"OVIDIUS" UNIVERSITY IN CONSTANTA
DOCTORAL SCHOOL OF MEDICINE
DOCTORAL FIELD: MEDICINE

OPTIMIZATION OF SURGICAL TREATMENT IN PELVIC STATIC DISORDERS

-SUMMARY-

- THESIS -

Doctoral supervisor **Doctoral student**

Prof. Dr. VASILE SÂRBU **Dr. IRINA PIŞMIHA (mar . NIȚU)**

CONSTANȚA
2024

CONTENT

KEY WORDS - GENITAL PROLAPS, PELVIC STATICS, HYSTEROPEXY WITH LATERAL FIXATION

INTRODUCTION

Pelvic static disorders are characterized by varying degrees of damage to the structures of the pelvic floor, which leads to the appearance of some anatomical-clinical entities, the most common of which are urinary incontinence and pelvic organ prolapse. Also, there is no consensus regarding the optimal treatment of pelvic static disorders, the reconstruction techniques being extremely numerous, from the classic techniques, which use the patients' own tissues to the laparoscopic techniques and those that use alloplastic materials. I wanted to contribute to the research of this interesting pathology and to the optimization of its surgical treatment through this doctoral thesis.

GENERAL PART

1. PELVIC FLOOR ANATOMY N

1.1. TOPOGRAPHIC ANATOMY

The pelvic floor, also called the perineum, consists of the soft parts that close the pelvic cavity caudally and extends from the posterior vulvar commissure to the anus. The soft parts are made up of fascia, muscles, vessels and nerves and are penetrated by ducts belonging to the urogenital and digestive systems. On the midline, between the anus and the vulva, there is a fold of skin called the median raphe of the perineum (5,6).

1.2. PELVIC FLOOR

The pelvic floor has two components: the pelvic diaphragm and the urogenital diaphragm (10) **.**

1.2.1. PELVIC DIAPHRAGM

The pelvic diaphragm consists of the levator ani muscles and the coccyx muscles. In the anterior part, the pelvic diaphragm is covered by the urogenital diaphragm, and in the posterior part are the ischiorectal fossae containing the subcutaneous cellular tissue (11).

The pelvic diaphragm has an upper and lower face that are covered by the superior and inferior fascia of the levator anal muscle respectively (12, 13).

1.2.2. UROGENITAL DIAPHRAGM

The urogenital diaphragm is located at the level of the anterior perineum, being located inferior and superficial to the pelvic diaphragm. It has a musculo-fascial structure and is also called the "perineal membrane" (17, 22)

1.3. ANATOMICAL PLANES OF THE PELVIC FLOOR

1.3.1. THE SUPERFICIAL PLAN*.** It consists of the external genital structures (9, 30 ***)

1.3.2. FASCIAL PLANE it consists of the superficial perineal fascia and the lower fascia of the uro-genital diaphragm, also called the perineal membrane.

1.3.3. THE ERECTILE ORGANS are the clitoris and vestibular bulbs. They are made up of vascular cavernous tissue, connective fibers and smooth muscle fibers, and on the outside they are covered by a fibro-elastic membrane rich in neuroreceptors called albuginea (31).

1.3.4. MUSCULAR PLANE - The muscles of the pelvic floor are arranged in three layers: the inner, middle and outer layers (34).

1.3.5. DEEP PLANE - It lies between the perineal membrane and a deep fascial layer that separates the urogenital diaphragm from the anterior recess of the ischio-rectal fossa. It consists of: the striated sphincter muscle of the urethra, the deep transverse muscle of the perineum, the internal pudendal vessels with their branches and the dorsal nerve of the anus (7,25).

1.3.6. FASCIAS AND LIGAMENTS OF THE PELVIC FLOOR is of two layers: the pelvic visceral fascia and the subperitoneal spaces of connective tissue (anatomical cleavage spaces)

2. PHYSIOLOGY OF PELVIC STATICS

The normal status of the pelvic floor is achieved by the closure of the levator hiatus, which is contributed to by both the vagina (held in position by the ligamentous apparatus) and the perineal muscles, which through synergistic contraction tense and angle the pelvic organs in an anterior or posterior direction.

2.1. BIOMECHANICS OF THE VAGINA - The vagina is an organ subject to hormonal influences, so it will undergo changes due to the woman's hormonal status (age, pregnancy).

2.2. BIOMECHANICS OF THE URINARY BLADDER - The bladder is supported by the vagina in orthostatism, because it has a horizontal position and adheres to the urinary bladder at

the level of Pawlick's trigone by means of the vesicovaginal fascia (part of the pubocervical fascia) which inserts laterally on the tendinous arch of the pelvic fascia.

2.3. UTERINE BIOMECHANICS - The normal position of the uterus in the pelvis is due to the cardinal ligaments and the uterosacral ligaments that insert at the level of the cervix through the paracervix. These ligaments are composed of collagen fibers and smooth muscle fibers, by the contraction of which the neck is pushed posteriorly. The paracervix is particularly resistant, being formed only of collagen (60).

2.4. RECTAL BIOMECHANICS - The anterior wall of the rectum comes in relation to the posterior wall of the vagina by means of the rectovaginal fascia below the level of the levator plate. When the rectovaginal fascia is degraded, the rectum will bulge into the vagina, forming the rectocele. The rectovaginal fascia and the tendinous center of the perineum are the two structures that maintain pelvic static at this level (63, 64).

2.5. URINARY MICRATION AND CONTAINMENT - With the advent of urodynamics, it was observed that in order to achieve urinary continence, there is an interaction between the contraction of the internal and external sphincters of the urethra and between the contraction of the perineal muscles that achieve the angulation of the urethra (63, 65).

The perineal muscles that participate in urinary retention act on three levels: anterior, posterior and inferior.

2.6. DEFACATION AND FAECAL CONTAINMENT - In 2008, Petros and Swash introduced the notion of a "musculo-elastic sphincter complex" that achieves faecal containment and defecation and that also explains the occurrence of faecal incontinence in the symptomatology of pelvic static disorders (67, 68).

3. PHYSIOPATHOLOGY OF THE PERINEUM

In the formulation of the Integral Theory, Petros P. stated the laxity of the connective tissue as being at the origin of pelvic static disorders through the redistribution of perineal muscle vectors and the subsequent anatomical and functional alteration of the perineum and pelvic organs (52).

3.1. GENERAL - As many authors have shown, the pelvic floor and pelvic organs have a large amount of elastin in their composition and consequently benefit from great elasticity, but have less resistance (52, 69).

3.2. THE PHYSIOPATHOLOGY OF STRESS URINARY INCONTINENCE - Urinary continence is achieved directly by the action of the pubourethral ligaments and indirectly by the angulation of the urethra by the vaginal wall (63, 73).

3.3. PHYSIOPATHOLOGY OF ANTERIOR VAGINAL PROLAPS - Anterior vaginal prolapse occurs due to the degradation of the pubocervical fascia. It inserts anteriorly on the pubis, posteriorly on the paracervix and laterally on the tendinous arch of the pelvic fascia, supporting the bladder in orthostatism. When the pubocervical fascia becomes lax, it loses its resistance and acquires excessive elasticity, requiring increased muscle strength to be able to tense the vagina.

3.4. PHYSIOPATHOLOGY OF UTERINE PROLAPS - The uterosacral ligaments and cardinal ligaments are what maintain the normal position of the vagina. If they deteriorate, the diameter of the levator hiatus increases and the angle that the vagina makes with the horizontal changes, leading to uterine prolapse.

3.5. PHYSIOPATHOLOGY OF VAGINAL VAULT PROLAPS AND ELYTROCELE - The posterior vaginal fornix and vaginal vault are supported by the cardinal ligaments, uterosacral ligaments, paracervix and rectovaginal fascia, their degradation being followed by the formation of an elythrocele.

3.6. PHYSIOPATHOLOGY OF POSTERIOR VAGINAL PROLAPS - The appearance of posterior vaginal prolapse, also called rectocele, is possible by compromising the rectovaginal fascia due to damage to the collagen fibers that compose it or due to the disinsertion of this fascia from the uterosacral ligaments or the tendinous center. Therefore, the rectum will herniate at the level of the posterior vaginal wall and if the fascia has also detached from the tendinous center, the rectum will prolapse to the vaginal introit (29,69).

3.7. PHYSIOPATHOLOGY OF ANORECTAL DYSFUNCTION - Often, pelvic static disorders are accompanied by anorectal dysfunction, by which we understand both faecal incontinence and digestive tube evacuation disorders (low constipation).

3.8. RISK FACTORS OF PELVIC STATIC DISORDERS - Biochemically, connective tissue consists of collagen and elastin fibers joined by proteoglycans. Collagen and elastin fibers provide stability and elasticity, respectively, while proteoglycans enhance tissue stability by providing strong connective tissue

4. DIAGNOSIS OF PELVIC STATIC DISORDERS

4.1. SYMPTOMATOLOGY - The correct evaluation of the symptoms with which a patient presents to the doctor is essential for establishing the diagnosis of a pelvic static disorder because there may be a discrepancy between the extent of the symptoms reported by the patient and the extent of the anatomical defects of the pelvic floor and the surgical treatment will have to follow in primarily symptom relief, not only anatomical correction of defects (4).

