

As announced in the Editorial by Bruce Farnsworth (*Pelviperrineology* 2011; 30:5) this is the sixth of a series of articles highlighting the different sections of the book “Pelvic Floor Disorders, Imaging and a Multidisciplinary Approach to Management” edited by G.A. Santoro, P. Wiczorek, C. Bartram, Springer Ed, 2010.

## Pelvic organ prolapse

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The sixth section of the book “Pelvic floor disorders - Imaging and Multidisciplinary Approach to Management” is entitled “Pelvic Organ Prolapse” and consists of sixteen chapters. This section is divided into two main subsections describing investigation and management of pelvic organ prolapse.

In the first subsection “Investigation” authors describe various imaging techniques and their importance for the evaluation of pelvic organ prolapse. Pelvic organ prolapse (POP) represents a significant health and economic problem worldwide and has a deleterious impact on a woman’s quality of life. The etiology of prolapse is very complex, thus it is very important to determine precisely the anatomy of pelvic structures and severity of damage to their support.

In the first chapter titled “Imaging as a Key to Understanding the Causes of Pelvic Organ Prolapse” Clive Bartram states that imaging modalities such as evacuation proctography, cystocolpodefecography, dynamic MRI, and ultrasonography (US), are valuable to quantify and define pelvic floor support and allow to establish the extent and severity of POP. Very often they may be more extensive than clinically apparent. Author believes that imaging is an important key to our understanding and management of POP.

The second chapter titled “Endoluminal Ultrasonography” by G.A.Santoro, A.P.Wiczorek, M.M.Woźniak and

A.Stankiewicz highlights the role of ultrasound in diagnostics of pelvic floor disorders (Figure 1). It has several important advantages over other imaging modalities: absence of ionizing radiation, relatively easy to perform, minima discomfort, cost-effectiveness, reduced time requirement, and wide availability. The authors describe precisely the role of high-frequency endovaginal US in the assessment of the anatomy of pelvic floor structures in patients with POP. It enables detection of defects of the connective supporting structures, visualizes subclinical cystoceles, or multicompartmental damage.

In the third chapter titled “Translabial Ultrasonography” H.P. Dietz presents the role of this the most commonly used imaging method in the investigation of women with lower urinary tract symptoms and POP. Translabial US enables recognition of two types of cystoceles with different functional implications: cystourethrocele associated with above-average flow rates and urodynamic stress incontinence and a cystocele with intact retrovesical angle associated with voiding dysfunction and with levator trauma (Figure 2). The author presents the role of this method also in the diagnostics of rectocele. Moreover, it enables postoperative evaluation of mesh position, and injectables, and may uncover complications such as dislodgment of anchoring arms.

In the fourth chapter “Cystography and Defecography” V.L. Piloni describes the usefulness of conventional radiological examinations. Despite of an increasing role of MRI and US imaging in urogynecology, the author claims that cystography and defecography still have enduring and pertinence value in some conditions, such as: diagnosis of distortion of the mucosal anal infolding, tears, postoperative strictures, and depiction of the internal opening of perianal fistula.

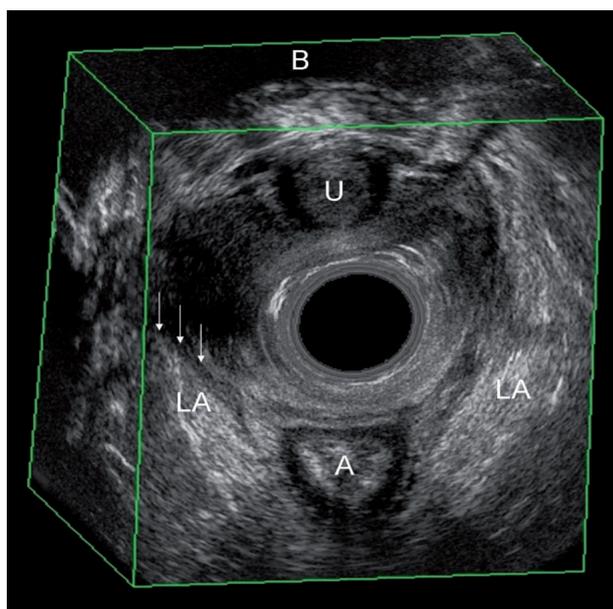


Figure 1. — Endovaginal ultrasound with rotating probe, showing a damage of levator ani (LA) on the right side (arrows).

