Benha Journal of Applied Sciences (BJAS) **print: ISSN 2356–9751**
Vol.(6) Issue(3) Part (2) (2021), (289-293) **online: ISSN 2356–976x**
http://bjas.journals.ekb.eg

Autolougus rectus sheeth graft vs four armed synthetic mesh in management of cyctocele with stress urinary incontinence and its effect on sexual function in sexually active females

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Abstract

The most prevalent chronic illnesses in women are pelvic organ prolapse and urine incontinence. These are prevalent problems that are uncertain about pathophysiology. With the increasing life expectancy, considerably more women today have a pelvic organ prolapse and urine incontinence, which requires surgery. The chance of prolapse or a continent operation is now one in 11 for every lifetime and up to 30 percent of patients will need repeated reconstructive surgery and 10 percent repeated incontinence surgery. A variety of synthetic and biological prosthetics were created to better the surgical results and to retain the vaginal capacity and coital function. This investigation was carried out in 80 women with stress incontinence and cystocele. The primary results of the research showed that: The mean age of the patients investigated was 42.2, mean BMI 28 kg/m2. Middle parity was two children, median NVD was two ranged from 1 to 5, median CS was one, premenopausal was 0 to 2, 58.8 per cent and postmenopausal were 41.3 per cent. All patients were tested for positive cough. The median POP-Q of 2,5, median ICIQ of 15, median FSFI of 10,3, mean Q-max of 19,8, and mean PVRU of 20. The average age of group I was 42.3 years, whereas group II was 42.1 years, with no significant difference. Furthermore, no significant variations in BMI, vaginal delivery, CS, menopause were detected between groups I and II. All patients were tested for positive cough.

Keywords: Stress, Sexually, Active, Cyctocele**.**

1.Introduction

There are numerous forms of urine incontinence: stress, urge, chronic urine (overflow) retention, mixed and other. An accurate assessment is vital if suitable treatment choices are to be determined. The evaluation should generally comprise history, urinalysis, a physical examination, stress incontinence demonstration, an evaluation of urethral mobility and a post-evasive residual (PVR) volume measurement[1].

It is vital to differentiate between difficult and simple stress urinary incontinence (SUI). SUI is defined as the leakage of Valsalva or physical exercise without urgent symptoms and is typically linked to lack of infection and voiding symptoms. Complicated SUIs may involve urgency, retention and voiding symptoms, as well as stress incontinence, and individuals may have coordonned disorders affecting continence. Many patients will also have previous anti-incontinence operations[2].

A comprehensive history covers precipitation, frequency, intensity, usage of pads and impacts on everyday life. Additional inquiries may also be put about the existence and frequency of nighttime, urgency, hesitation, sluggish flow, sense of incomplete emptying and dysuria. Many validated questionnaires are available to help complete the history; voiding journals may also be employed. Medication history should be provided (assessment of medicinal products and of agents that may influence the function of the bladder), medical history (assessment of illnesses such as diabetes and neurological problems), gynaecology, prior surgical and obstetrical history[3].

Stress urine incontinence should be objectively verified before surgery is undertaken. Visualizing cough leakage is diagnostic (with a full bladder or at least 300 ml of fluid and the patient standing if needed). Delay in leaking might nevertheless be attributed to over-activity of the cough-induced detrusor. Multichannel testing is suggested if there is a delay or if leakage does not occur. [4]

Surgical results in individuals with urethral mobility are more successful. The cotton swab test is positive when there is a 30 degree or more horizontal displacement while the patient is in and tense with the supine lithotomy[5].