4.1.1. Stress urinary incontinence – UTI in women is clinically defined as the intermittent, sudden and involuntary loss of urine that occurs following ordinary physical exertion such as coughing, sneezing, laughing or lifting a weight (89).

4.1.2. Urinary urgency - According to the ICS (International Continence Society), urinary urgency is "the sudden and imperative sensation to urinate, a sensation that cannot be postponed" (90).

4.1.3. Pollachiuria - If the number of urinations in 24 hours is greater than 8 we can talk about pollachiuria. This is frequently encountered in pelvic static disorders alongside micturition urgency, having a similar mechanism of occurrence (93).

4.1.4. Nocturia - Nocturia is the need to urinate at night (at least two nocturnal micturitions) with each micturition preceded and followed by sleep (90).

4.1.5. Bladder voiding disorders - This type of dysfunction is defined as difficulty emptying the bladder. The physiopathological mechanism of occurrence is the increased resistance to urine flow during micturition.

4.1.6. Faecal incontinence - Faecal incontinence is the inability to control fecal content and is manifested by the involuntary loss of gas or faecal matter. It affects 10–20% of menopausal patients, with dramatic impact on quality of life (67).

4.1.7. Constipation - is a disorder of the digestive tract defined by the delay of stool for more than three days.

4.1.8. Vaginal discomfort and other symptoms associated with pelvic organ prolapse - If the anatomical defect is not large, the patient may complain of vaginal discomfort or the sensation of an intravaginal foreign body, burning, itching.

4.1.9. Chronic pelvic pain syndrome (CPPS) and dyspareunia

4.2. OBJECTIVE EXAMINATION - Through the objective examination, the existing anatomical defects in pelvic static disorders are highlighted, these will be correlated with the patient's symptoms in order to be able to develop the most suitable therapeutic behavior.

4.2.1. Stress Urinary Incontinence (SUI) - In order to objectify the loss of urine on effort specific to SUI, the patient, having a full bladder, sits in the gynecological position and will then be asked to cough. In the case of SUI, the patient will present involuntary loss of urine when coughing (102).

4.2.2. Anterior vaginal prolapse - the cystocele is evident by examining the patient with the valves in the gynecological position (91).

4.2.3. Uterine prolapse - Uterine prolapse is easily recognized on clinical examination and will need to be quantified using one of two internationally accepted quantification systems: the Baden–Walker system and the POP–Q classification.

4.2.4. Vaginal vault prolapse - The quantification of vaginal vault prolapse is similar to the quantification of uterine prolapse, except that the landmark of the cervix will be replaced by the landmark of the postoperative scar at the level of the vaginal vault.

4.2.5. Posterior vaginal prolapse - Posterior vaginal prolapse can be expressed either by elytrocele, which constitutes high vaginal prolapse, or by rectocele (distal vaginal prolapse).

4.3. CLINICAL DIAGNOSIS ACCORDING TO THE INTEGRAL THEORY - Wanting to evaluate as precisely as possible the damage to the structures of the pelvic floor, P. Petros combined the data obtained through the anamnesis with the data obtained through the objective examination and invented an algorithm for the diagnosis of pelvic static disorders (4).

4.4. PARACLINICAL INVESTIGATIONS - In pelvic static disorders, the most important role belongs to the objective examination, after which the anatomical defects are detected and correlated with the symptoms reported by the patient, the paraclinical examinations having an auxiliary role.

4.4.1. Urodynamic studies include: uroflowmetry (urinary flowmetry), essential urodynamic tests (filling cystometry, flow-pressure studies) and complex urodynamic tests (urethral pressure profile, videourodynamics, ambulatory studies, neurophysiological tests).

4.4.2. Ultrasound helps to a small extent in the diagnosis of a pelvic static disorder. The approach is transperineal. Thus we have access to explore the urethra and bladder neck.

4.4.3. Radiological explorations

4.4.4. Magnetic resonance imaging - MRI is both expensive and cannot be performed routinely. One of the major disadvantages of MRI is that the investigation is performed in clinostatism and thereby reduces the effect of gravity on the pelvic floor.

5. SURGICAL TREATMENT OF PELVIC STATIC DISORDERS

5.1. GENERAL PRINCIPLES - Petros's recommendations are as follows (4): The normal anatomical restoration of the perineum must be done through surgical interventions with a pathogenic focus, which strengthens the suspension and support system of the perineum.

1. The three functions of the pelvic organs (urination, defecation, adequate sexual activity) will be ensured at optimal parameters.
2. The surgical technique for correcting the pelvic static disorder, as well as the approach, will be chosen according to the patient's particularities, as well as the surgeon's experience.
3. In order to manage the elasticity of the vagina on which the muscular forces act, it is recommended to preserve its anatomical integrity by avoiding the excision of the vaginal mucosa.
4. The uterus will be preserved, because almost all pelvic ligaments are anchored to the uterus.
5. Avoiding postoperative complications is possible by avoiding stress on the pelvic floor components.
6. A weakened ligament must be reinforced with a synthetic material to stimulate collagen synthesis.

The surgical techniques used for the treatment of this pathology are of two types: classic operations and operations that use synthetic materials.

5.1.1. Classic operations - These operations use the patient's own structures to restore the anatomy of the pelvic floor, which they tension through different techniques.

5.1.2 Operations using alloplastic material - These operations replace the affected ligaments and fascia with solid materials, capable of restoring their function.

5.2. ANTERIOR COMPARTMENT SURGERY - The operations performed to restore the anterior compartment have in mind the reconstruction of the pubourethral, external urethral ligaments and the suburethral fascia.

5.2.1. CLASSIC OPERATIONS

5.2.1.1.Kelly operation - The operation consists of folding the urethra to reduce its diameter followed by folding the pubovesical fascia in order to increase the support of the urethra and bladder and can be practiced both for the treatment of stress urinary incontinence and for the treatment of cystocele.

5.2.1.2.The Burch operation has a pathogenic correction mechanism because it raises the urethrocystic junction in the abdominal area, and can be successfully practiced in the case of patients in whom repeated fitting of a suburethral band did not resolve stress urinary incontinence.

5.2.1.3.Direct urethrocystopexy (Pereira or Dan Alessandrescu operation) - The operation anchors the urethrocystic junction to the aponeurosis of the external oblique muscle through a digitally created retropubic groove, achieving a satisfactory angulation of the urethra

5.2.2. SURGICAL TECHNIQUES USING ALLOPLASTIC MATERIAL These techniques are increasingly used, the polypropylene strips mounted suburethral succeeding in reconstructing the physiological mechanism of occlusion by loosely anchoring the middle third of the urethra and vectorially optimizing the ligamentous apparatus supporting the urethra.

5.2.2.1.Retropubic suburethral tape (TVT - TransVaginal Tape) –

5.2.2.2.Tissue Fixation System for the Treatment of Stress Urinary Incontinence (SUI)

5.2.2.3.Transobturator suburethral tape (TOT – transobturator tape)

5.3. MIDDLE COMPARTMENT SURGERY - The pelvic static disorder that occurs in the middle compartment is anterior vaginal prolapse, also called cystocele.

5.3.1. CLASSIC OPERATIONS - Anterior colporrhaphy*. The purpose of this operation is to strengthen the pubocervical fascia (129).*

5.3.2. SURGICAL TECHNIQUES USING ALLOPLASTIC MATERIAL - Surgical reconstruction with anterior "H" mesh with four arms - Through this surgical technique, the pubocervical fascia is reinforced with a polypropylene mesh

5.4. POSTERIOR COMPARTMENT SURGERY - Posterior compartment defects occur through ligamentous defects involving the three DeLancey levels, the cardinal and uterosacral ligaments, the rectovaginal fascia, and the tendinous center of the perineum, leading to uterine prolapse and/or posterior vaginal prolapse (4).

5.4.1. CLASSIC OPERATIONS - Nowadays, despite the high percentage of complications and recurrences, classic techniques are used for the surgical treatment of posterior compartment defects.

5.4.1.1. Classic hysterectomy

5.4.1.2.Vaginal hysterectomy

5.4.1.3.**Surgical treatment of vaginal vault prolapse -** The most used technique is the Amreich–Richter operation.

5.4.1.4.Colpocleisis - It is indicated for elderly patients, with multiple biological hards and who do not have a sexual life.

5.4.1.5.**Posterior colpoperineorrhaphy** - It is a surgical technique to resolve the rectocele

5.4.1.6. Surgical cure of rectocele with "posterior" bridge - This technique, which corrects De Lancey level 2, uses a homograft, made from a fragment of deepithelialized mucosa that plugs, thus reducing posterior vaginal prolapse (4).

5.4.1.7. Surgical Cure of Elythrocele - McCall Culdoplasty is the most used procedure and has the best results in the correction of enterocele

5.4.1.8. Restoration of the tendinous center of the perineum - It is carried out by the plasty proposed by Goeschen, which has a pathogenic justification by restoring level 3 De Lancey

5.4.2. SURGICAL TECHNIQUES USING ALLOPLASTIC MATERIAL - With the improvement of synthetic meshes, a multitude of procedures have been proposed for the reconstruction of the posterior compartment (137) without succeeding in imposing a specific procedure.

