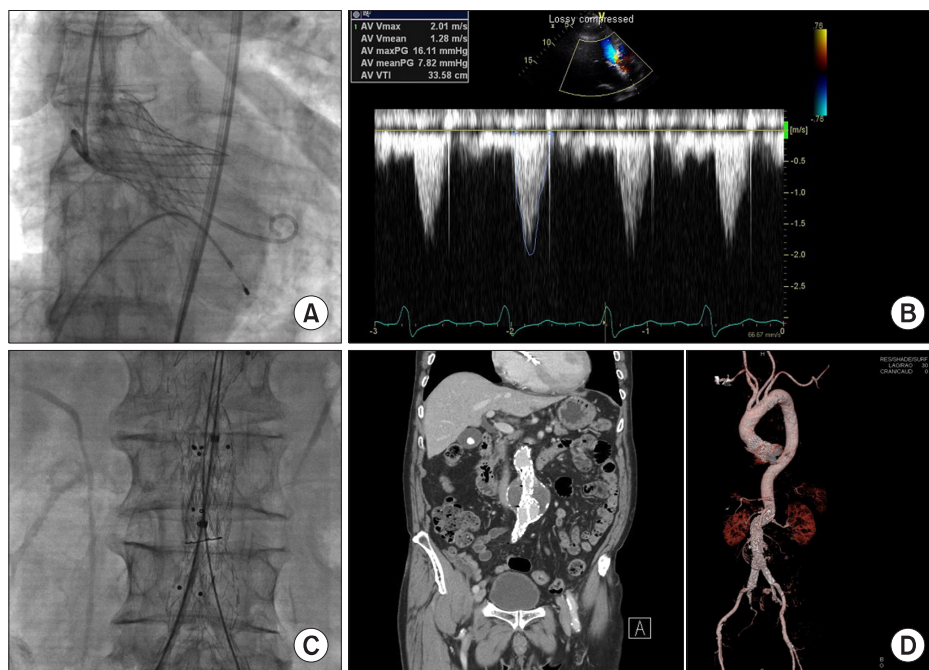


FIG. 2. (A, B) In transcatheter aortic valve replacement, a self-expandable valve prosthesis was deployed, with improvement of valve parameters (peak velocity of 2.04 m/s, mean pressure gradient of 7.9 mmHg, and aortic valve area of 1.42 cm²). (C) A main body stent graft was implanted during endovascular aortic repair. (D) Computed tomography showed good patency of valve prosthesis at the aortic valve, and endoprosthesis at the lower part of abdominal aorta.

CONFLICT OF INTEREST STATEMENT

None declared.

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