A remaining post void volume of less than 150 ml may assist to prevent an abnormal bladder vacuum or prolonged urine retention (overflow incontinence). Multichannel testing may be necessary for an abnormal volume. Simple catheter and syringe office cystometry may help to determine a residual, fundamental bladder capacity after the void and ensure that at least 300 ml are available for Valsalva leakage testing. Multichannel urodynamic testing with simple SUI is not required before surgery. Multichannel urodynamic testing is often needed in mixed or difficult SUI situations. The aim of a multi-channel examination is to monitor the function and malfunction of the bladder objectively to decide the right therapy. Multichannel assessment may monitor intra-abdominal and intravenous pressure changes as well as evaluate detrusive activity. Uroflowmetry may be done to evaluate the rate, pattern, and capacity of voiding. Cystometry filling (cystometrogram[CMG]) monitors blood pressure and volume during filling, sensational storage and compliance. Valsalva leak point pressure (VLPP) and the urethra pressure profile examine the competence of the urethra (UPP). Electromyography may be used to verify normal bladder-pelvic muscle coordination[6].

The objective of this study is to compare the results of treating women who complain of stress urine incontinence.

2. Patients and methods

This investigation was carried out in 80 women with stress incontinence and cystocele. Randomly, patients were randomised into two groups, group I patients with autologus rectus sheath graft surgery and group II patients with four arm mesh surgery.

The process ensures the patient has an empty bladder and an empty rectum if possible. A full bladder might underestimate the POP-Q score during this assessment and hence miscalculate the stage.

The patient is then placed where the prolapse's maximum magnitude is shown and the patient may confirm it. Supine, standing or a birth chair with a 45 degree tilt might be included.

If necessary, a Sim speculum may be used to pull back the front and rear vaginal walls during the test. All procedures and positions used throughout the test should be recorded in order to recreate them.

There are six different measuring parameters (Aa, Ba, C, D, Ap, Bp) and the three anatomical markers (GH, PB, TVL):

Point Aa is in the centre of the vaginal anterior wall. This site is 3cm from the hymen without a prolapse (merely interior to the vaginal opening). The hymen might have -3cm parameters suggesting no previous vaginal prolapse or +3cm suggesting a complete prolapse.

Point Ba refers to the top position of the vaginal front wall. In a woman without anterior prolapse, this place coexists with Aa (-3cm). However, this position coexists with C in a lady with complete prolapse.

Point C is the lowest cervix or vaginal mango edge (i.e. hysterectomy scar). This site determines whether the cervix descends.

Point D is the highest point of the vaginal rear wall. This site may be compared to point C to evaluate the extension of the entrance to the cervix.

Point Ap is placed 3cm proximal to hymen on the midline of the back of the vaginal wall. For this point, characteristics might vary from -3cm to +3cm with regard to hymen.

Point Bp is the top of the vaginal rear wall.

GH is the 'genital hiatus' which records the length between the urethra and the vaginal opening/hymen. The hiatus refers to a levator ani muscle group opening in puborectalis muscle. A wider gap in this region may imply laxity.

PB is the 'perineal body' and it is recorded from the back of the hymen to the orifice in the mid-anal. This gives an insight into the tonicity of the pelvic floor. The perineal body may be injured by tears or an episiotomy via vaginal delivery.

TVL refers to 'the total vaginal length' from the distal end to the hymen. Knowing this, the depth of the prolapse may be measured and after surgical correction reviewed.

2.1. Recording Measurements

- The position of the six distinct locations is measured during a maximum Valsalva or cough with regard to the hymen (that is defined as 0cm).
- The only exception to this is the measurement of TVL, which is to be recorded at rest when the prolapse is decreased.
- If a point drops to the hymen it measured as 0cm, if it stays higher than the hymen it is recorded as a negative and if it protrudes past the hymen it is recorded as a positive. All measurements are recorded in centimeters using a ruler or tape measure.
- All measurements for each location are recorded on a grid as shown below:

2.2. Staging of Prolapse

Once all measurements have been made the stage of the prolapse can be identified in relation to hymen;

Stage 0: No prolapse is observed (points Aa, Ba, C, D, Ap and Bp are all < / = -3cm).

Stage 1: The most proximal portion of prolapse is greater than 1 cm above the level of the hymen (points Aa, Ba, C, D, Ap and Bp are all < -1cm).

Stage 2: The most proximal portion of prolapse is found between 1 cm higher than hymen and 1cm beneath hymen (points Aa, Ba, C, D, Ap and Bp can set at -1cm and +1cm).