5.4.2.1. Posterior intravaginal strip

5.4.2.2. Posterior intravaginal band with bilateral sacrospinous fixation

5.4.2.3. Posterior Compartment Tissue Fixation System - Restores the vectorial role of the Utero-Sacral Ligaments (LUS) and Cardinal Ligaments, successfully correcting posterior compartment defects

5.4.2.4. Restoration of the tendinous center of the perineum with the TFS technique

5.4.3. LAPAROSCOPIC TECHNIQUES

5.4.3.1. Laparoscopic sacrocolpopexy - This surgical technique fixes the vaginal vault to the anterior longitudinal ligament of the sacral promontory by means of a polypropylene mesh, with reported success rates ranging from 74–98% (120, 142).

5.4.3.2. Laparoscopic hysteropexy – the Oxford procedure

1.4.3.3.Hysteropexy with lateral fixation - During the years of surgical practice I made three observations that I consider important and which contributed to the development of the technique of laparoscopic hysteropexy - procedure with lateral fixation.

6. COMPLICATIONS OF THE SURGICAL TREATMENT OF PELVIC STATIC DISORDERS

6.1. INTRAOPERATIVE COMPLICATIONS

6.1.1. Intraoperative bleeding

6.1.2. Bladder perforation

6.1.3. Perforation of the urethra

6.1.4. Perforation of the rectum

6.1.5. Perforation of the small intestine

6.1.6. Nerve damage

6.1.7. Damage to the ureters

6.2. POSTOPERATIVE COMPLICATIONS

6.2.1. Micturition disorders

6.2.2. dyspareunia

6.2.3. Pelvic pains

6.2.4. Urinary tract infection

6.2.5. Stiff vagina syndrome

6.2.6. Complications related to the synthetic materials used

6.2.6.1. The erosions

6.2.6.2. Infections of alloplastic materials

THE SPECIAL PART

7. PURPOSE, OBJECTIVES AND DESCRIPTION OF THE STUDY

7.1. PURPOSE OF THE STUDY - The purpose of this study was to find the optimal surgical solution to various pelvic static disorders, in accordance with the principles of the integralist theory developed by Petros. The surgical procedures presented in the doctoral thesis are addressed to the lesions at the level of all three compartments as well as the symptoms generated by them, the main objective being the restoration of the normal anatomy of the pelvic floor

7.2. OBJECTIVES OF THE STUDY - A first objective of this doctoral work is to present the results of the surgical treatment of the studied pelvic static disorders and to formulate an algorithm to optimize this treatment.

7.3. DESCRIPTION OF THE STUDY - This study, which aims to optimize the surgical treatment of pelvic static disorders, was carried out in the Surgery Clinic of SCJU Constanța and the private clinics where we carried out our activity. The study is prospective and was carried out between 01.01.2016 and 31.12.2020 including 327 patients diagnosed and operated on for various pelvic static disorders.

7.4. MATERIAL AND METHOD - A prospective study was carried out in which 327 patients were included who were hospitalized, investigated, diagnosed, operated and followed in the Surgery Clinic of SCJU Constanța and the private clinics where we carried out our activity. The data obtained from the study were statistically processed and presented in tables and graphs.

7.4.1. DIAGNOSIS OF PATIENTS WITH PELVIC STATIC DISORDERS - The diagnosis was formulated by corroborating the data obtained from the anamnesis, clinical examination and paraclinical investigations.

7.4.1.1. Careful HISTORY assessed both the symptomatology and the presence of risk factors for pelvic static disorders with the help of questionnaires (the symptomatology assessment questionnaire, the risk factor assessment questionnaire and the IIQ-7 quality of life questionnaire).

7.4.1.2.CLINICAL EXAMINATION - A general clinical examination was performed followed by a genital clinical examination.

7.4.1.3.THE VAGINAL CLINICAL EXAMINATION was performed with an empty bladder and a full bladder, in clinostatism and in orthostatism and consisted of: abdominal examination, pelvic examination, vaginal palpation, valve examination, rectal palpation and urinary incontinence evaluation tests.

7.4.1.4. PARACLINICAL INVESTIGATIONS

7.4.2. SURGICAL TREATMENT OF PATIENTS WITH PELVIC STATIC DISORDERS

7.4.2.1. For patients diagnosed with urinary incontinence (defect of the anterior compartment), the following were used:

- **the kelly operation**
- **the Burch operation**
- **installation of retropubic suburethral tape (TVT - TransVaginal Tape)**
- **transobturatory suburethral tape mounting (TOT - TransObturatory Tape)**

7.4.2.2. For patients diagnosed with a defect of the middle compartment (cystocele), the following were used:

- Anterior colporrhaphy
- Surgical reconstruction with 4-arm mesh

7.4.2.3. For patients diagnosed with a posterior compartment defect (uterine prolapse or vaginal vault prolapse), the following were used:

A. For patients with uterine prolapse:
   - Classic hysterectomy
   - Laparoscopic hysterectomy
   - Vaginal hysterectomy
   - Fixation of the cervix to the sacrospinous ligaments
   - Hysterosacropexy (fixation of the cervix to the anterior sacral ligament via the abdominal route)
   - Laparoscopic hysteropexy, the Oxford procedure
   - Laparoscopic hysteropexy procedure with lateral fixation

B. For patients with vaginal vault prolapse:
   - colposuspension at the sacrospinous ligaments vaginally
   - laparoscopic sacrocolpopexy
   - laparoscopic colposuspension – procedure with lateral fixation
   - colpocleisis

C. For patients with recto cel
   - Posterior colpoperineoraphia + restoration of the tendinous center of the perineum using the Klaus Goeschen technique
   - installation of posterior intravaginal tape with bilateral sacrospinous fixation + restoration of the tendinous center of the perineum using the Klaus Goeschen technique

D. For patients with elytrocele:
   - McCall culdoplasty + restoration of the tendinous center of the perineum using the Klaus Goeschen technique
   - Colpocleidosis

10. PERSONAL CONTRIBUTIONS

10.1. OPTIMIZATION OF THE SURGICAL TREATMENT OF PELVIC STATIC DISORDERS

The first objective of this PhD work was to find an optimal surgical solution for pelvic static disorders.

10.1.1. ANTERIOR COMPARTMENT - I obtained the best results with the technique of mounting the suburethral band through the transobturator procedure (TOT). The symptomatology improvement in the studied group was obvious, the micturition disorders analyzed one year after surgery being only 4.54% and the relapse rate 3.03%. The average operating time was short, 35.2±5.2 minutes. By using the transobturator path for the insertion of the suburethral band we avoided the risk of bladder injuries, the intraoperative complications being minimal, represented by a few vaginal injuries and more abundant bleeding during the dissection; 96.21% of the patients had no intraoperative complications and 92.85% had no immediate postoperative complications. The procedure required a short hospital stay, on average 2.3±1.1 days, and had a high success rate of 96.97% at one year postoperatively.

I believe that suburethral tape mounting by the TOT procedure is the surgical technique of choice, as the first intention in the surgical treatment of stress urinary incontinence. The few recurrences after this procedure can be solved either by fitting a suburethral band through the TVT procedure (disadvantages: high risk of bladder injuries and intraoperative bleeding; prolonged operation time due to the need to carry out a cystoscopy during the surgical intervention), or by the Burch operation (disadvantage: the surgical intervention is performed via the abdominal route, with the risk of bladder and ureteral injuries, with intraoperative bleeding due to the laborious dissection; postoperative complications at the level of the operative wound and urine retention are expected).

10.1.2. MIDDLE COMPARTMENT U

Anterior colpoperineorrhaphy was followed by recurrence in 9.75% of cases, the anatomical success rate at one year postoperatively being 90.25%, while the use of the anterior 4-arm implant had a band erosion rate of only 2.85 % of cases and no recurrence, the anatomical success rate being 97.15%, statistically significant difference ($p \leq 0.05$).

Comparing the postoperative symptoms, we observed that the anterior colpoperineorrhaphy is followed by a lower percentage of dyspareunia (4.87%) than the mounting of the anterior 4-arm implant (8.57%).

Looking at the overall risks and benefits of the two surgical techniques that we applied in the case of this pathology, we notice that the anatomical success is better following the previous implant with 4 arms, but this anatomical success is also accompanied by a 2.85% risk of table erosion as well as a higher percentage of dyspareunia (8.57%).

Following this observation, I decided to recommend that sexually active patients accept the reconstruction technique with native tissues and only in case of failure of this first surgery to be fitted with an anterior 4-arm implant.

We recommended the anterior 4-arm implant per primam for sexually inactive patients and those with known risk factors for cystocele recurrence (diabetes, multiparity, vaginal vault prolapse, connective tissue abnormalities).

10.1.3. REAR COMPARTMENT

10.1.3.1. Regarding **uterine prolapse,** we used operative techniques that preserve the uterus and cervix whenever possible, considering that it is not normal to remove a healthy organ, which in addition provides insertion for all the ligaments and fascia that support the pelvic floor.

We performed hysterectomy only on those patients who had decubitus lesions on the cervix, those who had a herdeocollateral history of neoplasm of the cervix or uterine body, and those who requested hysterectomy on their own responsibility.

Consequently, hysterectomy represented only 12.35% of the procedures applied for the correction of uterine prolapse.

I believe that the best technique for hysterectomy aimed at the correction of uterine prolapse is the laparoscopic one due to the short duration of the surgical intervention, with almost non-existent intra- and postoperative complications .

