



the Italian Association of Urology Gynecology and Pelvic Floor

World Women Perineal Care



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AIUG, the Italian Association of Urology Gynecology and Pelvic Floor, which for many years has been conducting studies on diseases that affect the uro-genital and pelvic static sphere, is developing important guidelines in categorization, diagnostics and treatment of these disorders. AIUG promotes WWPC, World Women Perineal Care, the second global day dedicated to women's health.

The participating centers in Italy and abroad will be open free to the public for a day, in order to provide information on: "Perineum: prevention/education and care.

President AIUG
Mauro Garaventa



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What is the perineum?

Perineum is a region of the body which is located in the lower part of pelvis, and closing in at the bottom of the pelvis, constitutes the pelvic floor together with the bones, muscles, nerves and fascial components.

In some cases the term "perineum" is defined as a skin surface that covers the diamond-shaped region bounded anteriorly by the pubic symphysis, posteriorly by the coccyx and laterally by the ischial tuberosities. This lozenge could be divided into two triangular regions that is the pelvic diaphragm: the front triangle or anterior perineum is the passage of the urogenital apparatus (urethra and vagina), while the posterior triangle or posterior perineum is the last step of the gastro-intestinal tract (the anal canal).

In other cases the term "perineum" concerns the entire set of skin, muscle, fascial and ligamentous tissues that contribute to the closure at the bottom of the pelvis.

The pelvic floor is the set of muscles, ligaments and bands which supports the pelvic organs. It's a "unicum" anatomofunctional and it serves as a trenchment of the pelvic viscera, ejectives (at the level of the pelvic diaphragm there are urinary and anorectal sphincter) and, last but not least it's important in the completion of childbirth. Its correct function depends on the perfect anatomical integrity and on

the interaction of all anatomical structures that constitute it (the muscle component represented by the muscular complex of the anus levator), the component of connective tissue, the "Endopelvic Fascia", and the nerve components. The damage of one of the above-written structures is a contributing factor in the deterioration of the others, until the functional and anatomical compensation mechanisms becomes inefficient inducing thus the onset of disfunctions that disrupt important aspects of women's quality of life.

Therefore since the pelvic floor has a role in both support and in passage, it must be at the same time strong and elastic.



Biological changes phases in women's life

In human evolution, the transition to upright posture induced significant changes in the anatomy and function of the pelvic floor and perineum. The pelvis has come to find in the lower part of the abdominal cavity, subjected to the weight of the viscera, to variations of intra-abdominal pressure and subjected to constant convergence of force of gravity vectors on it. Consequently the pelvic support has strengthened, compared to that of mammals, in order to support the weight and pressure of the overlying organs while ensuring sufficient flexibility for the proper discharge of the above functions. In woman's life the events that have most influence on the function of the pelvic floor is pregnancy and childbirth, which are the main "defendants" for the onset of pelviperineal dysfunction.

Pregnancy seems to have a role, especially in the onset of urinary incontinence, both through major changes in hormonal status, either by changing the vectors of intra-abdominal pressure from the uterus products gravidarum and the consequent reorganization of postural lumbosacral region (accentuation of the dorsal kyphosis and lumbar lordosis), regardless of the mode of delivery. On one hand all this determines a displacement of the vector intra-abdominal pressure, which running out especially on the front side of the pelvic floor (uro-genital hiatus), on the other hand it leads to a situation deeply unfavorable to the ability of contraction and/or to the pelviperineal muscle relaxation (pelvic anteversion).

During a vaginal birth the pelvic floor and perineum are subjected to large compressive and tensile forces, pelvic muscles are stretched in the longitudinal direction and pushed laterally by the baby's head.

The international literature is unanimous in confirming that the perineal trauma in childbirth has a significant role in the onset of perineal dysfunction in the short term (usually recoverable within 12-18 months) and in long terms.



It represents an important moment of biomechanical stress on the muscle-fascial and nerve structures. The long latency between "birth event" and the appearance of prolapse clinically evident makes it into account other factors that influence the growth. The advent of menopause is another critical time for "the health of the pelvic floor".

