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Laparoscopy for pelvic floor disorders



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Surgical treatment of pelvic floor disorders has significantly evolved during the last decade, with increasing understanding of anatomy, pathophysiology and the minimally-invasive 'revolution' of laparoscopic surgery. Laparoscopic pelvic floor repair requires a thorough knowledge of pelvic floor anatomy and its supportive components before repair of defective anatomy is possible. Several surgical procedures have been introduced and applied to treat rectal prolapse syndromes. Transabdominal procedures include a variety of rectopexies with the use of sutures or prosthesis and with or without resection of redundant sigmoid colon. Unfortunately there is lack of one generally accepted standard treatment technique. This article will focus on recent advances in the management of pelvic floor disorders affecting defecation, with a brief overview of contemporary concepts in pelvic floor anatomy and different laparoscopic treatment options.

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Introduction

Pelvic floor dysfunction is the inability of the pelvic floor to fulfill its supportive role to the pelvic organs and/or its inability to allow these organs to function normally. The dysfunction may be limited to a single organ, but more often affect more than one of the urinary, gynecological or anorectal organs and necessitate a multidisciplinary approach [1]. These disorders are common and cause significant clinical problems going from fecal incontinence, obstructed defecation syndrome (ODS) and pelvic organ prolapse (POP) [2]. Pathogenesis is complex and not completely understood but seems to be multifactorial. Rectocele, rectal intussusception, and perineal descent are the most frequently

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diagnosed anatomic disorders identified in these patients. Functional disorders, for example dysregulated pelvic floor function (anismus), may coexist, and it is not clear whether it is a cause, consequence, or an associated symptom [3,4].

In general most patients will respond to conservative treatment such as dietary modifications, fluid manipulation, fiber supplements, osmotic and stimulant laxatives and or enemas. In the minority of patients a selective surgical intervention is necessary [2].

Several surgical approaches have been advocated for the treatment of pelvic floor disorders including perineal versus transabdominal procedures, and open versus laparoscopic techniques, but prospective studies comparing different approaches and techniques are lacking [5]. A recently published international survey showed that the treatment of rectal prolapse syndromes clearly differed between surgeons, continents and regions. Therefore, there is no consensus on the best treatment option for these conditions, nor are there generally accepted guidelines [6].

Laparoscopy offers better anatomical exposure and surgical detail, reduces blood loss and excessive tissue manipulation making it an excellent modality for performing functional surgery. This article will review contemporary concepts in pelvic floor anatomy, describes the various laparoscopic surgical techniques currently available and summarizes currently published results of laparoscopic approach for pelvic floor disorders involving the anorectum.

Epidemiology

The prevalence of pelvic floor disorders is unclear, but generally 25% of women between the ages 40–59 show some form of pelvic floor disorder (including urinary or fecal incontinence or pelvic organ prolapse) [7]. Rectal prolapse syndromes affect patients at every age and is more common in women than in men with a ratio of 10 to 1 [8]. Male patients have an equal incidence per decade of life whereas women have an increased incidence as they age. The prevalence of these disorders will increase substantially given the changing demographics in western civilization [9]. Predisposing factors include a history of constipation or obstructed defecation with excessive straining. Childbearing will certainly contribute to the development of pelvic floor laxity, however a big portion of the patients with rectal prolapse are nulliparous excluding birth trauma as a cause. Psychiatric disorders is also a risk factor [2,10].

Etiology

There are two theories postulating the etiology of rectal prolapse. This is based on observations of abnormalities in local anatomy associated with the prolapse.

Sliding hernia theory

This theory was described by Moschowitz in 1912 based on the observation that the rectal lumen is usually posteriorly placed in procidentia and small bowel occasionally present anteriorly in the 'hernia sac'. The concept is that rectal prolapse is rather a sliding perineal hernia, which develops as a weakness in the transversalis fascia secondary to increased intra-abdominal pressure. Hence, the prolapse starts as a hernia in the pouch of douglas and because the perineal reflection is closely adherent to the rectum, and the anus is relatively fixed, the hernia protrudes as an intussusception towards the anal canal [11].

Intussusception theory

Devadhar proposed that rectal prolapse starts as a circumferential intussusception of the rectum [12]. This has been confirmed by defecographic studies by several authors [13]. Intussusception may be due to congenital failure of fixation of the mesorectum to the sacrum with straightening the anorectal angle or secondary to trauma, obstetric injury or surgical procedures. A non-relaxing puborectal muscle may also play a role. Whether or not this internal intussusception represents an early finding in patients who eventually develop full-thickness prolapse is unclear [14].

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