Supera Stent. Two years experience in severe femoropopliteal disease

Lonjedo E, Gómez J, Ruiz A, Casula E, Magán A
Vascular and Interventional Radiology Unit. Doctor Peset University Hospital, Valencia, Spain

Introduction
The arterial femoropopliteal segment is characterized by anatomic features that limit the patency of endovascular treatments. The length, multiplicity and calcification of the lesions, added to flexion, traction and rotation forces affect the results on this territory.

The Supera stent is a self-expanding stent formed from six pairs of interwoven nitinol wires. This design avoids stent fracture by adapting to arterial anatomy through improved flexibility, kink resistance, and radial strength, making it more suitable to withstand dynamic forces such as compression, torsion, bending, shortening and pulsation.

Objective
Analyze our two years initial experience with the Supera Stent in severe lesions in femoropopliteal territory.

Material and methods
From December 2013 we have treated 29 patients, implanting 47 stents. The mean age was 73.8, and 37% of the patients were between 79-84. 21 men and 8 women enrolled the study.

Results
Immediate clinical and technical success was 100%, with no initial complications. Follow-up ranged between 6 and 24 months (mean 15 months). After this two years experience with Supera stent, we obtained a cumulative primary patency of 89.9% with secondary patency of 93.1%. At 12 months, primary and secondary patency were 91.6% and 95.8% respectively. 90% of the patients upgraded their clinical stage at least one step. Only one patient, with 6 months stent occlusion, worsened clinical signs. No stent fracture was detected during follow-up.

Discussion
Endovascular stents have significantly increased the patency rate in femoropopliteal lesions beyond that of balloon angioplasty alone. However, a notable complication of stent placement for arterial disease is stent fracture at flexion points. New generation laser-cut nitinol stents suggest lower fracture rate (5%). The series of Supera stent have shown great resistance to fracture, with promising patency rates (Table 2). Our results are similar to those published, keeping in mind that our series includes high rate of critical limb ischemia and complex arterial lesions.

In our two-year experience, predilatation with oversized balloon and precise deployment technique is essential for successful outcome.

Conclusions
Our initial results with Supera Stent are successful in terms of patency and safety, with promising results in complex and long femoropopliteal lesions.

In our experience, good pre-dilatation and tutored learning curve are necessary. Longer follow-up and larger studies are needed.

References