Stage 3: The most distal part of the prolapse extends more than 1cm beneath the hymen but no further than 2 cm, resulting in no measurement larger than TVL (points Aa, Ba, C, D, Ap and Bp can be >/= +2cm and </= TVL -3cm).

Stage 4: vaginal eversion has taken place or eversion to with 2cm of TVL (points Aa, Ba, C, D, Ap and Bp can be >/= to TVL -2cm).

2.3. Statistical analysis

The collected data was revised, coded, tabulated and introduced to a PC using Statistical package for Social Science (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.). Data were presented and suitable analysis was done according to the type of data obtained for each parameter. Shapiro-Wilk test was done to test the normality of data distribution. Significant data was considered to be nonparametric. Descriptive statistics: Mean, Standard deviation (± SD) for parametric numerical data, while Median and range for non-parametric numerical data. Frequency and percentage of non-numerical data. Analytical statistics: Student T Test was used to assess the statistical significance of the difference between two study group means. Chi-Square test was used to examine the relationship between two qualitative variable

3.Results

Mean age of studied cases was 42.2 years, mean BMI was 28 kg/m2. Median parity was 2 children, median NVD was 2 ranged from 1 to 5, median CS was 1, ranged from 0 to 2, 58.8% were premenopausal,

41.3% were post-menopausal. All studied cases had positive cough test. Median POP-Q was 2.5, median ICIQ was 15, mean FSFI was 10.3, mean Q-max was 19.8 and mean PVRU was 20. POP-Q was assessed, no significant differences were found between bot groups before or after treatment (p1>0.05 for both). POP-Q decreased significantly after treatment in group I and group II (p2<0.001 for both). No significant difference between those treated with autologous rectus sheath graft and those treated with four arm mesh across time (p3>0.05), even after adjusting for age, BMI, parity, mode of delivery, frequency of NVD, CS and menopausal status (p4>0.05). Figure 1

ICIQ-SF was assessed, no significant differences were found between both groups before or after treatment (p1>0.05 for both).ICIQ-SF decreased significantly after treatment in group I and group II (p2<0.001 for both). Both groups sowed no significant differences in ICIQ-SF improvement across time (p3>0.05), even after adjusting for age, BMI, parity, mode of delivery, frequency of NVD, CS and menopausal status (p4>0.05).

Group II was associated with significantly higher frequency of erosion (p=0.023), non significantly difference in hemoglobin drop, bladder injury, retention, vaginal infection. On the other hand, group I was associated with significantly higher frequency of abdominal scar formation, dehiscence, higher median VAS (p=0.038, 0.040, 0.034 respectively).VAS score was used for postoperative pain assessment. Both groups improved after 2 weeks with non steroidal anti inflammatory drugs, figure 3

POP-Q improvement showed significant positive correlation with age, BMI, parity, frequency of NVD, preoperative POP Q, ICIQ. ICIQ-SF improvement showed significant positive correlation with preoperative POP Q, ICIQ. FSFI improvement showed significant positive correlation with preoperative FSFI. PVRU improvement showed significant positive correlation with BMI. Otherwise, no significant correlations were found between improvement of POP-Q, ICIQ, FSFI, Q-max and PVRU with preoperative parameters, table 1

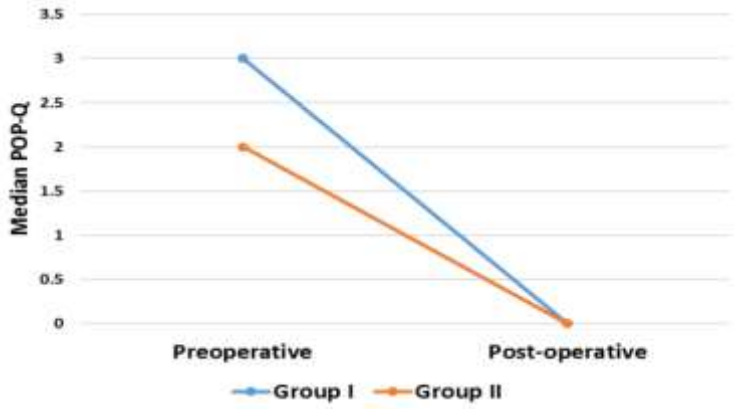

Fig. (1) POP-Q in group I and II pre and post-operative.

