Rectal prolapse: enlightenment of the obscure

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Citation for published version (APA):
Chapter 1

General introduction and outline of this thesis
Introduction

The terminology rectal prolapse is often used to refer to external rectal prolapse (ERP). ERP is a full thickness protrusion of the rectal wall through the anus. It can be easily diagnosed by physical examination when typically a circular folding of the mucosa is seen. It has been postulated that ERP is preceded by internal rectal prolapse (IRP)\(^\text{5,7,3}\). IRP, also referred to as rectal intussusception or occult rectal prolapse, is defined as a funnel-shaped infolding of the rectal wall that occurs during the act of defaecation. IRP is thought to cause functional symptoms such as obstructed defaecation and faecal incontinence\(^\text{13}\). The concept of IRP preceding ERP has been a longstanding subject for debate. Observational studies showed that progression from IRP to ERP was only rarely observed at long-term follow-up\(^\text{4,5}\). In asymptomatic volunteer-studies\(^\text{6,7,8}\), IRP has been noted to be a common cine-defaecographic finding (in up to 50% of volunteers\(^\text{9}\)), thus clouding its clinical significance. And finally several publications have casted doubt upon the wisdom of a surgical solution\(^\text{10-12}\). Hence chasing the medical condition IRP and secondly its surgical treatment have suffered a bad reputation at the end of the last century\(^\text{11,14,15}\).

However recently renewed interest in surgery for IRP has been gained. Partially this is due to the development of new surgical techniques such as transanal rectal resection, such as the STARR procedure\(^\text{16-21}\) and a nerve-sparring technique anterior rectopexy with better functional outcome in patients treated for ERP and later, as a spin-off, treated for IRP\(^\text{22-24}\). Vice versa with the gained interest in IRP more research is done and published on physiologic aspects and symptomatology\(^\text{25-29}\). Much of the pathophysiology has not been clarified yet and more research is needed. Research on IRP is rather complex though, because of the interference of other functional pathologies such as slow transit constipation, anismus, lesions of the anal sphincter and even altered psychological behavior. Often a debate arises on cause and effect. Does slow transit constipation cause IRP due to excessive straining? Or is the slow transit constipation objectified with a transit study secondary to an outlet obstruction such as IRP? The same is true for found altered physiology in patients with IRP. Are sensory abnormalities in pelvic floor dysfunction a cause of obstructed defaecation and IRP the effect of sub sequential straining? Or is IRP by itself causing sensory abnormalities because the prolapsing pelvic floor strains the pudendal nerve which is believed to cause pudendal nerve neuropathy (and sensory abnormality as a consequence)? Cause and effect can often be turned around in this field of functional research. More fundamental research is needed to break this impasse.
The prolapsing pelvic floor has classically been divided into three different compartments; the anterior, middle and posterior compartment. In the prolapsed anterior compartment a cystocele can be detected, in the middle a vaginal and uterine prolapse and in the posterior a rectocele, enterocoele and an IRP (or rectal intussusception). A combination of all three simultaneously prolapsing compartments is often seen, displaying different variations of the same pathology. Dividing the three different compartments has partially been artificial and a logical consequence of medical (sub)specialisation. This same phenomenon is true for the prolapsing posterior compartment. The descending perineum syndrome, a term first coined by Parks, includes all three demonstrable patho-anatomical entities; IRP, rectocele (with or without enterocoele) and a descending pelvic floor (Figure 1). Again a display of three different entities of the same underlying pathology. In the Oxford pelvic floor centre IRP is regarded the central component of this commonly co-existing triad. In their experience a rectocele is uncommonly isolated (10%), and usually coexists with IRP (80%), though IRP may occasionally be seen without rectocele (10%). In Oxford IRP consequently has been the main object for treatment and research. The Oxford Rectal Prolapse Grade (ORPG, figure 2, table 1) has been developed for this purpose. With the ORPG one can not only determine the severity of the rectal prolapse (and subsequently choose the best treatment accordingly) but it gives a powerful instrument for research as well. Using a severity index makes it possible to study correlation or association of IRP with other entities more easily. (The ORPG is referred to in almost every chapter and therefore, for practical reasons, the diagram and table is displayed in this thesis only once in this introduction.)

The aim of this thesis is to study fundamental questions on etiology, symptomatology, pathophysiology and treatment of rectal prolapse (especially regarding IRP as a conceptual precursor of ERP) which until now often have been remained unanswered.

Figure 1, Descending perineum syndrome.
Outline of the thesis

In this thesis we have tried to research and answer fundamental questions on etiology, symptomatology, pathophysiology and treatment of rectal prolapse (mainly internal rectal prolapse).

In Chapter 2 the concept of internal rectal prolapse being a precursor of external rectal prolapse is researched by investigation of the relation of rectal prolapse grade and age.

In Chapter 3 the symptoms of a high-grade internal rectal prolapse are described.

In Chapter 4 the association between rectal hyposensitivity and a high-grade internal rectal prolapse is investigated.

In Chapter 5 the association between enterocoele and different grades of rectal prolapse is investigated.

In Chapter 6 the effect of botuline injections as a treatment of radiological diagnosed anismus is described. The presence of internal rectal prolapse and its influence of treatment outcome are investigated.

In Chapter 7 the short term results of the laparoscopic ventral rectopexy as a treatment for high-grade internal rectal prolapse are described.

In Chapter 8 the influence of slow transit constipation on the outcome of the laparoscopic ventral rectopexy for high-grade internal rectal prolapse is investigated.

In Chapter 9 the results are described for the laparoscopic ventral rectopexy as a treatment for external rectal prolapse in elderly patients.
Figure 2, Oxford rectal prolapse grade, a radiologic grading system.
### Grade of Rectal Prolapse

<table>
<thead>
<tr>
<th>Internal (IRP)</th>
<th>Recto-rectal Intussusception (RRI)</th>
<th>Recto–anal Intussusception (RAI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I (high rectal)</td>
<td>II (low rectal)</td>
</tr>
<tr>
<td></td>
<td>Descends no lower than proximal limit of the rectocele.</td>
<td>Descends into the level of the rectocele, but not onto sphincter/anal canal.</td>
</tr>
<tr>
<td></td>
<td>III (high anal)</td>
<td>IV (low anal)</td>
</tr>
<tr>
<td></td>
<td>Descends onto sphincter/anal canal.</td>
<td>Descends into sphincter/anal canal.</td>
</tr>
<tr>
<td>External (ERP)</td>
<td>External rectal prolapse (ERP)</td>
<td>V (overt rectal prolapse)</td>
</tr>
<tr>
<td></td>
<td>Protrudes from anus.</td>
<td></td>
</tr>
</tbody>
</table>

*Table 1*, Oxford rectal prolapse grade, a radiologic grading system.
References


