

LONG-TERM PATENCY OF A RAK COLLAGEN VASCULAR PROSTHESIS

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Abstract

Knitted prostheses are the most frequently used vascular substitutions. The RaK collagen knitted prosthesis is a Czech product designed and manufactured by the Hosiery Research Institute (Výzkumný ústav pletářský) in Brno. They are impregnated with collagen during the manufacturing process. Collagen ensures their impermeability, minimal blood loss during implantation and good healing. The aim of this retrospective study was to evaluate the results of vascular operations based on the RaK prostheses, with particular attention paid to their long-term patency. The study included 80 patients who were operated on at the 2nd Department of Surgery in the period from 1992 to 1996. Vascular surgery was performed in the aortofemoral area and the underlying diagnoses were Leriche's syndrome, asymptomatic aneurysm of the abdominal aorta, stenosis or obliteration of the iliac bed and symptomatic aneurysm of the abdominal aorta. The most frequent risk factors recorded in the patients studied were: smoking, disorders of lipid metabolism, and hypertension. Twenty-five patients (31.2 %) had undergone vascular surgery before they were included in this study. Within 3 years of surgery, nine patients (11.2%) experienced obliteration of the prosthesis. At 12, 24 and 36 months after surgery, the prostheses were patent in 92.5%, 90 % and 88.8 % of the patients, respectively. It is concluded that the RaK collagen prosthesis is a Czech product of high quality, low price and parameters comparable with the other types of vascular prostheses currently used.

Key words

Long-term patency, Vascular prosthesis, Aortofemoral bed

INTRODUCTION

Typical characteristics of synthetic arterial substitutions are porosity, durability, dilatation, flexibility, inertia, thrombogenicity and sensitivity to infection. In 1952, Voorhees and his colleagues demonstrated that porous synthetic material can serve as a satisfactory vascular substitution (10). It has never been found out why porosity is inevitable for the correct function of a prosthesis. For a long time it was assumed that if the knitted wall of a prosthesis was porous enough, fibroblasts from the surroundings would grow through it and would help to produce a biological surface in the lumen which had the structure of a neointima lined with pseudoendotel. Today it is known that the neointima is formed only in the range of several centimetres from the site of anastomosis and that this applies more to proximal anastomoses than distal anastomoses. In long bypasses, their central part remains covered by more or less organised fibrin that