It represents a physiological transition phase during which ceases the reproductive capacity caused by the decline of ovarian function. The

hypoestrogenism that follows it, has an impact on the urogenital apparatus due to the gradual reduction of the trophic action of ovarian steroids on vaginal epithelium with consequent changes in terms of elasticity and resistance on the entire lower portion of the urinary tract that is strongly influenced by the action that estrogens exert on it. As a matter of fact, the arrival of menopause, it undergoes atrophic changes at the thetrigone and urethra level. In menopause, perineum is involved for several reasons: the changed hormonal climate, characterized by ingravescenthypoestrogenism, involves modification of the extracellular matrix of the connective tissue with reduction of its elasticit, chronic evolution of the damage previously reported during pregnancy and childbirth, the occurrence of systemic diseases, such as constipation or chronic bronchitis, which interfere with abdominal pressure, changes in weight and body fat distribution.



Perineal dysfunctions

Epidemiological surveys on the prevalence of dysfunction of the pelvic floor and on its correlation with sex, age, pregnancy and types of delivery, confirm that urinary incontinence, anal incontinence (the stool or gas) and the utero-vaginal prolapse are the main alterations affecting the pelvic compartment. The dysfunctions of female pelvis represent an important aspect of public health both in the women's impact on quality of life and in the economic light. The clinical picture varies, according to the degree of descensus, to the feeling of vaginal encumbrance ("...I feel something is coming out") to the sense of weight, often accompanied by pains in the pelvic and/or lumbar regions. Sexual dysfunctions are often present with difficulty/scomfort/pain during coitus

and with abnormalities during urination and/or defecatory functions. Urinary incontinence is one of the major symptoms. It is manifested by involuntary leakage of urine in inappropriate places and times. The urinary dysfunction can occur even with urination difficulty, sometimes forcing the woman to assume particular positions or, to reduce the prolapse manually in order to obtain an adequate emptying of the bladder, are often present increased frequency of urination, nocturia and increased susceptibility to urinary infection. Urinary incontinence can also occur during sexual intercourse. With regard to anorectal dysfunctions, it may be present constipation (with the need to reduce the prolapse manually to get an adequate evacuation), but also incontinence with difficulty to hold air/feces and/or liquids. The clinical picture described above influences thus in a strongly negative the aspects of social life, the affective sphere, also in the work and it causes the woman to acquire behaviors strongly conditioned to limit the inconvenience.



Risk factors

All perineal dysfunction have a multifactorial etiology. The factors most strongly correlated with such dysfunctions are represented by pregnancy and menopause event. Pregnancy implies modifications of connective tissues and pelvic-perineal muscles which aren't only due to the increase of maternal weight and of the uterus volume, but also to changes in posture and maternal connective tissue. Indeed, the tissues structural changes which constitute the pelvic floor (muscle hypertrophy, hyperplasia of elastic fibers, the liver reduction in the ischio-rectal fossa and especially the "relaxation" of the connective) represents the first risk factor of the perineal modification.

In addition, the vagina delivery represents obviously the most traumatic event in the etiopathogenesis of perineal lesions. During the natural childbirth important changes occur in topographic anatomy borne by the pelvic floor induced by compression of submitted fetal part and by the high intra-abdominal pressure increase associated to the expulsive thrusts.

This involves a thinning of the suspension structures, until the possible rupture or detachment of the endopelvic fascia, disconnection or lesion of anus levator's muscle fibers in addition to neurologic injuries. Menopause is a physiological process that leads to loss of tone and elasticity of the tissues resulting in hypotonia of the perineum and the appearance of symptoms such as vaginal dryness, pain during sexual intercourse, sexual pleasure reduction, perineal heaviness, stress urinary incontinence, urinary urgency and stool incontinence. Though the role of estrogen on the functionality of the urogenital system is still under investigation, it is well known that bladder, urethra, vagina, and connective tissue of the pelvic floor are rich in estrogen receptors. Moreover, the decline in estrogen leads to a reduction of collagen.

The reduction of collagen and the thinning of the caliber muscle fibers thus represent some of the responsible factors of the perineal and pelvic floor dysfunctions (increased incidence of genital prolapse and urinary incontinence in postmenopausal).



SYMPTOMS

Symptoms of pelvic floor dysfunction are mainly represented by alterations of the components of connective tissue and muscle of the pelvic floor. The patient usually shows symptom that affect the genital and sexual sphere, such as the sense of weight in the pelvic region, urinary and/or stool incontinence, constipation or difficult to have sexual contacts (dyspareunia).

