

MALE PERINEAL SLING WITH AUTOLOGOUS APONEUROSIS AND BONE FIXATION – DESCRIPTION OF A TECHNICAL MODIFICATION

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ABSTRACT

Post-prostatectomy urinary incontinence is an uncommon complication of adenomectomies, occurring in approximately 1% of cases and being more frequent following radical prostatectomies. There is a significant implication in the quality of life for these patients. The surgical techniques employed for its treatment are the implantation of an artificial sphincter, peri-urethral injections and suburethral slings.

Considering the low efficacy of peri-urethral injections and the high cost of artificial sphincters, we present in this work a technical modification of the suburethral sling, whose preliminary results are satisfactory.

The fundamental modification in this technique is due to the replacement of the synthetic material usually employed for making the sling for autologous tissue, constituted by an aponeurotic strip taken from the rectus muscle of abdomen.

This modification aims to minimize risks of urethral erosion that, despite it was not described in this population due to the use of synthetic materials, is a possibility when facing the tension that is used over the bulbar urethra. In addition to such aspects the autologous aponeurosis does not have a cost except for a short prolongation of the surgical act.

Key words: urinary incontinence; male; perineum; urinary sphincter, artificial; transplantation, autologous

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INTRODUCTION

Post-prostatectomy urinary incontinence (PPUI) is an uncommon complication of adenomectomies, whether they are performed by transurethral or transvesical route. It is estimated that approximately 1% of patients who undergo these surgeries develop urinary incontinence.

After the advent of the routine use of PSA, however, the number of radical surgeries for treatment of prostate adenocarcinoma has significantly increased and brought along an equally important increase in the diagnoses of incontinence following radical prostatectomies. It is estimated that the in-

crease in the number of diagnosis of prostate cancer has been around 467% in the last 12 years, leading to a real increase of 404% in the number of prostate radical surgeries in the same period.

The actual incidence of PPUI is hard to assess, since the definition used for diagnosing incontinence varies substantially between authors and expressions such as “socially continent”, “minimal urinary leaks” contribute to make the objective interpretation of results expressed in the literature even more complicate. It is possible to find incidence reports from 2 to 87% when analyzing specific publications (1). Recently published, an analysis of PPUI indexes based on data from the North-American pub-

lic health system (Medicare), revealed that 50% of patients presented some degree of urinary incontinence. Among the incontinent patients 32% used penile clamps continuously and 6% required surgical treatment for the problem. A study on incidence conducted at a University Hospital revealed that 8.2% of patients who underwent radical prostatectomy (RP) evolved with PRPUI (2).

The surgical alternatives used in the treatment of PPUI include the use of peri-urethral injectables, artificial sphincter or suburethral slings.

Peri-urethral injections are technically simple and minimally invasive procedures, which can be performed at an outpatient setting. Among the substances most often employed, bovine collagen, autologous fat, texturized silicone and more recently pyrolytic carbon stand out. Despite the simplicity of these procedures, there are serious issues concerning the method's costs and efficacy. In our setting, injectables are marketed at high costs, making their routine use unfeasible, especially when one considers the frequent need of repeat injections for obtaining and maintaining the results. The analysis of results from peri-urethral injections, in turn, shows that the indexes of cure and significant improvement in urinary leaks lies around 30-60%, with a follow-up longer than 24 months, being variable according to the substance employed (3). The artificial sphincter is considered as the standard therapy for treating PPUI today. Introduced in 1973, by Scott and colleagues, the device underwent some modifications and technical refinements that made it highly reliable in terms of biocompatibility and function, as well as in terms of efficacy in controlling urinary incontinence. The currently available design, AMS 800, provides positive results in 60 to 95% of treated patients (4).

Even though the artificial sphincter is currently a routine and low-risk procedure, its use is not free from complications and technical problems. Among the possible complications, the most common are infection, urethral erosion and poor mechanical function. All of those complications require a mandatory surgical treatment and, in the case of infection, it involves the early removal of the sphincter and its connections. Urethral erosion is due to bulbar ischemia and forces the removal of the urethral cuff

until the wound is completely healed. Bulbar atrophy, which can occur as a result of chronic bulbar compression, manifests through recidivation or worsening of the urinary incontinence, and can be treated by replacing the cuff or placing a second cuff distal to the first one.

The cost of the AMS 800 sphincter, associated with the fact that the device is not available in the public health service prevents its application in the vast majority of potential candidates in our country.

