Compartive Study Between Burch Colposuspension & Transobturator Tape In The Treatment Of Stress Urinary Incontinence

Thesis
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INTRODUCTION

Urinary incontinence is a common problem through the world , although it is not life threating, it is very disturbing to the lives of the individuals and can have devasting effects, both socially and psychologically. In the UK.Alone,it has been estimated that there are more than 3.5 million sufferers**.(AMY R ,et al 2008)**

Urinary incontinence affects an estimated15to35%of women **(Wenyan W, et al 2009)**

In 1995,the annual direct cost of incontinence was over $16 billion.in USA**.(AMY R ,et al 2008)**

Approximately 25% of premenopausal women and 40% of postmenopausal women report leakage of urine. The peak incidence of stress incontinence occurs between 45 and 49 years of age. **(Michael E, et al.,2007)**

Stress incontinence is one of the most common types of urinary incontinces,it is defined as involuntary urinary leakage on exertion,sneezing,or coughing-occurs when bladder pressure exceeds urethral resistance under condition of increased abdominal pressure. **(International Continence Society,2002)**

Symptoms of stress incontinence develop in up to one third of women during pregnancy, although incontinence frequently resolves after delivery. In one report of women with persistent stress incontinence 3 months postpartum,92%continued to have stress incontinence at 5 years post partum. **(Viktrup L, et al.,2001)**

Stress urinary incontinence is a common condition affects the social, psychological, occupational and sexual lives of women.**(Domingo S, et al.,2007)**

Many women with incontinence report loss of urine during vaginal intercourse, which cause embarrassment and relationship problems. **(Barber et al.2005)**

Recognized risk factor for stress incontinence include white race, obesity, pregnancy, childbirth, particularly vaginal birth. **(Keilman E, et al., 2005)**

Assessing the degree to which the patient is bothered by the symptoms of stress incontinence can guide whether to initiate treatment. **(Fitzgerald MP, et al .,2002)**

Although the initial treatment of stress incontinence is often non surgical (behavioral therapy, pelvic floor excercises,or incontinence devices),surgical treatment is considered for patients who are bothered by persistent symptoms. An estimated 4 to 10% of women in the united states undergo surgery intended to restore continence, and this rate increased steadily during the past 20 years. **(Thom DH, et al .,2005)**

The world medical literature produce more than one article per week on stress, and probably more than 200 operations have been suggested as a surgical cure for this condition. This should alert the surgeons that the ideal operation has yet to be advised. The surgical alternatives in women may include colposuspension, tension-free vaginal tape(TVT), traditional sub urethral sling, and injectable agents of these four types of operations colposuspension and TVT are currently the most common. **(Michael E, et al.,2007)**

The Burch colposuspension has been considered the gold standard for treatment of stress incontinence by most of the urogynecologists and there for it is the operation to which all other operations for incontinence are compared in terms of efficacy, technical difficulty, and safety. **(Albo ME et al,.2007)**

Trans obturator tape (TOT**)** was first introduced in 2001 by Delorme with aim to avoid bladder, bowel, and major vascular injuries which had been reported by other operations.**(Domingo S, et al.,2007)**

Aim of the work

The aim of this study is to compare between Burch colposuspension and trans obturator tape (TOT) in the treatment of stress incontince as regard efficacy and rate of complications.

Patients and methods

This study will be carried out on sixty patients ,attending to the out patient clinic of gynecology in Ain Shams University Maternity Hospital, complaining of genuine stress incontinence .

Inclusion Criteria:

A.Patients with genuine stress incontinence

B Patients treated surgically for the first time for stress incontinence.

C.Patients who failed to respond to conservative management as physiotherapy or drugs

Exclusion Criteria:

A.Over flow incontinence as diabetic neuropathy , hypothyroidism

B.Neurological lesion as spina bifida.

C.Over active bladder as interstitial cystitis.

D.Tarnsient causes of incontinence as.urinary tract infection.

E.Pure urge incontinence.

F.Patients with pervious surgery for the correction of urinary incontinence.

The 60 pateints included in the study will be divided into two groups:

A) 30 patients who already performed Burch colposuspension for treatment of genuine stress urinary incontinence in the past year. Continued to follow up for at lest 6 months post operative.

B) 30 patients complaining of genuine stress urinary incontinence who are similar in demographic criteria and disease history to those in group A. These patients will under go transobturator tape operation.

Clinical Evalution:

All the patients will subjected to:

1-Complete history taking, physical examination, stress test, urine analysis, preoperative urodynamic investigation including :cystometry, urethral pressure profilometry, urethrocystometry.

2-Preoperative preparations as: Liver and kidney functions, ECG for patients above 40 years.

3-An explanation of the study and a written informed consent will be obtained from all patients included in the study.

4-All patients will receive intravenous prophylactic antibiotic therapy.

Postoperative Care :

After the end of the operation the patients will be transferred to the ward with catheter for 6 hours until the patients recovered from the anesthesia.1 gram of 1st generation cephalosporin is given intravenously 12 hours post operatively.

Outcome measures:

After 1 month a follow –up visit will be done: Clinical assessment, urodynamic studies, urine analysis and urine culture. This assessment will be repeated again after 6 months.

Results:

Discussion:

Conclusion & Recommendations:

Referances

Albo ME et al: Burch colposuspension versus fascial sling to reduce urinary stress incontinence. N Engl J Med 2007; 24; 356:2143-55.

AMY R. KANE, MD and CHARLES W. NAGER, MDw :
Midurethral Slings forStress Urinary Incontinence. CLINICAL OBSTETRICS AND GYNECOLOGYVolume 51, Number 1, 124–135
2008, Lippincott Williams & Wilkins

Barber MD, Dowsett SA, Mullen KJ, Viktrup L: The impact of stress urinary incontinence on sexual activity in women. Cleve Clin J Med 2005;72:225-232.

Domingo S, Alam P, Ruiz N & G. Lزaro: Transobturator tapprocedure outcome: a clinical and quality of life analysis of a 1-year follow-up. Int Uroe gynecol J 2007; 18: 895– 900.

Fitzgerald MP, Stablein U, Brubaker L: Urinary habits among asymptomatic women. Am J Obstet Gynecol 2002;187:1384-1388.

International Continence Society: Analysis of the standardisation of terminology of lower urinary tract dysfunction: report from the Standardisation Sub-Committee of the International Continence Society. Neurourol Urodynam 2002; 21: 167-78.

Keilman LJ: Urinary incontinence: basic evaluation and management in the primary care office. Prim Care 2005; 32: 699-722.

Michael E, Holly E, Linda B, Norton p, Stephen R: Burch Colposuspension versus Fascial Sling to Reduce Urinary Stress Incontinence. N Engl J Med 2007; 356 (21):2143-2155.

Thom DH, Nygaard IE, Calhoun EA: Urologic Diseases in America Project: urinary incontinence in women -- national trends in hospitalizations, office visits, treatment and economic impact. J Urol 2005; 173:1295-301.

Viktrup L, Lose G: The risk of stress incontinence 5 years after first delivery. Am J Obstet Gynecol 2001;185:82-87.

Wenyan Wang,Lan Zhu,Jinghe Lang: Transobturator tape procedure versus tension free vaginal tape for tretment of stress urinary incontinence.International Journal of Gynecology and Obestetrics 104 2009; 113_116

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