We did not use this technique in the case of patients with a history of abdominal-pelvic surgery, in whom we performed the classic hysterectomy, through the abdominal route, due to the presence of the adhesion syndrome, nor in the case of elderly patients, with biological strength, in whom we preferred hysterectomy through the vaginal route .

I did not use it either for elderly patients, with associated problems, in whom an intervention carried out through the abdominal route would have been contraindicated, in these cases preferring hysterectomy through the vaginal route, which does not require a long operative time.

For the patients whose uterus was preserved, I used 3 reconstructive procedures and an obliterative procedure, which I used only in elderly, emaciated patients without sexual activity.

Among the reconstructive procedures, fixation of the cervix to the sacrospinous ligaments was also applied to patients in whom abdominal surgery was to be avoided (previous history of multiple surgeries on the abdomen or pelvis, advanced age, significant extragenital morbidity). After this procedure, the recurrence of uterine prolapse at one year was 6.66%, other complications recorded being: dyspareunia (13.33%), chronic pelvic pain (6.66%) and urinary infection (6.66%).

Most cases of uterine prolapse were operated by laparoscopic techniques.

At first, we used laparoscopic hysteropexy - the Oxford procedure that involves the suspension of the uterine isthmus at the anterior sacral ligament by means of a polypropylene strip. Using this technique, we recorded intraoperative bleeding in 16.66% of cases and postoperatively 8.33% of uterine prolapse cases recurred after one year, while 8.33% of cases presented with chronic pelvic pain.

Subsequently, the main laparoscopic technique used was laparoscopic hysteropexy – the procedure with lateral fixation in which intraoperative bleeding was minimal, immediate postoperative complications non-existent and late postoperative complications were represented by recurrence in a proportion of 2.04%, dyspareunia 4.08% and urinary tract infection 2.04%. 91.83% of the patients operated with this procedure did not have any kind of late complication at the consultation performed one year after surgery.

In conclusion, to surgically treat uterine prolapse we must start by answering the question: ***can we or can we not keep the uterus and cervix?***

Only then will we ask ourselves the following question: ***which of the surgical techniques is more suitable for that patient?***

We cannot preserve the uterus if the patient is likely to develop genital cancer, if she has decubitus lesions of the cervix, or if she imperatively requires a hysterectomy.

If the patient has already had surgery on the abdomen or pelvis and is in a good biological condition, being able to withstand a new surgical intervention on the abdomen, the classic abdominal hysterectomy can be performed.

If the patient has comorbidities and an advanced age, it is good to shorten the operative time as much as possible and avoid an abdominal intervention. In these cases, vaginal hysterectomy is the most appropriate.

If the patient has no previous operations on the abdomen or pelvis and if she is in good health, laparoscopic hysterectomy will be performed.

If we have decided that we can keep the uterus and cervix as the central element supporting the pelvic floor, we can have 3 situations:

1. *If the patient is elderly, with important comorbidities and no sex life, the most appropriate technique is the obliterative one, the colpocleisis.*
2. *If the patient has a sexual life and the preoperative assessment contraindicates an abdominal surgical intervention, we will use fixation of the cervix to the sacrospinous ligaments.*
3. *If the patient can tolerate an abdominal surgical intervention, a laparoscopic hysteropexy will be performed, either by the Oxford procedure (suspension of the uterine isthmus at the anterior sacral ligament), or by the lateral fixation procedure, which has the best results over time.*

10.1.3.2. To correct **the prolapse of the vaginal vault,** we used 3 reconstructive procedures and one obliterative procedure.

The obliterative procedure (colpocleisis) was used only in two cases, in which we were limited in the choice of a reconstructive procedure due to the extragenital morbid preoperative balance which contraindicated an abdominal intervention or a long-term intervention.

The reconstructive procedures were represented by a vaginal procedure (colposuspension of the sacrospinous ligaments) and two laparoscopic procedures (laparoscopic sacrocolpopexy and laparoscopic colposuspension – the procedure with lateral fixation).

Colposuspension at the sacrospinous ligaments (2 cases) had no intraoperative complications, immediately postoperatively a perineal hematoma and an acute retention of urine were recorded; one year postoperatively, one of the cases complained of dyspareunia.

Laparoscopic sacrocolpopexy had 16.66% intraoperative complications represented by bleeding during dissection and 16.66% immediate postoperative complications represented by acute urinary retention. Of the 6 cases operated by this technique, at the consultation performed one year after surgery, one case presented the recurrence of vaginal vault prolapse (16.66%).

All 12 cases to which laparoscopic colposuspension was applied - the procedure with lateral fixation were free of intraoperative, immediate or late postoperative complications, one year postoperatively the uterine suspension was effective.

Summarizing the results obtained with different surgical techniques in the correction of vaginal vault prolapse, I recommend the following conduct in the surgical treatment of this condition:

1. *If the patient does not have a sexual life, is old and has disabling extragenital conditions, an obliterative procedure (colpocleisis) is indicated.*
2. *If the patient wants to continue her sexual life but has comorbidities or has numerous abdominal or pelvic interventions that contraindicate a new abdominal intervention, a procedure with a vaginal approach (colposuspension at the sacrospinous ligaments) will be used.*
3. *If the patient is sexually active and can withstand abdominal surgery, a laparoscopic suspension procedure will be used, either sacrocolpopexy or, preferably, colposuspension with lateral fixation* .

10.1.3.3. To correct **the rectocele** , we used two operative techniques: a technique that uses the own tissues (posterior colpoperineorrhaphy) and a technique that uses a synthetic mesh (mounting of a posterior tape with bilateral sacrospinous fixation).

In most cases we applied posterior colpoperineorrhaphy, which had a small number of intraoperative complications, recognized and resolved on site (rectal injury in 1.28% of cases, vaginal injury in 3.84% of cases, and intraoperative bleeding in 1.28% of cases), immediate postoperative complications of 1.36% (perineal hematoma) and in which one year after surgery there was a recurrence in a percentage of 9.58% of cases. The most common late postoperative complication was dyspareunia in 28.76% of cases.

We used the second surgical technique (mounting a posterior band with bilateral sacrospinous fixation) in 16 cases to correct a recurrent rectocele. With this technique, we had intraoperative bleeding in 11.11% of cases and perineal hematoma in 6.25% of cases. One year postoperatively, there was no case of recurrence, but 37.5% of the patients complained of dyspareunia.

Studying the advantages and disadvantages of the two techniques, we have determined that the appropriate surgical approach for rectocele correction will be the following:

1. *Patients facing the first attempt at rectocele repair will have posterior colpoperineorrhaphy applied, a technique that uses their own tissues, has an acceptable rate of recurrence and*

dyspareunia at one year postoperatively, and avoids the late complications to which patients are exposed a polypropylene mesh is implanted (erosion of the mesh, infections at the level of the implant).

2. *Patients presenting for correction of a rectocele recurrence will be advised to accept the fitting of a posterior tape fixed to the sacrospinous ligaments. This technique, although followed by a higher percentage of postoperative dyspareunia, ensures the maintenance of the rectocele correction, in the present study there was no case of recurrence at one year postoperatively.*

10.1.3.4. For the surgical treatment of **elythrocele,** we used two operative techniques: McCall's culdoplasty, which is a reconstructive procedure, and colpocleisis, an obliterative procedure.

McCall culdoplasty had no intraoperative incidents; immediately postoperatively, we noticed acute retention of urine in 20% of the patients, and one year postoperatively, the recurrence of elytrocele occurred in a percentage of 20%.

The obliterative procedure, the colpocleisis, had no operative incidents and no postoperative complications.

The strategy that I have applied and that I recommend in case the correction of the elytrocoel is desired is the following:

I recommend that sexually active patients accept the McCall culdoplasty as their first surgical decision because, although it has a 20% recurrence rate, this technique preserves the sexual function of the vagina.

Colpocleisis remains reserved for patients who are not sexually active and in whom, due to associated comorbidities, they cannot endure a longer surgical intervention or a reoperation in case of recurrence.

All these observations that I made during the development of my doctoral thesis I concentrated in an algorithm for the surgical treatment of pelvic static disorders.