Recently, Comiter (5) described the placement of a suburethral sling in men with PPUI using the perineal approach and the synthetic strip fixed by means of screws placed in the ischiopubic rami. The procedure, technically simple, and with low indexes of complications in the first series reported, showed quite satisfactory results in short and medium-term follow-up.

Even though there was no erosion in the first series of male slings that were presented, we know from previous experience with female population that the use of synthetic material under the urethra bears a risk of erosion of adjacent tissues. Such complication, quite frequent with the use of some substances that were employed in the past for treating female SUI, has turned the autologous fascia into the standard material for treatment of SUI in incontinent women.

The use of orthopedic anchors placed in the ischiopubic rami allows the proper fixation of the fascial flap to the bony tissue in a safe and technically simple way. The option for the use of anchors is based in the easy handling, low cost, safety and comfort since the suture thread is already present in the material. The cost of these anchors is less than 5% of the artificial sphincter's value, making the procedure widely advantageous even when using 4 units for proper fixation.

SURGICAL TECHNIQUE

The patient is placed in lithotomy position, under general or regional anesthesia; the lower abdomen, the genitals, perineum and the thighs are prepared.

Through a transverse incision in the lower abdomen, a strip is removed from the aponeurosis of the rectus muscle of abdomen, measuring approximately 6.0 x 2.0 cm. This graft is kept in warm saline solution with antibiotics (gentamicin 160 mg in 500 mL of saline) until the moment of its use.

A 5-cm longitudinal perineal incision is made (Figure-1), the bulbocavernosus muscle is identified and then incised. The ischiopubic ramus is dissected bilaterally and the periosteum is identified through a 3-cm incision over the ischiocavernosus muscle. Two

special ortopedic screws are placed (anchor FASTIN Mitekâ) in each ischiopubic ramus 2 cm apart. These screws have a polyester wire measuring approximately 25 cm in length, coupled to its plane surface (Figure-2).

Once the screws have been placed, the aponeurotic fascia (Figure-3) is fixed with wires to the bones, over the bulbo-urethral muscle, compressing it with a controlled pressure (Figure-4). The pressure with which the sling compresses the urethra is controlled using retrograde perfusion sphincterometry.

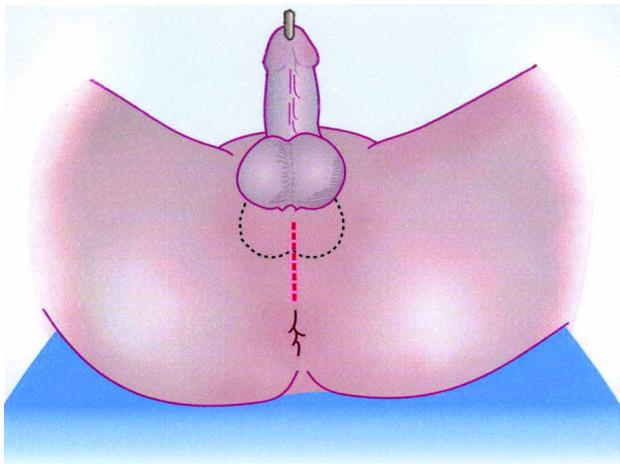


Figure 1 – Longitudinal perineal incision.

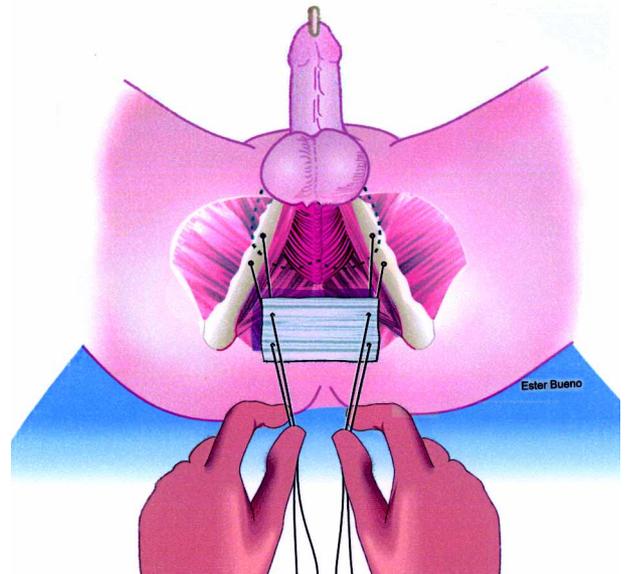


Figure 3 – Aponeurotic flap with wires passed in its angles.

