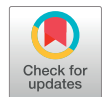


- In both options the circumflex branch is considered a secondary branch with the strategy of keeping it open but not treating it right away.
- Percutaneous closure using the Perclose ProGlide Suture Mediated Closure (Abbott Vascular, Redwood, CA, United States).

Regarding the type of valve, in this decision it is of paramount importance to take into consideration the possible need to access the LMS after the TAVI especially if we think that the rate of restenosis in trifurcations treated with 2 or more stents is usually high. The height of the LMS ostium the length and calcification of the leaflets and the width of the sinuses should all be studied by computed tomography scan prior to planning the implantation and choosing the device. The advantage of the expandable balloon device is that it is shorter preventing in many cases the jailing of the LMS; the setback is that overpacing is required for implantation purposes. Self-expandable and fully recapturable devices can be implanted without overpacing and with little contrast if using fusion imaging technology or transesophageal ultrasound; the setback is that, although these devices have wider cells, the LMS is jailed, which could make access difficult after implantation. Nevertheless, the interventional team should use the model they are most experienced with.

Simultaneous transfemoral TAVI and angioplasty of unprotected trifurcated left main coronary artery. Case resolution



Procedimientos simultáneos de TAVI transfemoral y angioplastia de tronco común trifurcado no protegido. Resolución

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CASE RESOLUTION

After assessment by the Heart Team and taking the patient's age and high surgical risk into consideration, surgical treatment was discarded. The study was completed with a computed tomography angiography that confirmed that the patient was eligible for transcatheter aortic valve implantation (TAVI) through transfemoral access (figure 1A,B).

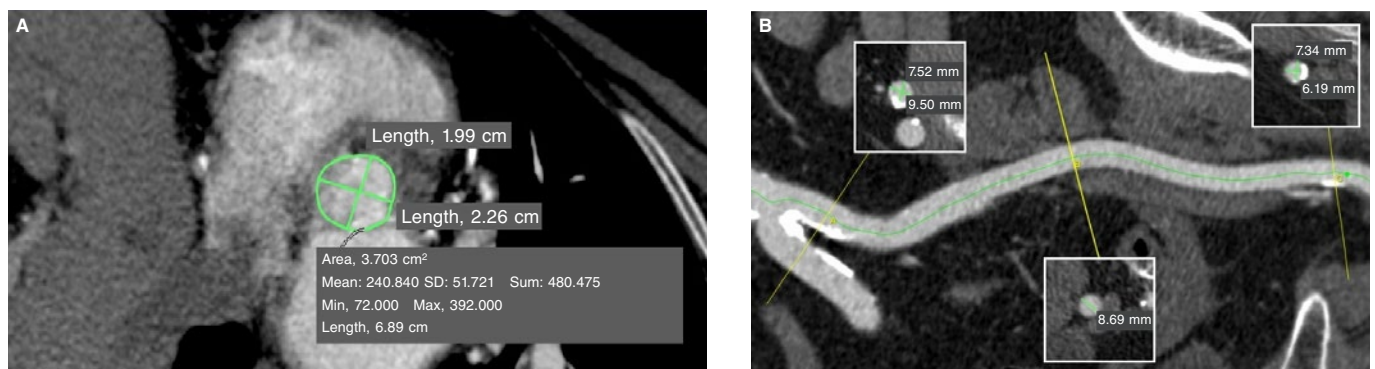


Figure 1. Computed tomography angiography prior to the procedure. **A:** measurements of the aortic valve ring: minimum diameter, 1.99 cm; maximum diameter, 2.26 cm; perimeter, 6.89 cm; area-derived perimeter, 3.70 cm². **B:** measurements of the left iliac-femoral axis: minimum diameter of the common femoral artery, 6.19 mm; minimum diameter of the external iliac artery, 8.69 mm; minimum diameter of the primitive iliac artery, 7.52 mm. M, mean; max, maximum; min, minimum; s, sum; SD, standard deviation.

