Disruption of experimental fundic folds is prevented by interserosal scarring.

Authors: Isolauri J., Viljakka M., Helin H., Lehto M.U.K., Luostarinen M.

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Abstract:

Background. The main cause of recurrent reflux symptoms after Nissen fundoplication is disruption of the fundic wrap. Reoperation has shown a lack of scar tissue between the serosal surfaces of the fundic folds in these cases. Methods. Attempts were made to induce serosal scarring during fundoplication performed in rabbits. In group 1 the serosal folds were attached to the upper fundus with three non-absorbable seromuscular sutures. In group 2 Teflon pledgets were placed between these sutures. Fibrin glue was injected between the folds in group 3 and polyglycolic acid mesh was inserted in group 4. Results. When the rabbits were killed 6 months later, the serosa had unfolded and no macroscopic or microscopic scar tissue was found between the serosal surfaces, except in five of the six rabbits in group 3, in which fibronectin, laminin and collagen types I and III were present in interserosal scar tissue. Conclusion. Application of fibrin glue between the serosal surfaces of the fundic folds may prevent disruption of Nissen fundoplication.