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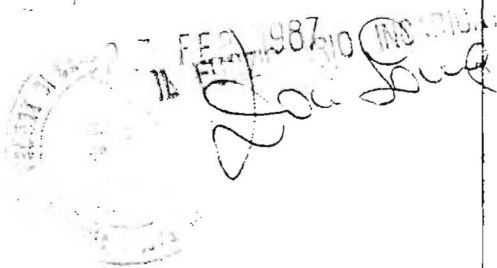
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**ABSTRACTS**



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ELASTOMERIC MICROVASCULAR PROSTHESES BASED ON FIBRIN:  
PRELIMINARY RESULTS FROM IMPLANTS IN RABBITS.

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In the last few years the problem involved in the use of synthetic prostheses to be applied in the circulatory system seems, as far as it is concerned the replacement of arteries of large diameter, to be solved in many cases by the use of prostheses made of Teflon or Dacron fabrics.

These however fail when are employed as small diameter vascular prostheses (less than 7 mm ID).

With the aim of offering a contribution to this field, with particular regard to the microvascular prostheses, we have designed a two-component biomaterial composed by:

- an elastomer, belonging to the general class of segmented polyurethanes which possesses mechanical properties similar to those of natural arteries
- a biological polymer, fibrin, whose properties improve the material's hemocompatibility during the first phase of blood contact.

The biomaterial, obtained by mixing a solution of the synthetic polymer with fibrinogen of human origin, was sprayed onto a rotating support.

The transformation of fibrinogen into cross-linked fibrin, which is promoted by thrombin, factor XIII and calcium ions, take place on the final product. 7 microprostheses (5 to 6 cm long, 2.2 mm OD, 2.0 mm ID) obtained with the procedure described above, have been implanted between the abdominal aorta and the left femoral artery in many rabbits weighing 1500-1800 g.

The termino-lateral anastomosis was performed with nylon 10.0 monofilaments, coated with fibrin glue. The functionality of the prosthesis was evaluated with a microvascular Doppler MF20 (EME) and successively checked in a arteriographic control. From the first results we are able to affirm that this type of prosthesis has the following properties:

- easy manipulation, and good mechanical characteristics;
- easy anastomosis, and good resistance to stitch induced stress;
- no flux modification during Doppler examination;
- patency in medium term without antiplatelet treatment (all the animals are still alive, 4 of them after 6 months from the date of implantation)
- excellent healing of the surrounding tissue.