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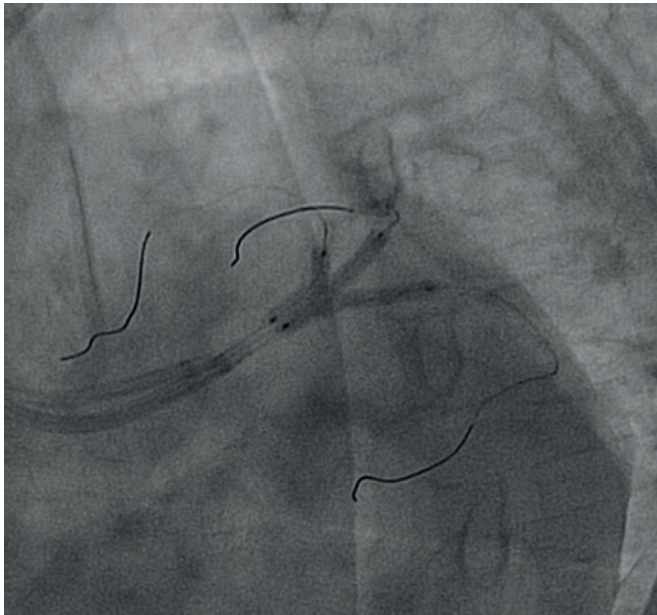


Figure 2. Simultaneous implantation of 3 drug-eluting stents in the anterior descending artery and intermediate branches.

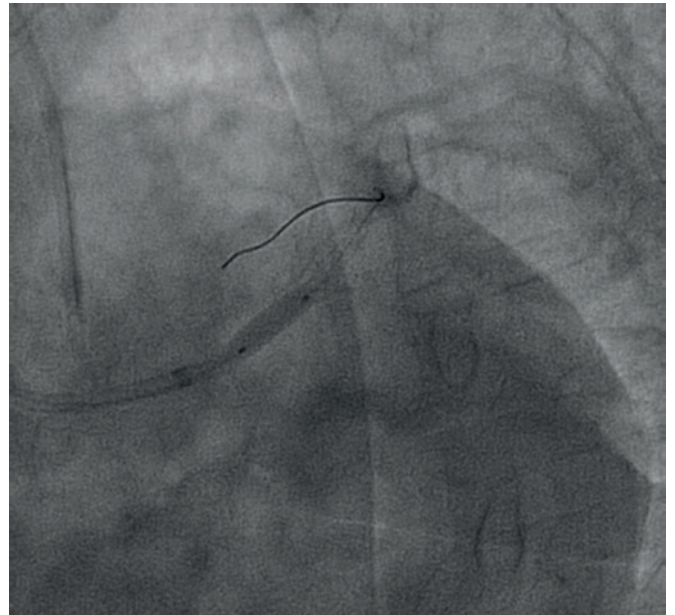


Figure 3. Implantation of a drug-eluting stent in the left main coronary artery.

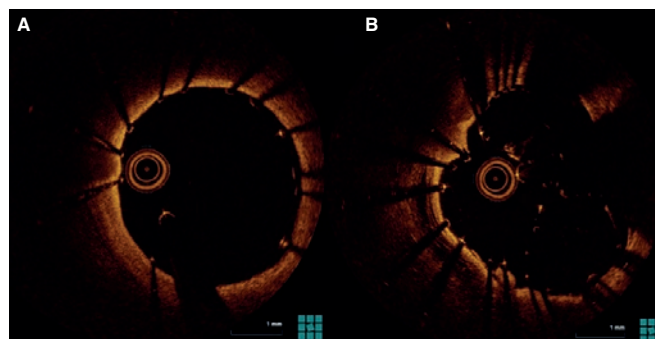


Figure 4. Optical coherence tomography after percutaneous coronary intervention. Good expansion and apposition of the drug-eluting stent in the left main coronary artery (A), and of the stents deployed in the trifurcation with adequate lumen (B).