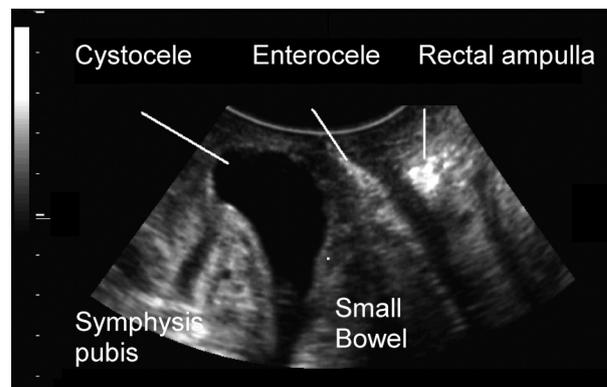


Figure 2. — Translabial ultrasound with convex probe, showing multicompartimental pelvic organs prolapse.

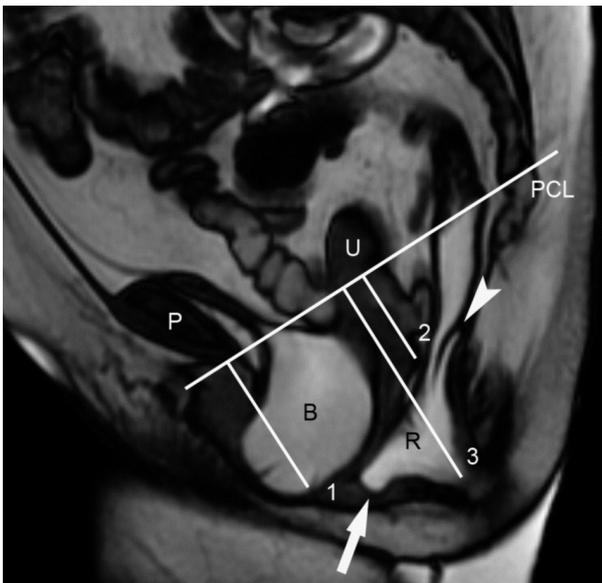


Figure 3. — Midsagittal balanced steady state free precession T2-weighted MR image obtained during maximal straining shows a bulging of the whole pelvic floor with a moderate descent of the anterior compartment (1: 5.5 cm) and the middle compartment (2: 4 cm) and a large descent of the posterior compartment (3: 8 cm). In addition, a small anterior rectocele (arrow) and intussusception of the posterior rectal wall (arrowhead) are seen. P=symphysis pubis, B=bladder, U=uterus, R=rectum, PCL=pubococcygeal line.

The chapter fifth “Magnetic Resonance Imaging” by D. Weishaupt and C.S.Reiner describes role of MRI in diagnostics of POP and outlet obstruction. It presents dynamic MRI features of various findings that may be observed in these patients and discusses criteria, which are used to grade pelvic floor relaxation and organ prolapse (Figure 3). Dynamic pelvic floor MRI is valuable for selecting candidates for surgical treatment and for choosing the appropriate surgery.

In the sixth chapter entitled “Anorectal Manometry” F.Pucciani presents the role of anorectal manometry in individuals with POP who have defecatory symptoms or fecal incontinence. Manometric evaluation provides functional anorectal data in patients who suffer from posterior prolapse, as anal sphincter activity, rectal compliance, and rectal sensation may be tested. Moreover, manometric signs of defective anal sphincter function or impaired anal relaxation may be also detected, depending on concomitant rectal pathologies. Manometry can only identify those patients whose outlet obstruction is sustained by concomitant anorectal dysfunction.

In the second subsection “Management” authors describe various surgical and conservative treatments of pelvic organ prolapse. In the seventh chapter “Management of Pelvic Organ Prolapse: a Unitary or Multidisciplinary Approach?” G.Dodi, L.Amadio and E.Stocco focus on the necessity of a multidisciplinary approach to pelvic floor disorders, due to frequent coexistence of dysfunctions in all three compartments. It is known that, of patients treated for anal incontinence, 53% and 18% respectively complain of urinary incontinence. The authors state that only combined urologic, gynecologic and colorectal reconstructive procedures can safely be undertaken during the same surgical session, with no increase of morbidity. Additionally, there is a good possibility of an enhanced success rate, and shortened recovery time when all pelvic floor dysfunctions are treated in the same operative session.

