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QUANTITATIVE CHANGES IN COLLAGEN FOLLOWING LONG TERM IMPLANTATION OF BIOLOGIC AND SYNTHETIC MESHES IN THE RABBIT ABDOMEN

Hypothesis / aims of study

We sought to evaluate the effects on collagen of rabbit tissue after long term implantation of synthetic and biological graft materials. The use of synthetic and biological meshes in incontinence procedures has gained increasing interest in recent years. Studies have shown an association between qualitative and quantitative changes in connective tissue and the presence of genuine stress urinary incontinence. The main structural protein of connective tissue is type I collagen.

Study design, materials and methods

A total of 72 rabbits underwent laparotomy and were implanted with acellular collagen biomesh (n=36) or polypropylene (n=36) in the abdomen. There was a -no mesh- control group (n=12) and a second –rupture of fascia, no mesh-control group (n=12). Tissue was harvested 3, 6 and 9 months later and is undergoing measurement of collagen type I, III with Elisa kits

Results

As far as time is concerned, with a small sample available, both graft materials promote an increased detection of collagen. Considerable variability is observed in the collagen detection when synthetic graft was used.

Interpretation of results

Implantation of the mesh induces a foreign body reaction followed by the development of connective tissue. The variability which is observed in synthetic grafts may be related to the degree of degradation and host tissue incorporation.

Concluding message

Urinary incontinence and pelvic floor disorders are frequent problems among women, with a serious impact on health and quality of life. Both biological and synthetic meshes are used in reconstructive surgery and this study aims to compare them.

Specify source of funding or grant	none
Is this a clinical trial?	No
What were the subjects in the study?	ANIMAL
Were guidelines for care and use of laboratory animals followed or ethical committee approval obtained?	Yes
Name of ethics committee	1.Ethics committee of Aretaieio Hospital 2.Veterinary Authority of East Attika