Vascular Sealing Implications in Transfemoral Transcatheter Aortic Valve Implantation. Response

Implicaciones del sellado vascular en el implante percutáneo transfemoral de válvula aórtica. Respuesta

To the Editor,

We appreciate the interest and comments of Vavuranakis et al regarding our article on the usefulness of placing a guide wire from the contralateral femoral artery in the management of vascular complications associated with transcatheter aortic valve implantation (TAVI).[1]

Peripheral vascular disease following TAVI procedures has been identified as a predictor of mortality in a number of studies[2] and, although technical improvements and the greater experience of the operators have contributed to increase the safety of the procedure, vascular complications continue to be frequent events, especially in this group of patients. Any strategy that minimizes the risks or facilitates the management of these complications proves to be of great interest for the future of transfemoral TAVI procedures.

In their letter, the authors describe their experience in the management of vascular access for implantation of the CoreValve self-expanding aortic valve and emphasize two aspects that, in their opinion, could help to reduce the incidence of vascular complications: optimal puncture for therapeutic femoral access and the use of a balloon in the contralateral femoral artery at the time of percutaneous closure.[3,4]

The authors of the letter report that inflation of a balloon above the site of the arteriotomy during percutaneous closure would promote hemostasis, as it would reduce hydrostatic forces exerted on the vessel lumen and aid in stabilizing the Prostar sutures. However, in the technique they describe, the advance of the contralateral guide wire is carried out at the end of the procedure, with introduction of the wire into the sheath of the valve after it had been withdrawn to the level of the common iliac artery, and inflation of the immediately proximal coaxial balloon, without going beyond the entry site of the sheath with the guide wire at any time. This would make it difficult to manage complications located directly at the puncture site. In this respect, we prefer the advance of a contralateral guide wire at the beginning of the procedure, immediately before the therapeutic puncture, to provide immediate and direct access to all the possible complications that can develop in the iliofemoral arteries throughout the duration of the procedure. Moreover, the advancement of the contralateral guide wire prior to therapeutic femoral puncture may aid in the correct choice of the puncture site and introduction of the sheath, using direct fluoroscopic images to follow the movement of the guide wire at the time of puncture. On the other hand, on the basis of our findings in a continuous series in which a proximal balloon was utilized systematically, we consider that this measure is not necessary in all patients.

The other point the authors emphasize is the importance of a correct therapeutic femoral puncture in the reduction of vascular events, after the evaluation by computed tomography of the aortoiliac axis in all patients. They establish that the puncture of the common femoral artery just below the inferior epigastric artery reduces the vascular complications associated with these procedures. We are convinced that this method has resulted in important benefits for the patients treated by the authors of the letter. However, we continue to believe that angiographically-guided puncture based on the anatomy of the patient, performed from the contralateral femoral artery, proves to be a very simple and practical technique to assure successful access for the therapeutic femoral puncture, and can be facilitated by using the guide wire advanced distally from the contralateral femoral artery as a reference prior to puncture.

We consider that a progressive simplification of transfemoral TAVI procedures using a prophylactic contralateral guide wire, together with other technical variations, such as direct implantation of the valve,[5,6] would enable us to reduce the number and severity of complications in procedures of this type.

On the other hand, the introduction of new models of valves, like Edwards-SAPIEN 3 (with 14-Fr delivery systems for 23-mm and 26-mm valves and of 16 Fr for 29-mm valves) and the CoreValve Evolut with its sheathless system, will undoubtedly increase the number of patients who could benefit from these techniques, as they reduce the risk and complications associated with vascular access.

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