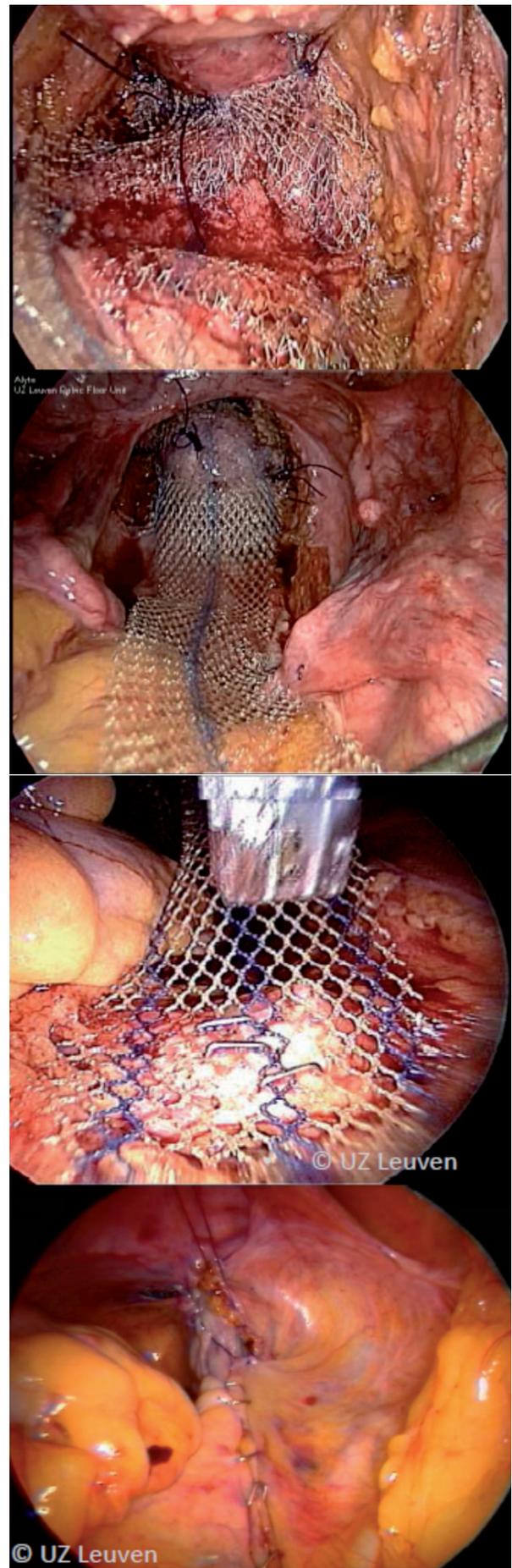


Figure 4. – Abdominal approach to uro-genital prolapse.

The eighth chapter “The Abdominal Approach to Urogenital Prolapse” by D.H. Kim and G.M.Ghoniem presents various surgical techniques for the treatment of urogenital prolapse. The choice of operation must be made after careful consideration of a series of factors related to the patient’s anatomy, medical history, and goals of surgery. The vaginal approach can be used to repair prolapse through all compartments – anterior, apical, and posterior. An abdominal approach, is required if concurrent intra-abdominal pathology exists that needs to be addressed. Moreover, this chapter reports available data and highlights more specifically the consequences of surgery with mesh reinforcement (Figure 4).

In the ninth chapter “The Perineal Approach to Urogenital Prolapse” T. Rechberger presents the anatomical principles of surgical repair and the importance of tissue tension in the restoration of both structure and function. Perineal operations are safer than abdominal ones but carry a higher likelihood of recurrence of the prolapse.

In the tenth chapter “The Laparoscopic Approach to Pelvic Floor Surgery” E. Werbruck, F. Claerhout, J. Verguts, J. Veldman, F. Van der Aa, D.De Ridder and J. Deprest reports that, compared to open procedures, laparoscopic operations are associated with reduced postoperative pain, earlier recovery, and shorter length of hospital stay, despite a longer operative time and higher direct costs. In addition laparoscopy offers great exposure and surgical detail, and reduces blood loss.

**In the eleventh chapter “Total Pelvic Floor Reconstruction”** P.P. Petros presents the new operations modalities of tissue fixation system for pelvic floor reconstruction. The TFS is a new minimally invasive technique using a different bioengineering support principle for pelvic organ prolapse (Figure 5).