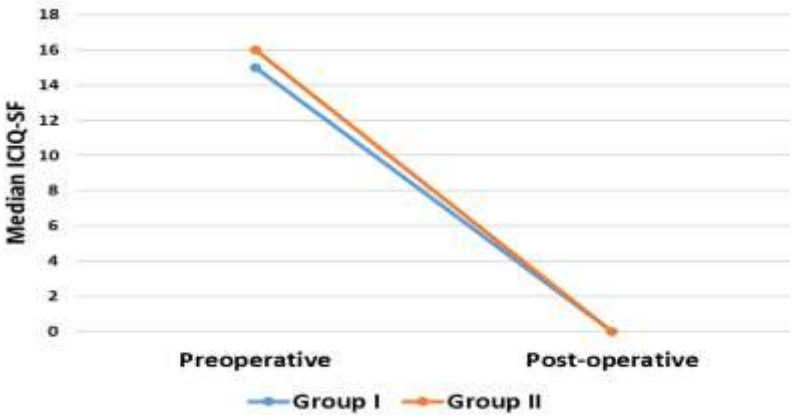

Fig. (2) ICIQ-SF in group I and II pre and post-operative.

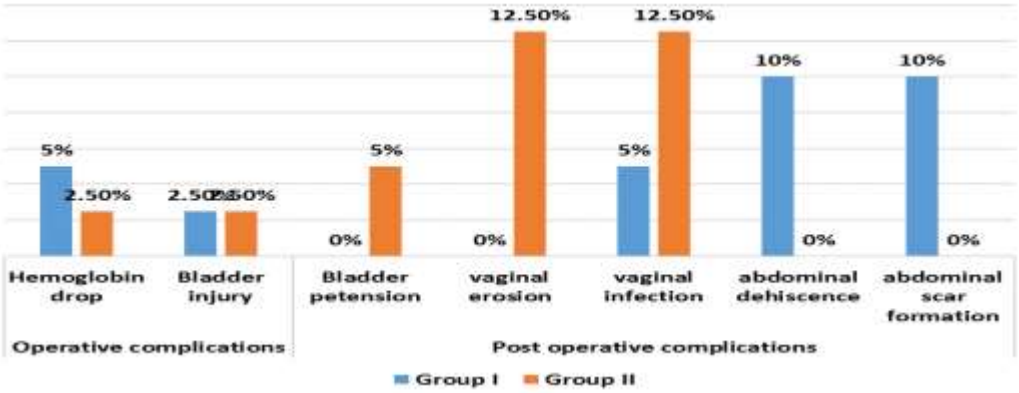

Fig. (3) Complications in studied groups.

Table (1) Correlation of improvement of POP-Q, ICIQ, FSFI, Q-max and PVRU with preoperative parameters.

		POP-Q improvement	ICIQ-SF improvement	FSFI improvement	Q-max improvement	PVRU improvement
Age	**rs**	0.336	0.179	-0.119	0.018	0.143
	p	0.003	0.112	0.294	0.878	0.208
BMI	**rs**	0.243	0.115	0.145	-0.043	0.319
	p	0.032	0.311	0.203	0.709	0.004
Parity	**rs**	0.295	0.101	0.018	-0.132	0.139
	p	0.009	0.372	0.875	0.247	0.222
NVD	**rs**	0.257	0.087	0.030	-0.023	0.152
frequency	**p**	0.023	0.441	0.791	0.842	0.181
CS	**rs**	0.116	-0.016	0.005	-0.165	-0.047
frequency	**p**	0.313	0.886	0.962	0.147	0.682
Preoperative	**rs**	0.547	0.394	-0.127	-0.058	0.066
POP-Q	**p**	<0.001	<0.001	0.264	0.612	0.564
Preoperative	**rs**	0.280	0.277	-0.079	-0.014	-0.092
ICIQ-SF	**p**	0.013	0.013	0.487	0.900	0.422
Preoperative	**rs**	0.050	0.150	-0.731	0.026	-0.044
FSFI	**p**	0.664	0.184	<0.001	0.822	0.699
Preoperative	**rs**	-0.014	-0.213	0.128	-0.151	-0.045
Q-max	**p**	0.905	0.058	0.259	0.185	0.693
Preoperative	**rs**	0.046	0.033	0.042	0.065	0.205
PVRU	**p**	0.687	0.768	0.715	0.571	0.070