OPTIMIZATION OF THE SURGICAL TREATMENT OF PELVIC STATIC DISORDERS

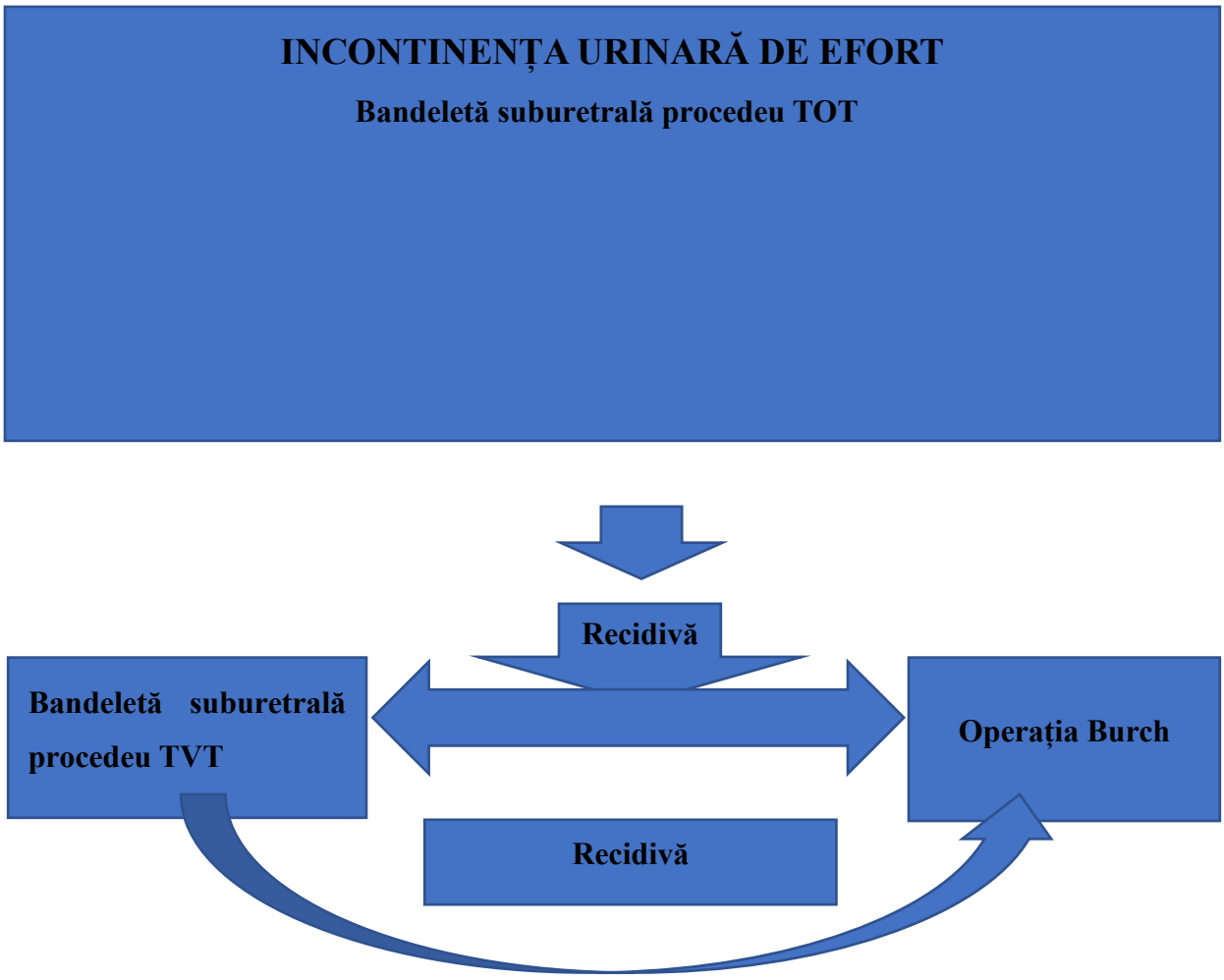

Figure 10.1. Optimizing the surgical treatment of stress urinary incontinence

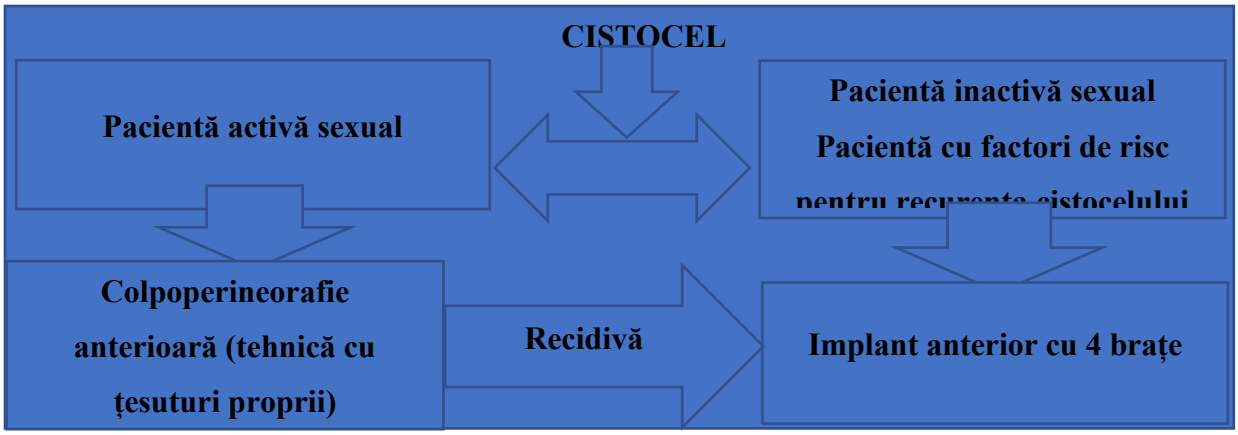

Figure 10.2. Optimizing the surgical treatment of cystocele

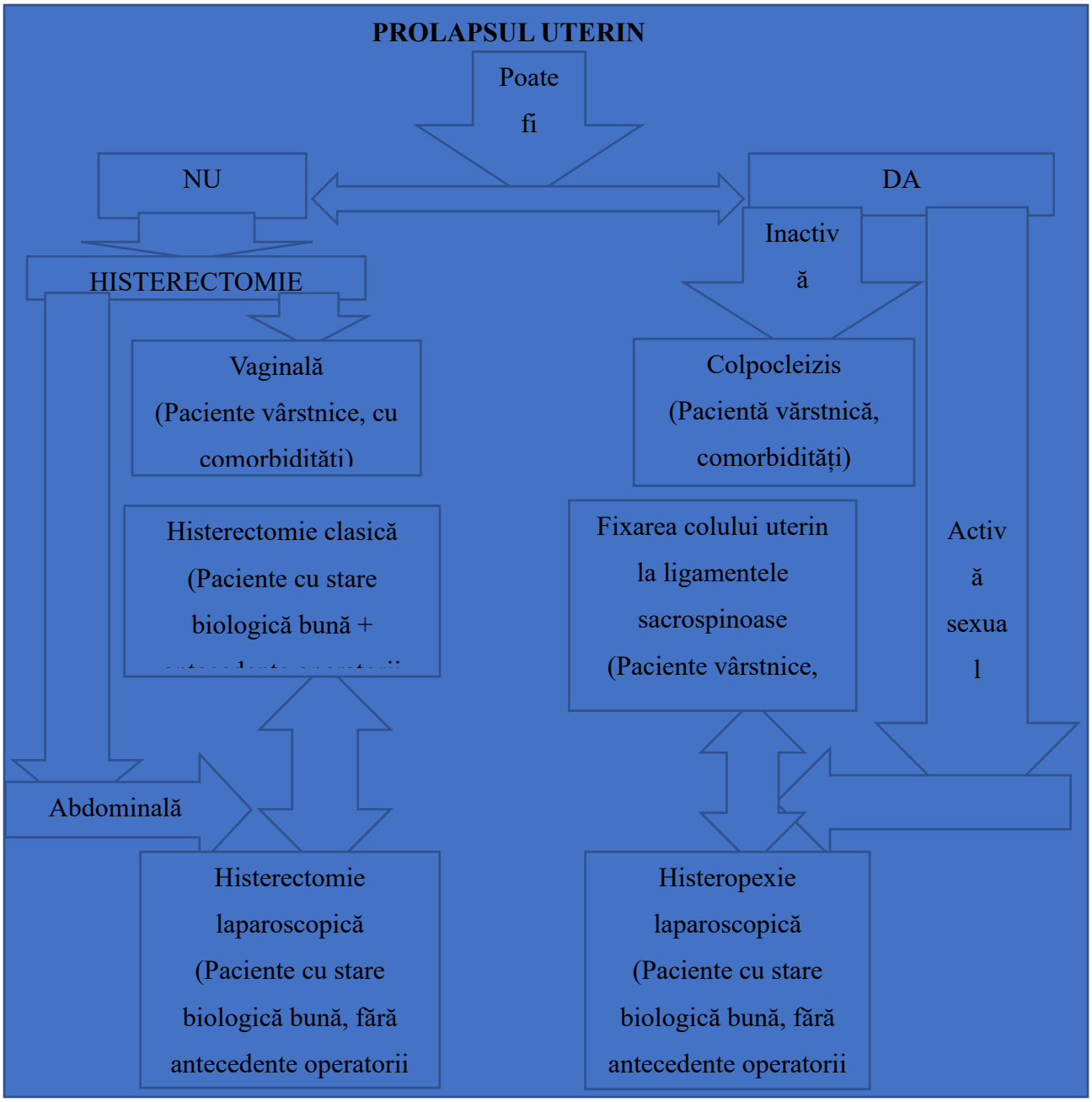

Figure 10.3. Optimizing the surgical treatment of uterine prolapse

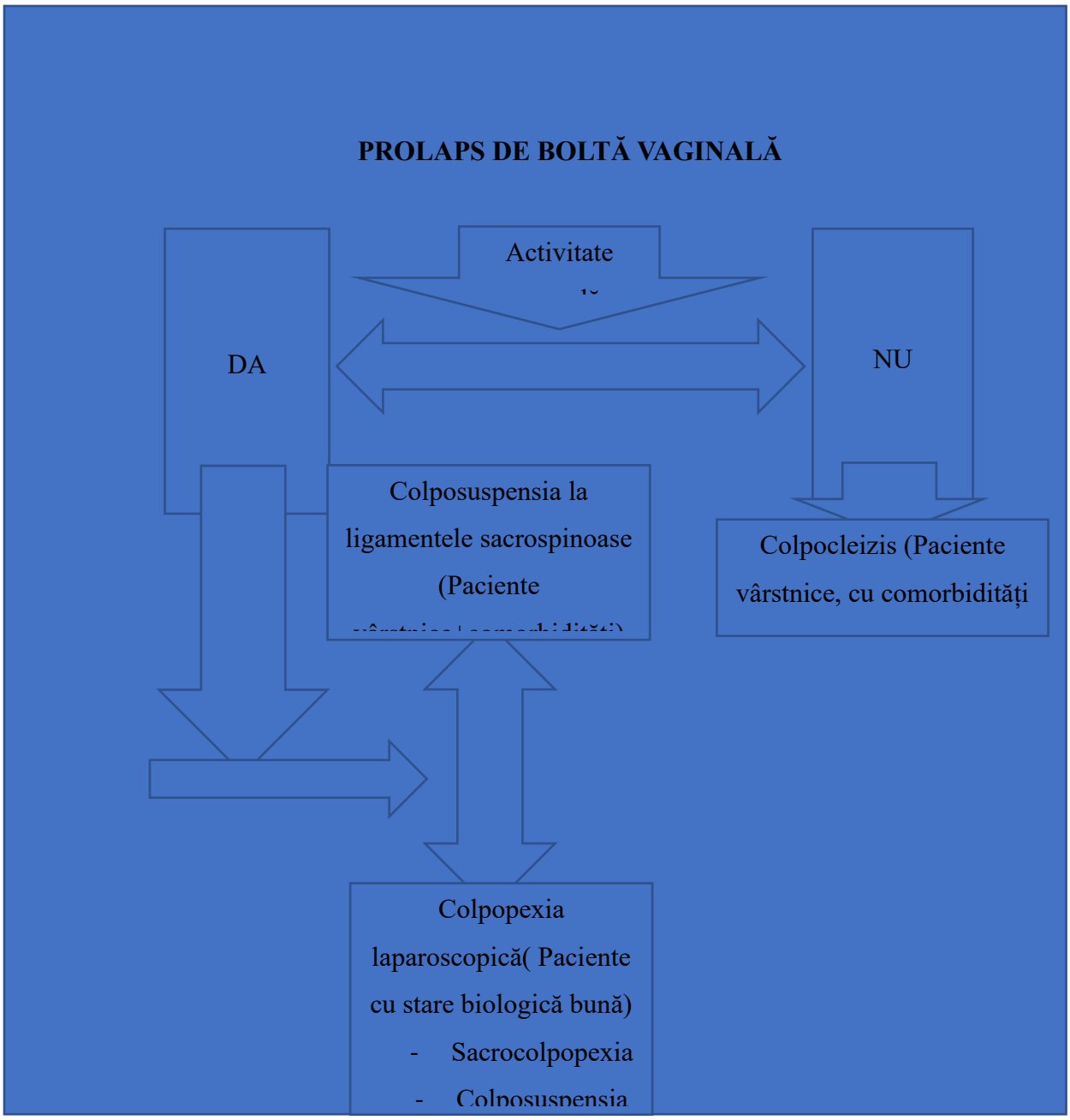

Figure 10.4. Optimizing the surgical treatment of vaginal vault prolapse

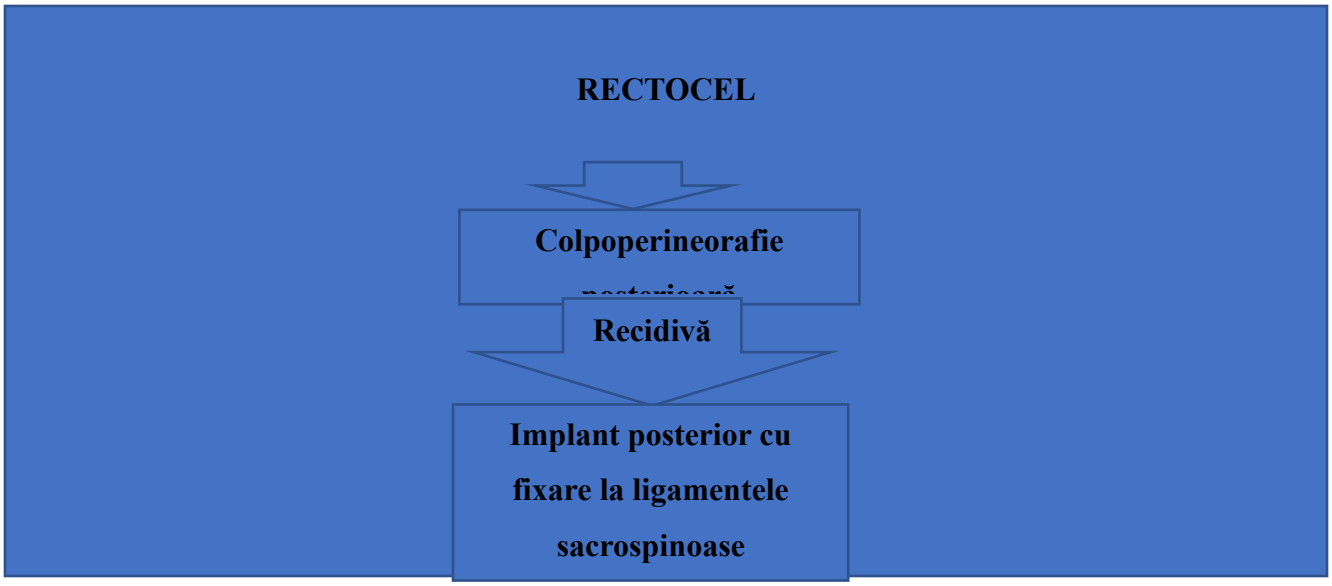

Figure 10.5. Optimizing the surgical treatment of rectocele