The heaviness sensation in the pelvic region and dyspareunia are often caused by the presence of urogenital prolapse, which is a progressive course disease, characterized by downward displacement of the vagina (cystocele and rectocele) and uterus (hysterocele), accompanied by the displacement of the adjacent pelvic viscera for the collapse of their supports. The urinary and stool incontinence are characterized by the unintentional loss of urine and/or feces and gas, resulting in a worsening of the quality of life. Of course, the intensity of the symptom is correlated with the severity of dysfunction and so a good clinical and instrumental evaluation is required before beginning any course of treatment. Once you have identified and studied the dysfunction is possible to customize the therapy, which might be conservative or surgical.

CORRECT LIFESTYLE

It is important to remember the role of prevention in urinary and/or stool incontinence and in genital prolapse, in two particular moments in the woman's life: childbirth and menopause.



Of course you shouldn't forget some simple advices to reduce or avoid these dysfunctions: cigarette smoke (cough), overweight (obesity), regular bowel function (constipation), lifting weights over 10-15 Kg and doing heavy work without any help.

During pregnancy and childbirth, prevention is based on adequate preparation of pregnant women in the early months of gestation and on a careful childbirth assistance in order to reduce damages to the pelvic floor. An important objective is to educate the pregnant woman, making her aware of her perineal muscles. In this aspect childbirth preparation classes could be very important for the preparation to understanding how pelvic floor and perineum work both in relaxation phase and in muscle contraction phase. In this way, woman will take advantage of this techniques both during pregnancy and childbirth, as well as for life. Perineal injury during childbirth must be prevented with a proper behavior of midwife in the birthing room, aimed at the protection of the perineum. Finally, in post-partum, the aim is to normalize perineum anatomically and functionally. For this purpose, it is recommended a gymnastic abdominal in a systematic way only in a second phase, it could be inappropriate until the perineum got a normal tone. For this reason, it is recommended to the new mother a perineal re-education in a second time the abs gymnastic.

The prevention above has three purposes:

- to guarantee the anal and urinary continence for the woman
- to maintain a satisfying sex life
- to preserve the static of the pelvis

On the other hand, during menopause, an appropriate hormone replacement therapy, an adequate perineal exercises or a self-perineal massage with products that enhance the production of perineal connective could be useful for slowing down the process of tissues atrophy of the genital apparatus.



Treatment planning

The treatment planning of patients with pelvic floor dysfunction could take two fundamental choices which depend on the dysfunction severity: pelvic rehab or surgical treatment.

The first aim of rehab pelvis techniques is the improvement of the perineal performance in order to allow the perineum to exert its function of supporting pelvic viscera and/or of reinforcing urethral sphincter and/or of contrasting to the endoabdominal pressures.

The rehabilitation project is complex act which involves an educational approach and a combined use of various techniques.

The techniques keys of classic pelviperineal rehab are represented by:

- Pelviperineal chinesitherapy
- Biofeedback
- Functional electrostimulation

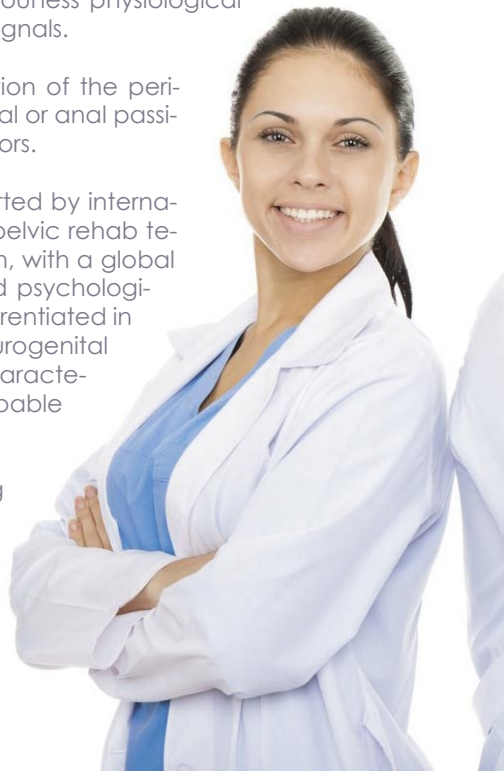
Chinesitherapy aims to realization and reinforcement of the perineal muscles by specific exercises initially performed under the therapist guide and then, after appropriate training at home.

