Valorisation
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Introduction

This thesis describes available evidence and outcomes of (new) surgical treatments for both rectovaginal and perianal fistulas. Nowadays, medical professionals, insurance companies and patients demand the use of evidence-based medical treatments. Specifically for the treatment of these two types of fistulas the treatments are far from evidence-based. Low incidence numbers and the many available surgical techniques make it difficult to start and compare high quality studies. The data regarding best treatment options are therefore still lacking. However, patients need to be treated for these conditions and available data will need to suffice for now in clinical practice, even though this data consists mostly of case series. The new techniques described in this thesis showed improvement of closure rates of the fistulas. Data regarding secondary outcomes has not been investigated thoroughly yet, but will be part of future research. Chapters 3 and 9 confirm that the data we have on our surgical treatments are not of high quality, and suggest ways of improving our research. Chapter 6 shows that the number of patients with Crohn’s disease developing fistulas is high and that this number will probably rise in the future with more interest being shown for these fistulas. As a result it is likely that more patients will require treatment making it even more import to improve our treatments to prevent recurrences and re-treatments.

Economical relevance

The results of this thesis will hopefully result in future improvement of treatment of both rectovaginal and perianal fistulas. The improvement of these treatments will not only need to improve the outcome for patients, but will also need to result in a decrease of costs of treatment. The goal within the surgical community is to improve operative techniques for the treatment of these two types of fistulas. Nowadays often more than one procedure is needed to reach the desired result, closure of the fistula. In many cases this result will not be reached, viewing the success rates reported in this thesis. The development of new operative techniques will hopefully reduce the number of re-operations. This will consequently lower overall costs. Besides costs related to the operations, other profits can be achieved. Many patients with persisting fistulas have to use many types of bandages, medication and other supporting materials. In time these costs can increase and could be lowered by improving surgical treatment. Other outcome measurements of fistula treatment that we use nowadays, are faecal incontinence and quality of life. In case a patient becomes faecal incontinent as a result of our surgical treatment this can result in extra operations, or the long-term use of dressings and medication with of course financial consequences. The use of colon irrigation to clean the intestines and the long-term use of stool thickening medication are some of the solution for this problem, but when symptoms are not controlled satisfactory continence restoring operations might be the next step.

Social relevance

Regarding quality of life mostly psychosocial functioning is impaired in patients with rectovaginal or perianal fistulas. The fistulas often cause unwanted odours and the loss
of faeces or fluids. Regularly this will result in patients avoiding social contacts and becoming isolated. Besides issues with personal contact, uncontrolled loss of odours and fluids may cause problems in the working atmosphere. Long-term absence from work is often seen. By improving these secondary outcomes of our treatments, we can possibly reduce the social consequences of the diseases.

**Implementation and innovation**

The new techniques described in chapters 4, 5 and 7 are still experimental. The current costs for the materials used in these new surgical procedures are still relatively high because a limited number of companies develop and produce them. Improvement of these materials, the user-friendliness and the lowering of production costs can result in both improvement of surgical outcome and more cost-effective treatment. For this thesis specifically we need to think of improvements in producing platelet-rich plasma (PRP), and the manner of introduction of the PRP in the fistula tract. Besides this, the development of techniques and devices that preoperatively predict the chances of success of the procedure by counting blood platelets, growth factors, and the quality of the PRP seem areas of interest for future research and development.

Regarding the mesh we used in chapter 3, many improvements are possible for the production of the mesh. Further research will be needed to show if improvement of the material could further improve the closure rates of the rectovaginal fistulas. Although the new materials and techniques described in this thesis are already used and shown useful in other medical areas, these are the first results of studies investigating rectovaginal and perianal fistulas. The use of the materials is therefore not new, but the way they are used is. Innovation in the treatment of these fistulas is needed, because of the previously described unsatisfactory results of current treatments, and further research into the new techniques described in this thesis will be part of this.

**Future research**

Parts of this thesis have already resulted in the start of a randomized controlled trial investigating the use of PRP of perianal fistulas. For this trial, and also for the further use of the mesh described in chapter 3, we work closely together with several biomedical companies. The experiences we gain by doing clinical research will result in further development and improvement of products we use. Additionally, steps are being taken to simplify treatments of these fistulas to lower costs of standard treatment. An example is the development of materials to easily probe fistulas resulting in shorter operating times and lower costs. Furthermore, diagnostics are being developed to explain and eventually hopefully predict why some patients do and others do not develop fistulas, which can result in more specific treatments for patients. Currently steps are taken to start these studies, which will be part of the future research into rectovaginal and perianal fistulas.