**Clinical outcome of popliteal artery aneurysms treated with a heparin-bonded stent graft**

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**Abstract**

*Objective*: The use of self-expanding stent grafts for the treatment of popliteal artery aneurysms (PAA) is a matter of debate although several studies showed similar results as compared to open surgery. In the past years, a new generation stent graft with heparin-bonding technology became available. The aim of this study is to present the results of endovascular PAA repair with heparin-bonded stent grafts.

*Methods*: All patients with PAA treated with a heparin-bonded polytetrafluoroethylene (ePTFE) stent graft between April 2009 and March 2014 were prospectively gathered in a database and retrospectively analyzed. Data were collected in four participating hospitals. Standard follow-up consisted of clinical assessment, duplex ultrasound examination and X ray of the knee at 6 weeks, 6 months, 12 months, and annually thereafter. Primary endpoint of the study was the primary patency. Secondary endpoints were primary-assisted and secondary patency rates and limb salvage rate.

*Results*: A total of 72 PAA were treated in 70 patients. Mean age was 71.2 ± 8.5 years; 93% was male (n=65). The majority of the PAA were asymptomatic (78%). Sixteen cases (22%) had a symptomatic PAA of which seven (44%) presented with acute ischemia. Early postoperative complications occurred in two patients (3%). Median follow-up was 13 months (range 0-63 months). Primary patency rate at 1 year was 83% and after 3 years 69%; primary assisted was 87% at 1 year and 74% after 3 years. Secondary patency rate was 88% and 76% at 1 and 3 years respectively. There were no amputations during follow up.

*Conclusion*: Endovascular treatment of PAA with heparin bonded stent grafts is a safe treatment option with good early and mid-term patency rate comparable to open repair using the great saphenous vein. There were no amputations in this series.