rs, Spearman's correlation coefficient.

4. Discussion

A prevalent ailment for women is pelvic organ prolapse (POP). It affects 30% to 50% of parous women, whereas stress urine incontinence may also occur in certain women[7].

Cystocele (AVWP) is the most prevalent kind of POP in women because to bladder herniation in the anterior vaginal wall. Cystocele is the most prevalent kind of POP in women. It may be lateral or central to the bladder or vagina because to lack of support, or weakening of the pubocervical facia[8].

Female stress urinary incontinence (SUI) is a major health issue, a frequent disease in adult women with prevalence rates ranging from 12.8 to 46 percent. Midurethral Slings (MUS), implanting transvaginal or transobturator tape composed of polypropylene[9] are popular procedures for repairing stress urinary incontinence.

Most likely, POP and SUI are concomitant conditions. A subject of dispute was the repair of the two problems in the same procedure. When the two surgeries are carried out in the same session, following cystocele correction, the midurethral sling is placed.

Anterior colporrhaphy (AC), which may be performed either alone or with sling operations, is one of the most common processes of AVWP treatment. Traditional procedures for repairing native tissue anterior wall prolapse have a high probability of recurrence. Furthermore, transabdominal or laparoscopic paravaginal repair did not provide different outcomes than previous surgery [10].

There has been a large utilisation of a synthetic mesh and its effectiveness in managing SUI and POP because to high recurrence rates and the lack of local tissue. Many surgeries employed polypropylene mesh in a significant number of patients with great success rates

of SUI and POP. A four-arm mesh is intended to fasten the mesh to the pelvic side wall at four spots via four anatomic ways that are significantly simpler and safer. Double four-arms transobturator polypropylene mesh was added next to the previous compartment repair for SUI management. Complications of mesh installation or of needle entry route such as visceral or vascular damage, pelvic discomfort or mesh extrusion have also been reported[11].

In the United States, about three hundred thousand POP operations are done each year with earlier colporrhaphy the most prevalent cystocele / earlier prolapse repair procedure. But after this surgery, failure rates from 40 to 60 percent have been seen because they employ weaker tissue and exclusively treat midline abnormalities without apical support [12].

In order to prevent any failure connected to the use of poor synthetic tissue grafts, an AMSC method has gained favour. AMSC gives the greatest rates of cure for apical/vaginal vault prolapse, but this advantage must be offset against a lengthy operational time, a lengthy period of return to daily activities and a risk of de novo SUI about 20 percent [10].

After the success of AMSC for apical prolapse correction, TMS for cystocele repair has been increasingly done. Compared to previous colporrhaphy, TMS has a greater speed of effective treatment, but also a greater risk of operating issues and adverse events, largely caused by mesh exposure. In fact, the FDA (Food and Drug Administration) published 2 Public Health Notices in 2008 and 2011 on significant TMS-related problems. The current update noted that operating meshes are a cause for worry, given their use for transvaginal POP repair does not have major complications[13].

5. Conclusion

The Graft showed that the combined dependent variables (POPQ, ICIQ, Q max, PVRU and FSFI) were strongly associated with variabilities; whereas the BMI, NVD and CS frequencies were more moderate in connection with the combined dependent variables, but still had significant relationships. However, the status of age and menopause revealed no substantial relation to the change in dependent variables. Based on our results, we refer our conclusion to additional investigations on bigger samples and on a widespread geographical scale.

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