

Long Term Results of Arterial Revascularization with Omniflow II® Biosynthetic Grafts: A Single Center Experience

Baran Şimşek¹, Davut Azboy², Zeki Temiztürk³

¹ Department of Cardiovascular Surgery, Medicana International Hospital, İstanbul, Türkiye

² Department of Cardiovascular Surgery, Elazığ Fethi Sekin State Hospital, Elazığ, Türkiye

³ Department of Cardiovascular Surgery, University of Health Sciences Cam and Sakarya State Hospital, İstanbul, Türkiye

Abstract

Aim: The aim of this study is to analyze the long-term outcomes of above-knee femoro-popliteal bypass procedures with Omniflow® II biosynthetic grafts. Primary patency and graft related complications were the end points of the study.

Methods: Between January 2012 and January 2021, a total of 50 patients (42 males, 8 females) were revascularized using an in-situ Omniflow® II graft. Demographic, clinical, operative and postoperative characteristics of the patients were analyzed retrospectively.

Results: Mean age was 63.8 ± 10.1 (range 40-82) years. Fifty above-knee femoropopliteal bypass procedures were performed. Four patients (8%) were operated on due to a previous vascular graft infection where 8 (16%) were operated on due to a previous occlusion. Primary patency rate was 88%. Early graft thrombosis occurred in 2 (4%) patients where late graft stenosis unrelated to the anastomotic sites was encountered in 1 (2%) patient. An endarterectomy on either the proximal or distal site of the anastomosis were performed in 12 (24%) patients. Mean follow-up was 32.9 ± 20.8 (range 12-90) months. Three (6%) patients died due to a COVID-19 infection. No graft infection nor mortality related to arterial bypass procedures was encountered.

Conclusion: The Omniflow® II biosynthetic graft provides superior results in treatment of above-knee femoro-popliteal bypass procedures with high patency rates and low incidence of graft infection and aneurysm formation.

Keywords: Biosynthetic graft, vascular grafting, revascularization, peripheral arterial disease

1. Introduction

Patients with peripheral arterial disease (PAD) have a poor circulation due to decreased arterial perfusion. The arterial blood flow to the distal extremity is restricted most frequently by systemic atherosclerosis. Its prevalence is 3-10% between 40-59 years and 15-20% over 70 years¹. The most significant risk factors for PAD are diabetes mellitus (DM), hypertension (HT), hyperlipidemia (HL), chronic kidney disease (CKD), and smoking². In addition, there is an increased rate of myocardial infarction, ischemic stroke, and cardiovascular death in patients with PAD³.

There is a remarkable elevated risk of adverse limb events like ischemic ulceration and gangrene unless treated. Revascularization deemed mandatory, particularly in patients with more advanced symptoms and presentations. Duplex ultrasonography, computed tomography angiography (CTA), magnetic resonance angiography or conventional peripheral angiography should be performed to diagnose and define the anatomy before revascularization. Though endovascular approaches have extended the invasive treatment modalities in peripheral arterial occlusive disease, surgical interventions must be considered especially for long occlusive disease, aneurysm formation, vascular graft infection and failure of endovascular treatment.

Despite the fact that superiority of the autogenous grafts are well-known, prosthetic grafts should be the selected conduit type in a variety of patients especially when autogenous grafts are not accessible, available or suitable⁴. Since 1983, the Omniflow® vascular grafts have been in clinical practice and advances in technology throughout this time period led to the current Omniflow® II vascular graft (OVG)⁵⁻⁷. Omniflow® II (Bio Nova International, Victoria, Australia) is created by using cross linked ovine collagen and an endoskeleton made of polyester mesh which

* Corresponding Author: Baran Şimşek,
e-mail: simsekbaran@yahoo.com

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Long Term Results Of Arterial Interventions

Patrick Vollmar



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