

## WILL THE CZECH COLLAGEN PROSTHESIS STAND FOREIGN COMPETITION?

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### Abstract

The Czech collagen prosthesis - the so-called RaK Prosthesis made by Výzkumný ústav pletářský Brno, was introduced into clinical practice in 1990.

It is a knitted prosthesis finished on its external side by a continuous film of a chemically modified bovine collagen. That secures its nearly zero permeability and thus even extensive vascular reconstructions can be performed without a more significant blood loss. However, some rules must be kept, particularly moisturing the prosthesis in saline solution immediately before its implantation.

The collagen layer is gradually degraded by enzymes. That enables a good healing in of the vascular prosthesis and secures its resistance against infection as well.

Due to these properties, collagen prosthesis has attracted the interest of vascular surgeons.

The demands laid on an artificial vascular prosthesis are met by that of RaK type as shown by the results of the study carried out, according to the methodology of EN 540 European Norm Proposal, at the II<sup>nd</sup> Clinic of Surgery in Brno.

Besides others, 90,7 % long-lasting patency, 0,9 % infection incidence of Szilagyí III type, and last but not least, even economical availability made us to state that RaK Prosthesis can stand well even in the competition with foreign collagen vascular prostheses.

### Key words:

collagen-impregnated vascular prosthesis - clinical study.

### INTRODUCTION

One of the basic types of artificial vascular prostheses is represented by a knitted prosthesis (Firt *et al.*, 1991). It has passed through the development from porous prosthesis with the necessity of pre-shrinking, through the so-called DKB prosthesis impregnated by a fibrine glue before implantation up to knitted vascular prosthesis impregnated with collagen during its production. Thus, the impermeability of the prosthesis is secured and blood loss during implantation minimized (Barral *et al.*, 1995). Then gradual absorption of this artificially placed collagen layer enables a good healing-in of the prosthesis as the principal precondition for the vascular prosthesis resistance to infection. This complies with the demands of vascular surgeons on low porosity with simultaneous ability of good healing-in.

The latter also involve collagen vascular prostheses developed in the Výzkumný ústav pletářský (Research Institute of Hosiery) in Brno (*Fig. 1*). They

