

Pregnancy and Urinary Disorders

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Introduction

In Italy, as elsewhere in the world, it is estimated that about 25% of the female population suffers from urinary incontinence and that, approximately, one third of this have a regular leakage of urine [1].

From the clinical point of view, Urinary Incontinence can be classified into:

- Urge incontinence
- Stress incontinence
- Mixed incontinence

All authors agree that urinary incontinence is still an important welfare problem.

Overactive bladder is a syndrome characterized by urinary frequency, nocturia, urgency with or without "urge incontinence". The basis of this phenomenon is an instability of the detrusor.

The definition of unstable a detrusor is the following: "which, during bladder filling, is contracted spontaneously or after provocative maneuvers".

This is the consequence of a defective cerebral control on voiding centers of the diencephalon and the sacral cord.

Stress urinary incontinence is defined as the involuntary loss of urine resulting from sudden increases in abdominal pressure.

The main risk factors are pregnancy, childbirth, menopause and general status of the lower urinary tract anatomy.

The etiologically most important factors

- Denervation of the pelvic floor, presumably related to the time of delivery; the damage seems to be related to the duration of the expulsive period (>40 minutes) and the birth weight (>3800 g).
- Quality of collagen: the patients with stress incontinence or genital prolapse seem to have a more fragile collagen than the asymptomatic ones.

It follows that the liability of stress incontinence by a lack of urethral support appears to be attributable to the collagen (particularly to the post-menopausal atrophy), while the urethra extrinsic and intrinsic muscle deficit is due to denervation of the pelvic floor [2].

That is why it is important to emphasize that urinary incontinence is present, although less frequently, even in nulliparas.

Conditions often associated with stress incontinence

- Cystocele, which appears when the bladder descends respect to its normal position.
- Rectocele, or herniation of the rectum to the vagina (often it is the result of obstetric trauma) [3].

As reported in literature, anatomical and functional consequences are linked with obstetric factors. Pregnancy may cause urinary incontinence and genital prolapse; besides, primiparous incontinent

women are characterized by a notably decreased closure pressure, shorter striated muscle length and shorter overall urethral length in the incontinent group [4].

Caesarean delivery is associated with a significant lower risk of urinary incontinence and pelvic defects. Caesarean section may protect from perineal risk of delivery but not from the damage due to the pregnancy itself. Forceps is found out the most dangerous instrument for pelvic floor, followed by vacuum and vaginal delivery with tears [5].

Case Report

Here is reported an emblematic clinical case of Stress Incontinence due to the previous deliveries.

A 59-year-old woman presented with the chief complaint of urinary incontinence.

The patient reported an initial but tolerable loss of urine 2 years before as a result of efforts or heavy coughing, but it didn't weaken significantly her quality of life.

From about 6 months she complains slight loss of urine at rest, which becomes even considerable following a simple laughing, sneezing or slight coughing. For this reason she consulted our urogynecological outpatient's clinic.

Anamnesis

Patient's history was characterized by 3 pregnancies. The first, at age of 24 years, had a physiological course and a spontaneous delivery at 39th gestational week (the infant weight was 3.100 g). The second pregnancy was at age of 27 years and it was characterized by gestational diabetes, treated with insulin; this delivery was spontaneous at 38th gestational week and the infant weight was 4.100 g. The last pregnancy was at age 32 and the delivery was characterized by fetal dystocia and it was necessary the use of vacuum. Patient's menopause occurred 10 years before.

Examination

Stress test was positive. The visit highlighted the presence of a second-degree cystocele and a slight uterine prolapse (Figure 1).

An urodynamic evaluation was made and the incontinence was classified in Stress UI type I, because maximum urethral pressure of closure was 48 cm H₂O.

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Figure 1: Second degree Cystocele.

Therapy

It was chosen the Perigee system, a minimally-invasive transobturator correction of cystocele, in spinal anesthesia.

The Perigee System consists of a central mesh made of large-pore monofilament polypropylene to which are connected four lateral arms, of the same material, which are attached to two sets of helical needles: two needles with a pink handle for the superior passage and two needles with a grey handle for the inferior passage.

The surgeon has to hold the superior needle exactly like the helical needle in the TOT out-in procedure, at approximately 45 degrees to the patient's midline. The inferior needle should be held parallel to the patient's midline, but may be angled ventrally to correct the passage. It is very important to remember that the surgeon must angle the inferior needle directly towards the ischial spine.

The tip of the needle should be turned towards the surgeon's finger, which should palpate the ischial spine. If this is not done correctly the curve of the needle will push the tip anteriorly towards the pubic bone. If the needle is in the correct plane, passage of the inferior needle is as easy and risk-free as passage of the superior needle.

Insertion of the four arms through the white line of the muscular fascia provides good lateral support without the need for lateral section of the tendinous arch. This system offers a faster, easier technique with limited intra-operative bleeding. It's important to remember that it is characterized by a deep and at the same time tension-free positioning of the mesh [6-9].

Results

There was no intra-operative bleeding or post-operative complications. The patients had to stay at hospital only 2 nights.

Control visit was planned for the following month after the TOT operation: the woman didn't complain of pain, dysuria, stress or urge incontinence.

After one year the effectiveness and functionality of Perigee system was the same of the previous controls.

Discussion

This case report is emblematic of the stress urinary incontinence etiopathogenesis.

To prevent pelvic floor disorders, therefore, is important to avoid all the risk factors of a traumatic delivery.

Besides, our clinical case highlights the effectiveness of TOT operative system in the treatment of cystocele.

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