In the twelfth chapter “The Abdominal Approach to Rectal Prolapse” by S.M. Murad-Regadas, R.A. Pinto and S.D. Wexner are described in details the most commonly used abdominal techniques for rectal prolapse. The surgical options can be summarized as suture or mesh rectopexy with or without sigmoid resection. Choosing the optimal repair for rectal prolapse involves the contemplation of patient’s health and the preexisting bowel function related to a history of constipation or fecal incontinence, also compromise of the sphincter muscles at the anorectal evalua-

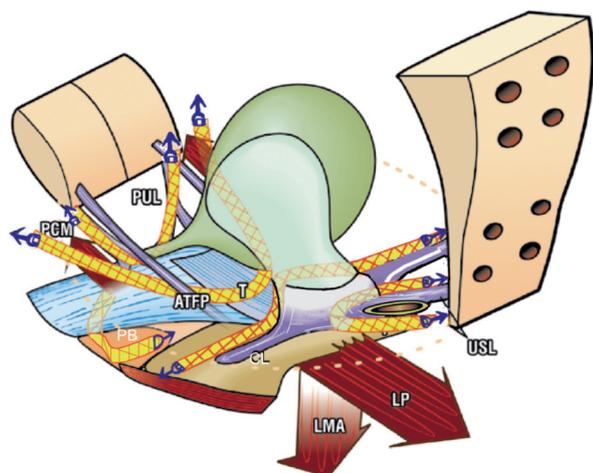


Figure 5. — Tensioned TFS minisling tapes approximate and tension laterally displaced ligaments and their attached fascia., pubourethral (PUL) ATFP, cardinal (CL) uterosacral (USL), perineal body (PB).

tion. Among the abdominal procedures, suture or mesh rectopexies are the option for patients with normal or increased bowel function or atonic sphincter. Resection rectopexy is preferred for constipated patients or with normal sphincter tonus. Abdominal approaches are associated with low morbidity rates, even among elderly patients, and lower long-term recurrence rates compared to perineal approach.

The thirteenth chapter entitled “The Perineal Approach to Rectal Prolapse” written by M. Trompetto and S. Cornaglia reports available data and highlights in details the most used perineal procedures (Delorme’s and Altemeier’s operations) for rectal prolapse. Perineal operations are safer than abdominal ones but can have a higher possibility to bring to a recurrence of the prolapse. Functional results probably depends more on the initial severity of the disorder than on the type of operation.

The fourteenth chapter “The Laparoscopic Approach to Rectal Prolapse” written by J.R. Karas and R. Bergamaschi presents the current opinion on the impact laparoscopy may have on the outcomes of complete rectal prolapse, with insight on laparoscopic surgical technique, and an overview of the literature dealing with this specific subject. The laparoscopic approach for suture rectopexy is feasible. The laparoscope provides the surgeon with a magnified vision deep into the pelvis with the added benefit of a relatively weak fixation of the rectal fascia to the sacrum.

The fifteenth chapter entitled “Pelvic Floor Muscle Training in Prevention and Treatment of Pelvic Organ Prolapse” by K. Bø and I.H. Brækken describes the four randomized controlled trials on the effect of pelvic floor muscle training (PFMT) to treat POP and symptoms of prolapse. The results of all trials show that significantly more women in the PFMT group improved one POP stage compared to the control group. In addition, the study demonstrated significant reduction of POP symptoms (heaviness and bulging) and bladder and bowel symptoms.

**In the sixteenth chapter “Medical Treatment of Irritable Bowel Syndrome, Constipation and Obstructed Defecation”** P.F. Almerigi, M. Menarini and G. Bazzocchi described in details non-operative therapies that can be successfully used in posterior compartment disorders, including antidiarrheals, dietary modifications, fiber supplementation, bulking agents, osmotic laxatives, tricyclic antidepressants, and antispasmodics. Moreover, the description of new agents, which effect is currently being researched (agonists and antagonists of serotonin receptors, adrenergic modulators, chloride channel activators, probiotics, and others) is also presented. The treatment of slow transit constipation may feature therapy of the comorbidities that may result in constipation. Dietary suggestions, lifestyle changes, correction of bowel habits, and laxatives are fundamental, but new agents should be also taken in consideration. Obstructed defecation can be treated by aiming to decrease the consistency of the stool and facilitate rectal evacuation.

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