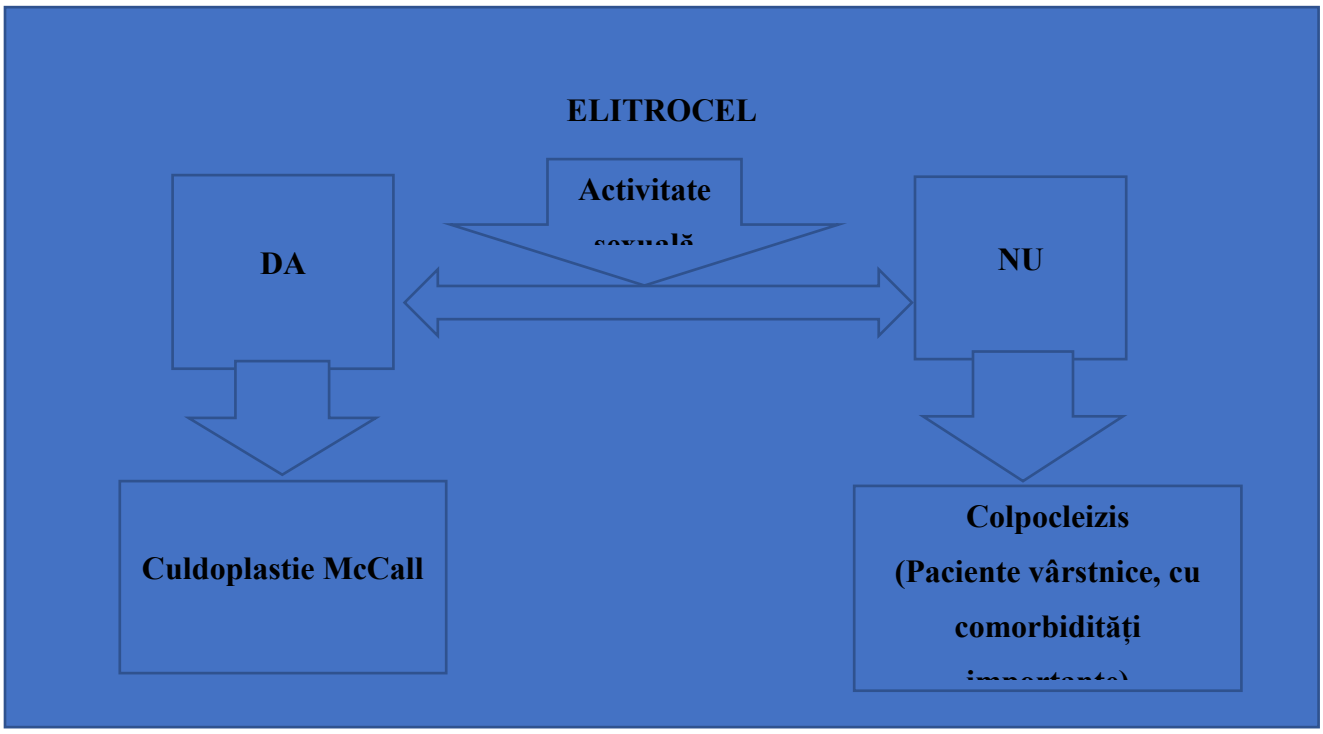

Figure 10.6. Optimizing the surgical treatment of elythrocele

10.2. LAPAROSCOPIC HYSTERO/COLPOPEXY – LATERAL FIXATION PROCEDURE

The second objective of the doctoral thesis was to present my personal experience with a surgical technique that I called laparoscopic hystero/colpopexy - a procedure with FIXING lateral and which we developed in the Surgery Clinic of SCJU Constanța for the correction of uterine prolapse or vaginal vault prolapse. The lateral suspension technique is a modification of the Dubuisson technique that suspends similarly but at a different level, 4 cm above the iliac spine.