Biofeedback (the term "biofeedback" comes from the combination of two english word: biological and feedback) is a learning or re-education method in which the patient is placed in a closed feedback circuit where informations are provided to him on unconsciouness physiological activities, monitored through audio or visual signals.

The functional electricostimulation is stimulation of the perineal muscles contactation through endovaginal or anal passive electrodes connected to external stimulators.

In the classical perineal rehabilitation, supported by international scientific publications are joining new pelvic rehab techniques which is offering a holistic approach, with a global attention to women, to postural defects and psychological aspects. Surgical treatment might be differentiated in anti-incontinence therapy and therapy for urogenital prolapse. The anti-incontinence surgery is characterized by the use of slings made of non-absorbable material places under the urethra.

It's a minimally invasive approach by making a small incision in the vaginal suburethral level and by passing the sling through retro-pubic planes or laterally to the basin (via transobturator).



The surgery for urogenital prolapse has undergone over twenty years continuous development due to extensive knowledge on the pelvipерineal pathophysiology and a therapeutic strategy which is more attentive to maintaining anatomical and functional integrity and so it's possible to improve the quality of life. Countless types of surgical procedures have been described for the correction of genital prolapse, associated or not to urinary or defecation problems.

Currently we can summarize these interventions into two types, depending on the mode of surgical approach:

- interventions by vaginal route, which is the traditional route for treatment of genital prolapse
- an abdominal interventions, which are currently being performed by laparoscopy or robotics.

The traditional surgical methods for vaginal route provide for the reconstruction of tissue structures to support prolapsed organs without the use of implants include the reconstruction of tissue structures to support prolapsed organs without the aid of prosthesis.

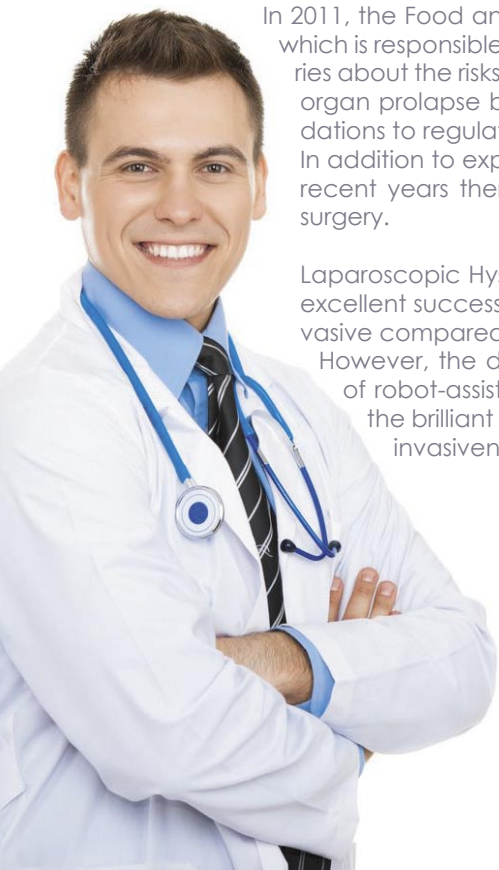
The surgical techniques involve the use of not absorbable or absorbable prosthetic networks introduced below the vaginal wall between the fascial system (or ligamentous lesioned) and viscera involved by prolapse.

In 2011, the Food and Drug Administration, the American agency which is responsible for drug safety, has expressed significant worries about the risks associated to the surgical treatment of pelvic organ prolapse by implants and has issued many recommendations to regulate the use of prosthetic material by vaginal.

In addition to expanding surgical techniques by vaginal, in the recent years there has been an evolution in the field of abs surgery.

Laparoscopic Hysterosacropexy in the past has demonstrated excellent success through a laparotomy proving to be non-invasive compared to the by vaginal techniques.

However, the diffusion of laparoscopic surgery and recently of robot-assisted laparoscopic surgery has led to combine the brilliant results of traditional surgical techniques to less invasiveness of the laparoscopic approach.



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