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AUTOLOGOUS FULL- THICKNESS SKIN GRAFT AS REINFORCEMENT MATERIAL IN THE REPAIR OF COMPLEX HERNIAS

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Akademisk avhandling

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Abstract

Background Abdominal wall hernia is a common issue in the realm of surgery. Many patients suffering from a hernia require surgical intervention, and over 8000 abdominal hernia repairs are performed each year in Sweden. While most hernia patients undergo successful hernia repair, some types of hernia are associated with high recurrence rates and considerable risk for complications, that in some cases prove fatal. This thesis is based on repair of two such types - giant incisional hernia and parastomal hernia. In many cases, the complications associated with repair of giant incisional hernia and parastomal hernia can be linked to the introduction of foreign mesh material placed in the abdominal wall as reinforcement. Our hypothesis was that the use of autologous full-thickness skin graft instead of synthetic mesh commonly used today would improve the outcome of these repairs.

Aims The overall aim of this thesis was to investigate the use of autologous full-thickness skin grafts as reinforcement material in the repair of complicated types of hernia.

Results No significant differences regarding recurrence rate, abdominal muscle strength, and quality-of-life were seen at the 12-month and long-term follow-ups of a randomised controlled multicentre trial comparing the use of full-thickness skin graft with synthetic mesh reinforcement in the repair of giant incisional hernia.

Tensile strength and resistance to suture tearing of full-thickness skin were shown to be superior to conventional synthetic and biological meshes. This together with previously performed animal studies allowed us to proceed with the development of a method of parastomal hernia repair with full-thickness skin graft as reinforcement material. This novel method of repair was tested in four pilot patients without any major procedure-related complications. We present a study protocol for a larger randomised controlled multicentre trial to evaluate autologous full-thickness skin graft as reinforcement in parastomal hernia repair.

Conclusions Autologous full-thickness skin as reinforcement in giant incisional hernia repair produced outcomes similar to synthetic mesh. Its use in parastomal hernia repair is feasible and will be more thoroughly evaluated in a larger trial.

Keywords

Incisional hernia, parastomal hernia, full-thickness skin graft, tensile strength, RCT, abdominal wall strength, quality-of-life, IPOM.

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