I developed this technique after gaining experience in abdominal and pelvic laparoscopic surgery and in the surgical treatment of pelvic static disorders, out of the desire to offer patients with uterine prolapse or vaginal vault prolapse a safe method to resolve this pathology.

During the years of surgical practice I have made three observations that I consider important and that have contributed to the development of the laparoscopic hystero/colpopexy technique - procedure with lateral fixation.

The first observation was that laparoscopy offers good visibility and intraoperative exposure allowing accurate tissue dissection, without significant intraoperative bleeding, without surgical wound complications (which are common in classic abdominal wall surgery), the laparoscopic approach being preferable in patients obese; patients operated laparoscopically recover faster than those operated classically and the postoperative scars are tiny.

The second observation was that non-absorbable prosthetic materials provide increased resistance over time through the persistence of the implant which constitutes a skeleton on which the connective structures are reorganized.

The third observation was that when an implant is used to improve pelvic static it must be anchored to tissues with increased resistance (periosteum, sacrospinous ligament, anterior sacral ligament), which is not influenced by the decrease in estrogen levels.

The technique we developed takes into account these observations, approaching the pelvis laparoscopically and using a polypropylene strip that is fixed with absorbable fasteners (AbsorbaTack) on the anterior face of the uterine isthmus, and laterally is pulled bilaterally with forceps inserted through the inguinal canal, following the path of the round ligaments and fixed to the aponeurosis of the anterolateral muscles of the abdomen, tissue with increased resistance and not influenced by hormones, which can also be used in elderly patients, in whom the level of estrogens is low.

In this study, we applied laparoscopic hysteropexy – the procedure with lateral fixation to 49 patients with uterine prolapse and laparoscopic colpopexy – the procedure with lateral fixation to 12 patients.

The advantages of the technique are: the short duration of the operation, with low risk of intrapelvic organ damage and intraoperative bleeding; immediate postoperative complications are almost nonexistent, and the anatomical success rate one year postoperatively is impressive (in our study – 97.96%); the duration of hospitalization is short (3 days±1.1 days in the present study), the postoperative recovery is fast, as is the socio-professional reintegration.

The disadvantage of the technique would be the fact that it requires special skills of laparoscopic surgery, being accessible after a long experience.

10.3. STUDY OF RISK FACTORS OF PELVIC STATIC DISORDERS AND PREDICTORS OF POSTOPERATIVE SUCCESS

The third objective of the doctoral thesis was to study the risk factors of pelvic static disorders as well as to formulate the predictive factors of postoperative success.

10.3.1. RISK FACTORS OF PELVIC STATIC DISORDERS

10.3.1.1. Predisposing factors

The presence of hereditary antecedents of pelvic static disorders or urinary incontinence, as well as the coexistence of hernias, hernias, hydrostatic varices, hemorrhoids, diabetes can predispose to the occurrence of pelvic static disorders either through the congenitally poor quality of the connective tissues and the supporting ligamentous apparatus or through organ hypoperfusion pelvis from diabetic arteriopathy.

10.3.1.2. Determined factors

Hormonal factors . Female sex hormones influence the elastin and collagen fibers, acting on the quality of the connective tissue and the ligamentous apparatus supporting the pelvic organs.

The number of tasks . During pregnancy, the vaginal walls increase their elasticity under the influence of progesterone, prostaglandins and relaxin, which have increased titers. Therefore, the vaginal walls with increased elasticity can no longer provide an increase in tension that is sufficient to close the urinary tract upon exertion. Increased laxity also occurs at the level of the uterosacral ligaments, symptomatically evidenced by the appearance of pelvic pain and the feeling of pressure in the pelvis. So, the greater the number of pregnancies a woman has, the greater the risk of pelvic static disorder.

Age at menopause. After menopause there is a deterioration of collagen fibers and a decrease in the number of elastin fibers which is caused by the decrease in serum estrogen levels. A decrease in the extensibility of the vagina and a laxity of the support and support structures of the pelvic organs can be observed, which favor the occurrence of pelvic static disorders.

Obstetrical factors . The passage of the fetal head through the birth canal can compress or even destroy the connective fibers in the pelvic floor causing pelvic static disorders in any of the three compartments of the pelvic floor.

Number of natural births. In the present study, the occurrence of pelvic static disorders was correlated with the number of vaginal births, consistent with the specialized literature.

Obstetrical complications had an increased frequency among the women participating in the study: 44.03% had an episiotomy at birth; 11% had extensive perineal injuries during the perineal rupture during childbirth; 1.52% of patients had forceps applied during a difficult birth.

Surgical factors.

Previous pelvic surgery (especially total hysterectomy) affects the support and support apparatus of the pelvic organs by injuring or removing the fulcrum of the pelvic ligaments on which adequate traction is no longer exerted. As a result, the structure of the ligaments is weakened and they can no longer fulfill their role of suspension and support. And in this study total hysterectomy was present in the antecedents of 14.37% of patients.

Vaginal surgery in the antecedents contributes to the occurrence of pelvic static disorders through the exaggerated excision of the vaginal mucosa. In the study group, 9.78% of patients had an anterior colpoperineorrhaphy in the antecedents, 7.65% - a posterior colpoperineorrhaphy, 3.66% and 6.66% had a previous procedure for urinary incontinence.

10.3.1.3. Factors predicting postoperative success

1. Removal of modifiable risk factors (avoidance of physical exertion, smoking cessation, weight loss, pelvic floor toning through exercise, estrogen treatment)
2. Good knowledge of pelvic floor anatomy
3. Careful selection of cases
4. Good preoperative preparation of the patient (treatment of chronic conditions, preparation of the vaginal mucosa with estrogens)
5. Choosing the most appropriate technique to solve the respective pathology

6. Impeccable operative technique (following the original surgical technique, no unnecessary detachment of tissues, no tension sutures, no abusive excision of the vaginal mucosa)
7. Vast operative experience, allowing immediate recognition of intraoperative complications and their rapid resolution
8. If a procedure that uses implants is chosen to solve the pelvic static disorder, the surgeon must be aware of the intraoperative risks of their installation (bladder, vascular, nerve damage), as well as the risk of late erosion of the vaginal mucosa.
9. The operator must have specialized training for each synthetic mesh insertion technique.
10. Selecting the type of mesh based on its own characteristics (material, number and size of mesh) and biomechanical properties
11. The method of inserting the implant should be adequate for the repair of the respective defect, it being preferable that the meshes used do not have an excessive size
12. The best surgery is the first surgery
13. If the patient presents several pelvic static disorders at the same time, it is recommended that they be corrected in the same operative session
14. Careful immediate postoperative care
15. Recommendation to continue local treatment with estrogens 3 months postoperatively
16. Recommendation of physical and sexual rest for 6 months postoperatively

11. CONCLUSIONS

1. We performed a prospective study on a group of 327 patients diagnosed with various pelvic static disorders. This study had 3 objectives: optimizing the surgical solution of pelvic static disorders by comparing the results of the different surgical techniques used; presentation of personal experience in the surgical treatment of uterine and vaginal vault prolapse using the hystero/colpopexy technique with bilateral lateral fixation of the uterus or vaginal vault, a technique developed in the Surgery Clinic of SCJU Constanța; studying the major causes that determine the installation of pelvic static disorders.
2. The fact that the methods of surgical treatment of static disorders are so numerous proves that an infallible technique of adequate restoration of the pelvic floor support apparatus has not yet been found, which is why I wanted to contribute my experience to solving this problem. such common pathologies.

3. The predisposing factors of pelvic static disorders are: the presence of hereditary antecedents of pelvic static disorders and the coexistence of hernias, hernias, hemorrhoids, hydrostatic varices (denotes a congenitally weak quality of the ligamentous system of pelvic suspension and support; administrative category of residence (for patients from the rural environment is more difficult and the lack of education delays the presentation to the doctor); occupation (exercise of jobs that require sustained physical effort); diabetes hypoperfusion of the pelvis and pelvic support apparatus.
4. The determining factors of pelvic static disorders can be divided into three categories: hormonal factors (age at menopause and number of pregnancies); obstetric factors (number of vaginal births and obstetric complications) and surgical factors (pelvic surgery, especially that involving total hysterectomy and vaginal surgery by excision of excess vaginal wall). In the study, the prevalence of pelvic static disorders correlated with all of these factors.
5. I believe that the preoperative assessment of the patient, including the history, the general clinical examination, the paraclinical examinations is essential for the formulation of a complete diagnosis, both of the pelvic static disorders that she presents and of any associated pathology, which may be involved in the appearance and evolution their.
6. Optimizing the surgical treatment of pelvic static disorders must take into account the following criteria: the patient's age, the presence of comorbidities, the patient's symptoms, the clinical diagnosis, the patient's preferences, the logistics of the service and the experience of the surgical team.
7. Pelvic static disorders do not endanger life, but affect the patients' quality of life, therefore their correction is a functional surgery, which requires a good postoperative functional result, essential to not affect the quality of life. If the postoperative result is not the expected one, aggravates the symptomatology or creates new symptoms, altering the patient's quality of life, conflict situations can be reached, some even with medico- legal implications. Therefore, it is mandatory to correctly inform patients preoperatively about the possibility of such complications, followed by obtaining informed consent for surgical intervention.
8. If a patient presented simultaneous damage to several compartments of the pelvic floor, their resolution took place in the same operative session, thus avoiding the aggravation of pre-existing pelvic static disorders or the postoperative appearance of new ones.