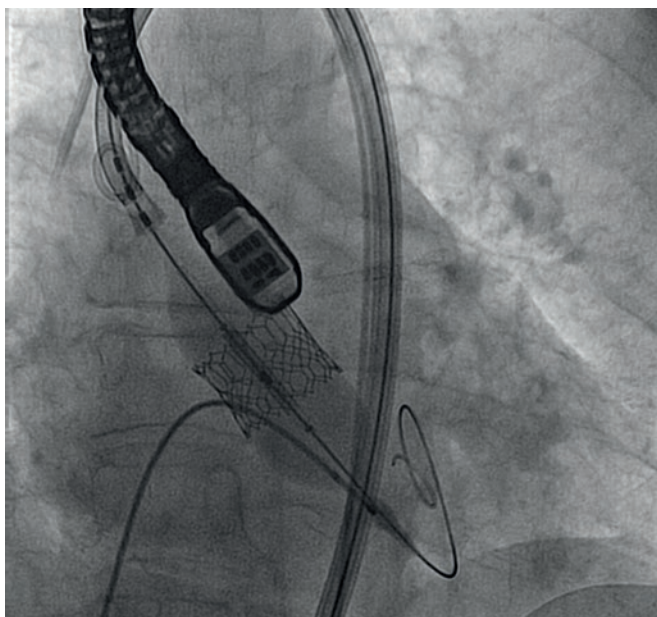


Figure 5. Implantation of an expandable aortic valve with a 23 mm balloon.

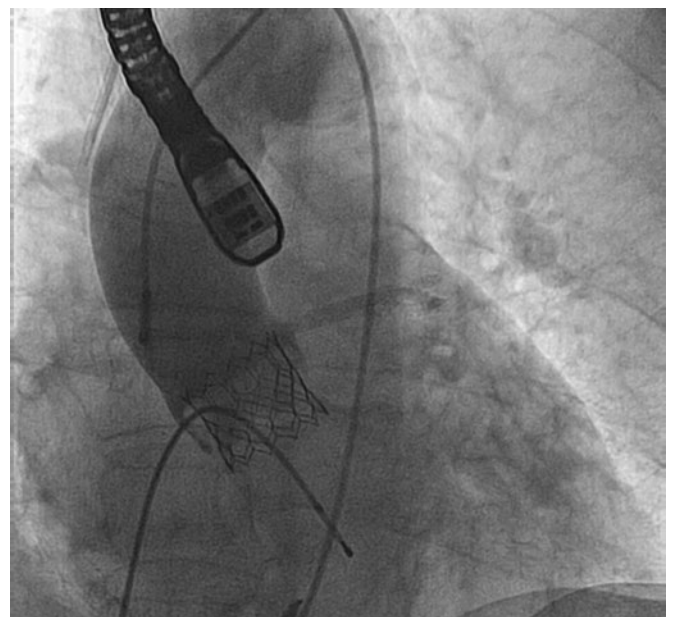


Figure 6. Final aortogram. Correct alignment of aortic valve leaflets and stents patency.

The procedure was performed under general anesthesia using the bilateral femoral access. Two 6-Fr, and 7-Fr Extra Back Up (EBU) guiding catheters were inserted into the left main coronary artery (using the "ping-pong" guiding catheter technique). Both the coronary ostia of the anterior descending coronary artery and the intermediate branches were sequentially predilated using one 2.0 mm cutting balloon (video 1 of the supplementary data) and 3 drug-eluting stents were simultaneously implanted in the anterior descending coronary artery (2.25 x 15 mm sirolimus-eluting stent), the first intermediate branch (2.25 x 18 mm zotarolimus-eluting stent), and in the second intermediate branch (2.25 x 18 mm sirolimus-eluting stent) and in this order; then we proceeded with the simultaneous inflation of the balloons (figure 2). Finally, a fourth drug-eluting stent was implanted (a 4 x 8 mm zotarolimus-eluting stent) in the left main coronary artery (figure 3 and video 2 of the supplementary data) with good results according to the optical coherence tomography (figure 4A,B). Immediately after the percutaneous coronary intervention (PCI), an expandable aortic valve with a 23 mm balloon was implanted (figure 5 and video 3 of the supplementary data) also with good results (figure 6 and video 4 of the supplementary data).

At the 28-month follow-up, the patient remained asymptomatic and with a normal functioning aortic valve.

In patients with severe aortic stenosis and left main coronary artery disease deemed to be at high surgical risk, using combined procedures (TAVI and PCI) is safe, feasible and with similar results compared to an isolated TAVI procedure.¹ The combination of PCI plus TAVI on the left main coronary artery trifurcation lesion is rare.² This case shows a safe non-surgical management of a left main coronary artery trifurcation lesion and severe aortic stenosis with good long-term results.

SUPPLEMENTARY DATA



Supplementary data associated with this article can be found in the online version available at <https://doi.org/10.24875/RECICE.M19000049>.

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