Rectal prolapse: enlightenment of the obscure
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Chapter 10

Summary and conclusions
The aim of this thesis is to address some fundamental questions concerning rectal prolapse. Eight studies were performed in order to investigate issues never adequately answered in literature before.

In **Chapter 1** a brief introduction on rectal prolapse is given as part of the prolapsing pelvic floor. The concept of internal rectal prolapse being a precursor of external rectal prolapse is further elucidated.

In **Chapter 2** the relationship of age to various stages of rectal prolapse using the Oxford Rectal Prolapse Grade (ORPG) is studied. A statistical significant difference in the mean ages of each group (rectal prolapse grade) was found, supporting the view of internal rectal prolapse as a precursor to external prolapse in the spectrum of rectal prolapse disease. On average males and females without vaginal delivery were younger and were found to have a faster prolapse progression rate than woman with vaginal delivery, suggesting another cause in the development of rectal prolapse. A collagen disorder, implicated in previous work, warrants closer scrutiny.

In **Chapter 3** an enumeration of symptoms caused by high-grade internal rectal prolapse and their frequency is described. Faecal incontinence (56%, of which 73% had urge faecal incontinence) was the most common symptom at presentation. Symptoms related to obstructed defaecation syndrome were the next most common, including incomplete evacuation (45%), straining (34%), digital assistance (34%) and repetitive toilet visits (33%).

In **Chapter 4** rectal sensory function in patients with obstructed defaecation and high-grade internal rectal prolapse is evaluated. Fifty-nine percent had normal sensation. Four percent had total hyposensitivity and 1% total hypersensitivity. A further 24% had partial hyposensitivity whilst 12% had partial hypersensitivity. These results rejects the hypothesis that hyposensitivity is the main and most important cause for obstructive defaecation in patients with high-grade internal rectal prolapse. Consequently a mechanical obstruction caused by the prolapsing rectal wall seems to be a better alternative to explain obstructive defaecation.

In **Chapter 5** the relationship between the presence of an enterocoele and severity of rectal prolapse grade is analysed. There was a statistically significant correlation between the presence of an enterocoele and increasingly severe grade of rectal prolapse, suggesting that rectal prolapse and enterocoele are part of the same pelvic floor process. It supports the hypothesis that an enterocoele is a marker of severe pelvic floor weakness. Apart from the severity of rectal prolapse an enterocoele is seen more frequently in females particularly after hysterectomy.
In Chapter 6 the efficacy of botulinum toxin to treat obstructed defaecation caused by radiologic anismus is analysed. The proctographic diagnostic criterion for anismus was nonemptying of barium after 30 seconds. Responders (resolution followed by recurrence of obstructed defaecation over a 1- to 2-month period) underwent repeat injection. Nonresponders underwent rectal examination under anaesthetic. Thirty-nine percent responded initially of which 95% underwent repeat treatment. Of these patients 95% percent had a sustained response and required no further treatment. Of the remaining 61% non-responders 94% were shown to have a high-grade rectal prolapse (ORPG grade 3-5) at EUA. These results show that simple proctographic criteria over diagnose anismus and under diagnose rectal prolapse. A response to an initial dose of botulinum toxin might be considered a more reliable diagnosis of anismus than proctography.

In Chapter 7 the short-term functional results of autonomic nerve-sparing laparoscopic ventral rectopexy (LVR) for internal rectal prolapse are described. The principles of LVR are limited anterior rectal mobilization avoiding the rectal autonomic nerve supply, support of the anterior rectal wall, performed with a minimally invasive technique. Seventy-five patients with a high-grade internal rectal prolapse (ORPG grade 3 and 4) underwent LVR. Mortality (0%), major (0%) and minor morbidity (4%) were acceptably low. Median length of stay was 2 days. Constipation (Wexner score) and faecal incontinence (FISI score) improved significantly at 3 months and at 12 months. No patient had worse function. These results show that laparoscopic ventral rectopexy for internal rectal prolapse improves symptoms of obstructed defaecation and faecal incontinence in the short-term.

In Chapter 8 the functional results of laparoscopic ventral rectopexy for obstructed defaecation secondary to high-grade internal rectal prolapse in those with normal and slow colonic transit are compared. Patients were evaluated with defaecating proctography and colonic transit study. Sixty-three patients with a high-grade internal rectal prolapse (ORPG grade 3 and 4) underwent laparoscopic ventral rectopexy, 42 with normal and 21 with slow colonic transit. The Wexner constipation score was significantly reduced in both groups at 12 months. At 12 months post-operatively there was no significant difference between the two groups in Wexner constipation score. These results show that slow colonic transit has no adverse impact on the functional outcome of laparoscopic ventral rectopexy for obstructed defaecation due to high-grade internal rectal prolapse.
In Chapter 9 the safety of laparoscopic ventral rectopexy to treat external rectal prolapse in elderly patients, compared with perineal approaches is assessed. Eighty patients with an external rectal prolapse (median age 84 (80-97) years) underwent laparoscopic ventral rectopexy. The average ASA grade was 2.44 (s.d. +/- 0.57). The median length of stay was 3 days. There was no mortality and 10 (13%) patients had complications. At a median follow up of 23 months, two (3%) patients developed a recurrent external rectal prolapse. These results show that laparoscopic ventral rectopexy is tolerated very well in the elderly. Laparoscopic ventral rectopexy combines the advantages of laparoscopy, a trans-abdominal approach and an anterior rectal dissection. This makes that the dictum of abdominal procedure if young and perineal procedure if old should be abandoned.

Conclusions

- Internal rectal prolapse precedes external rectal prolapse in the spectrum of rectal prolapse disease.
- Women without vaginal delivery and man are younger and are found to have a faster rectal prolapse progression rate than women with vaginal delivery.
- In patients with a high-grade internal rectal prolapse faecal incontinence is the most common symptom at presentation.
- Hyposensitivity is not the main and most important cause for obstructive defaecation in patients with high-grade internal rectal prolapse.
- Rectal prolapse and enterocoele seem to be part of the same pelvic floor process.
- A response to an initial dose of botulinum toxin might be considered a more reliable diagnosis of anismus than proctography.
- Laparoscopic ventral rectopexy for internal rectal prolapse improves symptoms of obstructed defaecation and faecal incontinence in the short-term.
- Slow colonic transit has no adverse impact on the functional outcome of laparoscopic ventral rectopexy for obstructed defaecation due to high-grade internal rectal prolapse.
- Laparoscopic ventral rectopexy to treat external rectal prolapse in the elderly is found to be safe. The dictum of abdominal procedure if young and perineal procedure if old should be abandoned.