9. For the surgical treatment of stress urinary incontinence, the most effective and safe method and which has a positive impact on the quality of life is the fitting of a suburethral band through the TOT procedure or the TVT procedure. I recommend the TOT way of mounting the band because it has a small risk of immediate intra- and postoperative complications and the operating time is shortened, as it is not necessary to check the extravesical passage of the tunnelers by intraoperative cystoscopy. The TVT way of mounting the suburethral tape will be used only in the case of recurrent urinary incontinence or in the case of patients with an occupation that requires great physical effort.
10. The optimal surgical treatment of cystocele is represented by anterior colporrhaphy in the case of women who are sexually active because, although recurrence is more frequent than in techniques using synthetic meshes, the percentage of postoperative dyspareunia is lower, ensuring a better quality of life. The four-arm anterior implant, which restores the pubocervical fascia, is recommended per primam for sexually inactive patients. Sexually active patients who relapse after the native tissue technique are also recommended the anterior four-arm implant.
11. Optimal surgical treatment of uterine prolapse involves the use of a technique that preserves the uterus and cervix, which provides insertion for the supporting and suspensory fascia and ligaments of the pelvic floor. Hysterectomy will only be used if there is uterine or cervical pathology. The hysterectomy will preferably be performed transabdominally using the laparoscopic technique or, when laparoscopy is not practicable due to a history of multiple abdominal surgery, the classic hysterectomy technique will be used. In elderly patients, in whom abdominal surgery was risky due to the precarious biological status, we used vaginal hysterectomy. Whenever possible, we preserved the uterus and cervix, the operative approach for the correction of uterine prolapse being either transabdominal or vaginal. The transabdominal interventions performed were represented by two laparoscopic techniques: hysteropexy by the Oxford procedure and hysteropexy by the lateral fixation procedure developed in the Surgery Clinic of SCJU Constanța, a technique that was used for most patients. In the case of elderly, hardened patients, without pathology of the body or cervix, we had two situations: in patients who wanted to continue their sexual life, we applied the technique of fixing the cervix to the sacrospinous ligaments bilaterally using synthetic meshes, and in sexually inactive patients, we practiced an obliterative technique, colpocleisis.

Comparing the techniques used for the correction of uterine prolapse, we concluded that laparoscopic techniques are the best due to the fact that we had the fewest intraoperative and immediate postoperative complications, the rate of anatomical success was high, as well as the degree of postoperative satisfaction of the patients and the rate of relapse was very low.

12. Optimizing the surgical treatment of vaginal vault prolapse must take into account the following eventualities: advanced age, the presence of extragenital comorbidities, a history of multiple abdominopelvic surgeries and the patient's option to be sexually active. For elderly patients, with comorbidities and no sexual life, we recommended colpocleisis. In elderly patients, sexually active but who presented multiple comorbidities or had numerous abdominal operations, we practiced colposuspension at the sacrospinous ligaments bilaterally by means of synthetic meshes. For patients without significant comorbidities and who were sexually active, we used laparoscopic techniques (mainly colposuspension through the lateral fixation procedure and rarely sacrocolpopexy).
13. The surgical treatment of choice for rectocele was the technique that uses the own tissues (posterior colpoperineorrhaphy), avoiding the complications of the synthetic mesh implant. We obtained satisfactory results with this technique in terms of anatomical success which had a high rate and the patient's quality of life, the dyspareunia rate being low, as well as the recurrence rate. In the patients who presented for a recurrent rectocele, we mounted a posterior band that we fixed to the sacrospinous ligaments, an operation that effectively corrected the rectocele (there was no case of recurrence one year after surgery), but which had an increased percentage of dyspareunia.
14. Patients presenting for correction of a rectocele recurrence will be advised to accept the fitting of a posterior tape fixed to the sacrospinous ligaments. This technique, although followed by a higher percentage of postoperative dyspareunia, ensures the maintenance of the rectocele correction, in the present study there was no case of recurrence at one year postoperatively.
15. The optimal surgical correction of the elythrocele must also take into account the biological state of the patient as well as her desire to continue her sexual life or not. In most patients, we performed the McCall culdoplasty, an intervention preferred by sexually active patients, although it has a high recurrence rate. I practiced colpocleisis only in the case of elderly patients, sexually inactive and who presented important comorbidities.

16. Since many of the patients with pelvic static disorders showed damage to several compartments of the pelvic floor, we preferred to restore the anatomy and restore the physiological function in a single intervention, considering that the repair of a single compartment will lead to changes in forces that will weaken over time and the other compartments, requiring another surgical intervention
17. Optimizing the surgical treatment of pelvic static disorders must also take into account the economic factor, therefore I think it is good that minimally invasive procedures and laparoscopic techniques are the main option of the operator. The advantages of these techniques are: short duration of the surgical intervention, short hospital stay, good and stable postoperative results, net improvement of the patients' quality of life, rapid postoperative socio-professional recovery and reintegration.
18. Intraoperative complications were few in number, most of the time in a lower percentage than in the specialized literature. We recorded no major intraoperative complications (major vascular injuries, nerve injuries, intestinal perforations). Urogynecological interventions in the antecedents of the patients were correlated with the increase in the number of intraoperative complications. Intraoperative complications were immediately recognized and promptly resolved, without jeopardizing the patient's subsequent evolution. Immediate postoperative complications were easily resolved and did not influence the outcome of the surgery. The percentages of another pelvic static disorder, recurrence and erosion of synthetic meshes were also lower than those reported by other authors.
19. I frequently used synthetic meshes, both for the cure of stress incontinence (installation of suburethral bands) and for the correction of uterine prolapse (suspension of the cervix at the sacrospinous ligaments bilaterally), for the correction of prolapse of the vaginal vault (colposuspension at the sacrospinous ligaments), for the cure of cystocele (anterior implant with four arms) or rectocele (mounting of the posterior band with fixation to the sacrospinous ligaments bilaterally). We have also used synthetic meshes in laparoscopic surgeries, for suspension of the uterine isthmus or for colposuspension either at the anterior sacral ligament (Oxford procedure) or at the aponeuroses of the anterolateral abdominal muscles (lateral fixation procedure). The recurrence rate of pelvic static disorders after surgical interventions in which synthetic meshes were used was lower than that in which the patient's own tissues were used for reconstruction. The percentage of synthetic table erosion was lower compared

to the percentages reported by other authors. We observed that a higher number of table erosions occurred in elderly, diabetic patients with a history of urogynecological surgery. I believe that the preoperative preparation of the vaginal mucosa with estrogens contributes to avoiding the occurrence of erosions of the synthetic table, therefore I systematically recommend it to every patient who is to be operated on vaginally. In my experience, I noticed that the least erosions occurred after implants with meshes made of large-mesh polypropylene, which I adjusted according to the local anatomical conditions, preferring to use as little synthetic material as possible.

20. We recommended to the patients the postoperative continuation of the estrogenic treatment for another 3 months for better healing, obtained by intensifying the synthesis of mature collagen that favors the increase in the thickness, consistency and elasticity of the vaginal mucosa.
21. We also observed that a long period of sexual abstinence (2 months) correlated with a small number of occurrences of meningeal erosions.
22. After a long experience in laparoscopic surgery and surgery for pelvic static disorders, we have developed a surgical technique to resolve uterine and vaginal vault prolapse: hystero/colposuspension - procedure with lateral fixation, which meets the four major goals of the surgical cure of prolapse: reduction of prolapse, lack of functional symptoms, patient satisfaction and avoidance of complications. The technique is simple, requires a short operative time with minimal operative trauma, rapid postoperative recovery with a high degree of satisfaction in terms of quality of life and early socio-professional integration of the patients. This technique is preferable in the case of obese patients, where other types of operations are accompanied by important technical difficulties, intraoperative risks and additional postoperative morbidities. From an economic point of view, the application of this technique is advantageous due to the short duration of hospitalization, cheap postoperative medication and quick socio-professional integration.
23. We synthesized the optimization of the surgical treatment of pelvic static disorders by creating an algorithm that we applied constantly.
24. We identified the predictors of anatomical and functional postoperative success: the removal of modifiable risk factors; good knowledge of pelvic floor anatomy; careful case selection; good preoperative preparation of the patient; choosing the most suitable technique to solve

the respective pathology; impeccable operative technique; extensive operative experience, which allows the immediate recognition of intraoperative complications and their rapid resolution; if a procedure that uses implants is chosen to solve the pelvic static disorder, the surgeon must know the intraoperative risks of their installation; the operator must have specialized training for each synthetic mesh insertion technique; selection of the type of mesh based on its own characteristics and biomechanical properties; the way of inserting the implant is suitable for the repair of the respective defect, it being preferable that the tools used do not have an excessive size; the best operation is the first operation; if the patient simultaneously presents several disorders of pelvic statics, it is advisable that they be corrected in the same operative session; careful immediate postoperative care; continuation of local estrogen treatment 1 month postoperatively; physical and sexual rest for 2 months postoperatively; compliant patient.