Evaluation of development of urinary incontinence following repair of anterior vaginal wall prolapse using urodynamics studies

Thesis

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by

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﴿ قالوا سبحانك لا علم لنا الا ما علمتنا

إنك انت العليم الحكيم ﴾

صدق الله العظيم

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Abstract

Objectives:
Detection of newly developed stress urinary incontinence and detrusor instability following repair of anterior vaginal wall prolapsed by anterior colporrhaphy.

Patients and methods: 20 patients were recruited from the Obstetrics and Gynecology department, Kasr Al-ainy Hospital, Faculty of Medicine, Cairo University. All patients were indicated for repair of anterior vaginal prolapse by anterior colporrhaphy .Evaluation of the stage of prolapse according to pelvic organ prolapse quantification system (P.O.P.Q.), filling cystometry and complete urine analysis. This was done preoperative , one week and one month postoperative.

Results: Filling cystometry done one week postoperative revealed that all patients were free of detrusor instability and stress incontinence. Filling cystometry done one month postoperative detected two cases (10%) with detrusor instability and only one case (5 %) with de novo stress urinary incontinence.

Conclusion: There is a low risk of *de novo* SUI after anterior colporrhaphy that doesn't justify performing prophylactic anti-incontinence procedure. Despite that low risk, patients should always be counseled before surgery about the potential risk of development of *de novo* SUI .Also we can conclude that anterior colporrhaphy doesn't predispose the patient for the development of detrusor instability or urge incontinence even if the patient suffered from detrusor instability preoperatively.

Key words: incontinence, prolapse, anterior colporrhaphy, cystometry.

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Introduction

Urinary incontinence is considered a distressing problem that has a significant impact on the quality of life of patients presenting with pelvic organ prolapse (POP).One of the main purposes of clinical and urodynamic assessment before surgeries done for repair of POP is to identify women who need concomitant anti-incontinence procedure .

Development of de novo stress urinary incontinence (SUI) following anterior colporrhaphy has been reported as a possible complication . Thus, in some cases, surgeons may prefer to do a prophylactic anti-incontinence procedure during repair of anterior vaginal wall prolapse. However, performing prophylactic surgery for SUI is still controversial.

So, in our study we report the incidence of development of SUI following anterior colporrhaphy as well as the development of detrusor instability during the first one month postoperative . We used filling cystometry as an objective method for diagnosis .

Aim of the work

Detection of newly developed stress urinary incontinence following repair of anterior vaginal wall prolapse by anterior colporrhaphy without performing anti-incontinence procedures.

Detection of newly developed urge urinary incontinence due to detrusor instability following anterior colporrhaphy.

Pelvic organ prolapse

Definition:

Pelvic organ prolapse is the abnormal descent or herniation of the pelvic organs from their normal attachment sites or their normal position in the pelvis. The pelvic structures that may be involved include the uterus (uterine prolapse) or vaginal apex (apical vaginal prolapse), anterior vagina (cystocele), or posterior vagina (rectocele). Many parous women may have some degree of prolapse when examined; however, most prolapses are not clinically bothersome without specific pelvic symptoms, and they may not require an intervention(**Brown et al. ,1997).**

Incidence

Pelvic organ prolapse (POP), including cystocele, is a major health concern, especially in the elderly. In the United States, more than 200,000 operations are performed annually for POP; reoperation rates reach 30%. Anterior vaginal wall prolapse (AWP) is the most common form of female POP, with 81% of prolapse repairs including the anterior vaginal wall. Furthermore, AWP carries the highest risk for

recurrence, with reported recurrence rates as high as 41% **(Olsen et al. ,1997).**

Etiology:

Pelvic floor defects may be created as a result of childbirth and are caused by the stretching and tearing of the endopelvic fascia and the levator muscles and perineal body. Pregnancy itself, without vaginal birth has been sited as a risk factor as well. A study by Hendrix et al suggests that vaginal birth and operative vaginal birth increase an individual's risk for urinary incontinence and pelvic organ prolapse 5-10 years after delivery when compared with cesarean delivery without labor (**Hendrix et al. ,2002).**

Partial pudendal and perineal neuropathies associated with labor impair nerve transmission to the muscles of the pelvic floor so decrease the muscle tone, leading to further sagging and stretching. Therefore, multiparous women are at particular risk for pelvic organ prolapse.

Genital atrophy and hypoestrogenism also play important contributory roles in the pathogenesis of prolapse. However, the exact mechanisms are not completely understood. Prolapse may potentially

result from pelvic tumors, sacral nerve disorders and diabetic neuropathy**(Blaivas ,1999).**

Other medical conditions that may result in prolapse are those associated with increases in intra-abdominal pressure (eg, obesity, chronic pulmonary disease, smoking and constipation). Certain rare abnormalities in connective tissue (collagen), such as Marfan disease, have also been linked to genitourinary prolapse (**Blaivas ,2000).**

Symptoms:

A patient with cystocele may be asymptomatic, especially in the early stages. Symptomatic patients may experience fullness or pressure in the pelvis or vagina, a "ball" or "lump" protruding from the vagina, lower back pain or pressure, problems with bladder emptying or bowel movements, dyspareunia, or vaginal bleeding. Urinary symptoms associated with cystocele include urinary frequency and urgency (35%), urge urinary incontinence (15%), stress urinary incontinence (60%) and difficulty voiding (23%). Urodynamically diagnosed bladder outlet obstruction was found more frequently with higher-stage cystoceles than with lower-stage cystoceles (**Hendrix et al. ,2002).**

Patients with advanced POP, diagnosis of occult stress urinary incontinence is critical. This can be accomplished by means of urodynamic studies, with and without prolapse reduction. The positive cough (Valsalva) stress test after prolapse reduction during urodynamic studies indicates that an anti-incontinence procedure at the time of prolapse repair is necessary. Several authors have questioned whether urodynamic evaluation is predictive with regards to outcomes compared to less invasive office evaluations such as cough stress testing(**Ghoniem and Walters ,1994).**

Voiding difficulties and urinary frequency, urgency, or incontinence are common symptoms associated with pelvic organ prolapse. If present, these symptoms should be investigated because advanced prolapse may contribute to lower urinary tract dysfunction, including hydronephrosis and obstructive nephropathy(**Robinson and Cardozo , 2003).**

Evaluation:

A thorough preoperative assessment can prevent many postoperative complications. Some authors have reported on a series of patients with significant anterior vaginal wall prolapse who

exhibited urinary retention. Each patient underwent preoperative prolapse reduction testing using a pessary. This test was found to have high sensitivity, specificity and positive predictive value for the postoperative cure of urinary retention following reconstructive pelvic surgery **(Pakbaz and Mogren , 1989).**

Medical history (as obesity, asthma and long-term steroid use) that may have contributed to prolapse or urinary incontinence must be corrected before any surgical treatment . Recurrences may be more likely if such conditions are not addressed.

A site-specific physical evaluation is essential. Methods for noting pelvic floor relaxation include (1) the Baden halfway system, (2) the International Continence Society (ICS) classification using the Pelvic Organ Prolapse Quantification (POPQ) system and (3) the revised New York Classification (NYC) system(**Simon and Debodinance , 2011).**

Most clinicians routinely use the ICS classification (POP-Q) system, which is classified as follows:

- Stage 0 - No prolapse
- Stage I - Descent of the most distal portion of prolapse is more than 1 cm above the level of the hymen.