Transcarotid aortic valve implantation using the novel Myval Octacor valve: first experience in Poland

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Transcatheter aortic valve implantation (TAVI) is regarded as an established procedure treating of severe aortic stenosis [1]. In recent years, owing to technical advances, an urgent need to investigate the performance of different TAVI devices and approaches in real-world clinical practice has been observed [2–5].

The Myval Octacor valve (Meril Life Sciences, India) represents one of the new-generation balloon-expandable transcatheter heart valve systems offering favorable procedural outcomes. Here, we present a case report on the first use of the Octacor valve implanted *via* transcarotid access in Poland.

An 89-year-old male patient diagnosed with a combined defect of the aortic valve consisting of severe stenosis with concomitant moderate regurgitation was admitted for elective TAVI procedure. The patient's medical history included previous myocardial infarction, peripheral artery disease, and aneurysms of both thoracic, and abdominal aorta.

Computed tomography angiography showed severe atherosclerotic changes in the ilio-femoral arteries, atherosclerosis and unfavorable anatomy in subclavian arteries, an abdominal aortic aneurysm, and acute angulation of the thoracic aorta, making transfemoral or subclavian access unfeasible. However, carotid arteries were found to be free from significant pathology (Figure 1A). Consequently, the patient was referred for the TAVI procedure from alternative transcarotid access along with the institutional Heart Team qualification. Taking into consideration all comorbidities and challenging valve anatomy, the Myval Octacor valve seemed to be the most beneficial for our patient.

On admission, the patient presented stable symptoms of class III heart failure according to the New York Heart Association. Echocardiography confirmed the presence of severe aortic stenosis with peak systolic velocity of 4.8 m/s, mean aortic gradient of 56 mm Hg and preserved left ventricular ejection fraction. Coronary angiography did not reveal any significant lesions.

As the first step of TAVI, the right radial artery and the femoral vein were punctured, allowing for angiographic control and rapid pacing, respectively. Access to the right common carotid artery (Figure 1B–C) was obtained through a 4 cm skin incision starting 3 cm above the clavicle and extending along the medial border of the sternocleidomastoid muscle. After the artery was exposed, its wall was palpated, and no atherosclerotic plaques were found at the site of the planned sheath insertion. Two oval-shaped Prolene 5-0 purse-string sutures were placed through the arterial adventitia to avoid vessel stenosis. A direct needle puncture of the carotid artery was performed under visual control. The next steps were performed in a standard manner until a 14Fr Python sheath (Meril Life Sciences, India) was inserted. The aortic valve pre-dilatation was performed using the Mammoth ballon 23 × 40 mm (Meril Life Sciences, India), followed by the Octacor 29 mm valve implantation (Figure 1D–F). Control aortography showed no paravalvular leak and good patency of the coronary arteries. There were no major periprocedural complications,

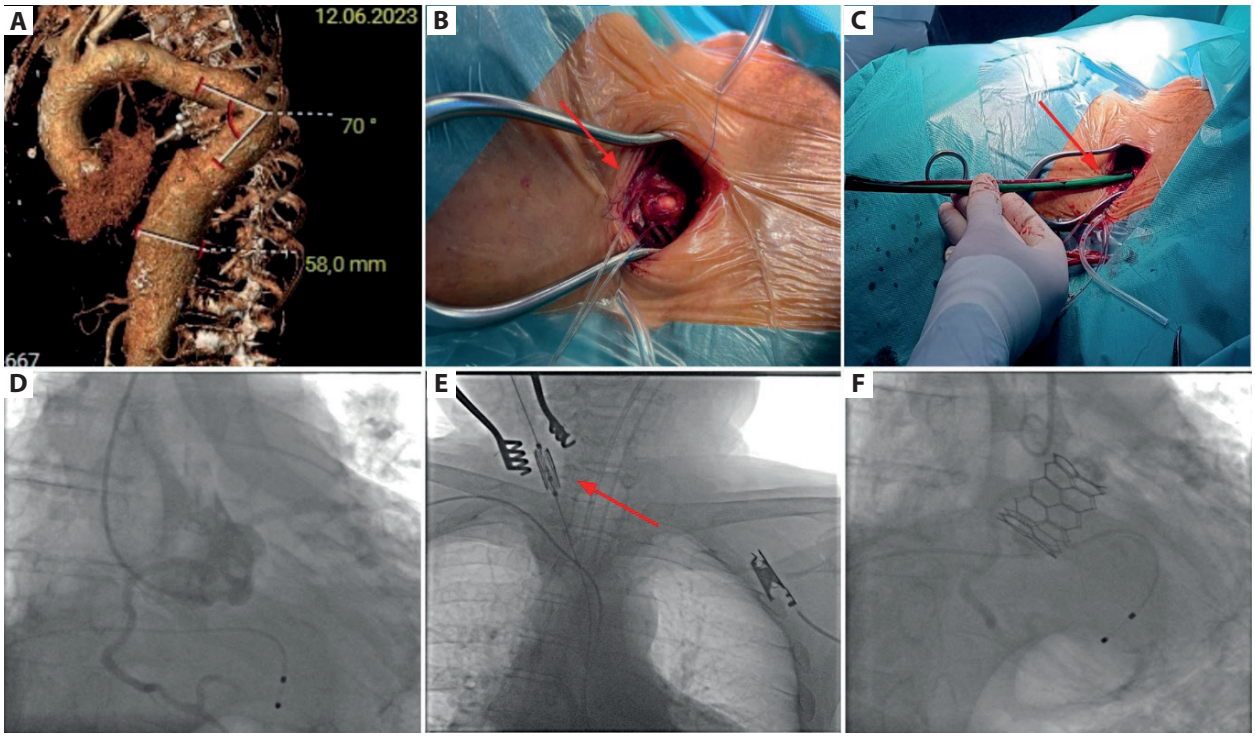

Figure 1. A. Computed tomography angiography with 3D reconstruction showing acute angulation of the thoracic aorta, an abdominal aortic aneurysm, however with the appropriate vessel size and lack of significant stenoses within the range of the right common carotid artery. **B–C.** Surgically exposed transcarotid access for the transcatheter aortic valve implantation procedure (red arrows). **D.** Arteriography before valve deployment. **E.** Transcarotid access — valve delivery (red arrow) and positioning. **F.** Successful deployment of the transcatheter heart valve

however the loss of 50 ml of blood was noted. The post-procedural echocardiographic assessment confirmed the correct position of the TAVI valve with the maximal/mean gradient reaching 13/7 mm Hg, and no paravalvular leak was detected. Ultimately, the patient was discharged in good condition.

In conclusion, the Octacor valve can be considered a safe TAVI device, even when using alternative procedural accesses.

Supplementary material

Supplementary material is available at https://journals.viamedica.pl/polish_heart_journal.

Article information

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