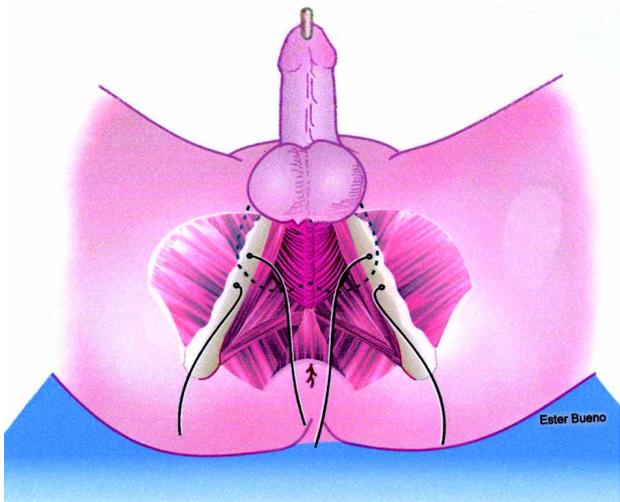


Figure 2 – Anchors applied to ischiopubic rami bilaterally.

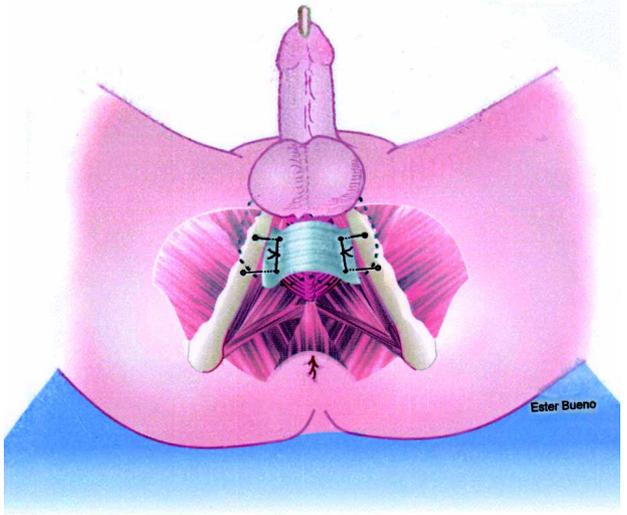


Figure 4 – Sling adjusted and placed above the bulbar urethra.

An 8F urethral catheter is inserted in the distal urethra, occluding the glans around the catheter so that there is no leakage of fluid. This catheter is connected to the liquid column placed 60 cm above the patient's pubic symphysis. When the fluid is open in order to run backwards through the urethra, the bulbo-urethral muscle is compressed with the sling until the dripping stops. In this way we impose a resistance of 60 cm of water to the passing of fluids through the urethra, a pressure that is similar to the one used in the artificial sphincter.

After fixing the sling, the surgical wound is copiously irrigated with antibiotic solution and the incision is drained and closed in 2 planes.

COMMENTS

The use of this procedure for correcting PPUI has shown to be an alternative to the employment of synthetic material, minimizing, like those slings used for correction of female UI, the risk of urethral erosion. It is a technical modification that is easy to re-

produce and has an acceptable cost when compared with the use of artificial sphincters.

REFERENCES

1. Rudy DC, Woodside JR, Crawford ED: Urodynamic evaluation of incontinence in patients undergoing modified Campbell radical retropubic prostatectomy: A prospective study. *J Urol.* 1984; 132: 708-11.
2. Goluboff ET, Said JA, Mazer S, Bagiella E, Heitjan DF, Benson MC, et al.: Urinary continence after radical prostatectomy: The Columbia experience. *J Urol.* 1998; 159: 1276-9.
3. Rios LAS, Panhoca R Borrelli IM: Injectables in the Treatment of Urinary Incontinence. In: Rubinstein I (ed.), *Brazilian Clinics of Urology.* 2001; vol 1: 265-74 [in Portuguese].
4. Gundian JC, Barret DM, Parulkar BG: Mayo Clinic experience with use of the AMS 800 artificial urinary sphincter for urinary incontinence following radical prostatectomy. *J Urol.* 1989; 142: 1459-967.
5. Comiter C V: The male sling for stress urinary incontinence: A prospective study. *J Urol.* 2002; 167: 597-601.

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