Treatment of stress incontinence by trans-obturator tension: A retrospective study, Aden, Yemen

Ali Ahmed Salem Hatroom[1], Ahmed Mohammed Abdullah Alwashali [2]

(1) Associate Professor of Urology, Department of Special Surgery, Faculty of Medicine, University of Aden, Yemen
(2) Assistant Professor of Urology, Department of General Surgery, Faculty of Medicine, University of Thamar, Yemen

Corresponding author:
Dr. Ali Ahmed Salem Hatroom: Associate Professor of Urology,
Department of Special Surgery,
Faculty of Medicine, University of Aden, Yemen
Email: hatroom.cl@gmail.com

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Abstract

Background: Stress urinary incontinence is the complaint of involuntary leakage on effort or exertion or on sneezing or coughing.

Objectives: To evaluate the effectiveness of transobturator approach in the treatment of female stress urinary incontinence and to analyze functional results.

Materials and methods: We retrospectively reviewed all medical files of patients presenting with urinary incontinence to our Urology Center in Aden, Yemen, over a 2-year period. There were 42 patients treated with TOT and the postoperative follow up of the patients was at least 10 months. The collected data were tabulated and statistical analysis was done by estimating rates, means and standard deviations.

Results: The age of the patients ranged between 40 to 80 years and their mean age was 62.1 ± 9.7 years. We grouped the study patients in two age groups, ≤ 60 years and > 60 years.

We found the patients of the age group > 60 years were (57.1%) while the patients of the age group ≤ 60 years were (42.9%).

The mean weight of the patients is 67.5 ± 7.0 kilograms (kg).

We categorized the number of vaginal deliveries in 2 groups: 5 – 7 vaginal deliveries were (31.0%), and 8 – 10 vaginal deliveries (69.0%). The Mean number of vaginal delivery was 8.0 ± 1.2.

Concomitant operations were posterior colpotomy (7.0%) and anterior colpotomy (4.8%). The Mean operative time was 48 ± 8.9 minutes.

Four cases developed complications, (4.8%) major bleeding; (2.4%) of them had bladder injury and (2.4%) urine retention. Additionally, (93.0%) of the outcome of operated women were with excellent success while those with failed results were (7.0%).

Conclusion: The transobturator approach is an effective treatment of stress urinary incontinence with low morbidity and with acceptable success and outcome.

Keywords: Stress urinary incontinence, transobturator approach, Aden, Yemen

Introduction

Urinary incontinence is a common, distressing condition which affects women of all ages and can have a profound impact on quality of life. Women often have symptoms for a considerable amount of time before seeking a medical opinion. Stress urinary incontinence (SUI) is the complaint of involuntary leakage on effort or exertion or on sneezing or coughing, usually caused by weak or damaged muscles in the pelvic floor or sphincter [1].

SUI has a significant impact on the quality of life for many women, although estimates of prevalence vary widely due to inconsistencies in the definitions of SUI and differences in populations studied [2].

The most common types of UI in women are stress urinary incontinence and urge urinary incontinence. Women with both problems have mixed urinary incontinence. Stress urinary incontinence was defined by the International Uro-gynecological Association and International Continence Society as “complaint of involuntary loss of urine on effort or physical exertion (e.g. sporting activities), or on sneezing or coughing” [3,4]. SUI, also known as effort incontinence, is due essentially to insufficient strength of the pelvic floor muscles and caused by loss of support of the urethra. It is characterized by leaking of small amounts of urine during activities which increase abdominal pressure such as coughing, laughing, sneezing, climbing stairs, running and lifting. It can be a common and distressing problem, which may have a profound impact on quality of life, including sexual life. Stress urinary incontinence leads to decreased quality of life in sufferers, especially in women over 60 years old and financial burdens for both the patient and the healthcare industry [5]. An estimated prevalence for urinary incontinence is nearly 30% in women aged 30–60 years, with approximately half of the cases attributed to SUI [6-10].

In 2001, Delorme described a new method of inserting the tape, which passes through the obturator foramen [11].

The transobturator approach (TOT) for sub-urethral tension-free vaginal tapes has since gained wide popularity in the surgical treatment of SUI.

TOT was introduced by Delorme et al. in 2001 and modified by de Leval in 2003 to allow insertion of the tape via the inside-out technique [12,13].

This approach has a theoretical advantage of less obstruction and postoperative voiding dysfunction, as well as avoiding some of the complications, such as bladder perforation and bowel perforation. Subsequently, deTayrac reported a 1-year cure rate of 84% with the TOT procedure [11].

Objectives:
To evaluate the effectiveness of transobturator tape (TOT) in the treatment of female stress urinary incontinence (SUI) and to analyze functional results.

Materials and Methods

We retrospectively reviewed all medical files of patients presenting with urinary incontinence to our Urology Center in Aden, Yemen, over a 2-year period from January 2018 to December 2019.

During the period, there were 42 patients with urinary incontinence treated with TOT and the postoperative follow up of the patients was at least 10 months in our Urology Center.

The collected data were age, residency, body weight, number of vaginal deliveries, complication, concomitant operation, operation time and result.

The collected data were tabulated and statistical analysis was done by estimating rates, means and standard deviations. We used IBM SPSS version 22 for statistical analysis.

Results

Forty-two women were operated for SUI under this study. The age of the study women ranged between 40 to 80 years and their mean age was 62.1 ± 9.7 years (Table 1). We grouped the study women in two age groups, ≤ 60 years and > 60 years. We found the patients of the age group > 60 years were 24 (57.1%) while the patients of the age group ≤ 60 years were 18 (42.9%) as shown in Table 1.

Most of the patients were from the three southern governorates, Abian 13 (31%) followed by Aden 12 (28.6%) and Lahj 11 (26.2%). The mean body weight of the patients is 67.5 ± 7.0 kilograms (kg) and ranged between 55 and 80 kg, as shown in Table 1.

As shown in Table 2 the number of vaginal deliveries ranged between 5 and 10. We categorized the number of vaginal deliveries in 2 groups: 5 – 7 vaginal deliveries were 13 (31.0%), and 8 – 10 vaginal deliveries vaginal deliveries 29 (69.0%).

The Mean number of vaginal deliveries was 8.0 ± 1.2. Concomitant operations were posterior colpotomy 3 (7.0%) and anterior colpotomy 2 (4.8%). The Mean operative time was 48 ± 8.9 minutes.

Four cases developed complications, 2 (4.8%) major bleeding, 1 (2.4%) of them was with bladder injury and 1 (2.4%) urine retention, (Table 3 & Figure 2). Additionally, 39 (93.0%) of the outcome of operated women were with excellent success while with failed results were 3 (7.0%), as shown in Table 3 & Figure 2 .

Table 1: Demographic variables of the study women (n=42)

Variables	No	%
Range of age (years):	40 - 80	
Mean age (years):	62.1 ± 9.7	
Age groups (years):		
≤ 60	18	42.9
> 60	24	57.1
Governorate:		
Abian	13	31.0
Aden	12	28.6
Lahj	11	26.2
Taiz	3	7.0
Shabwah	2	4.8
Aldhale	1	2.4
Mean body weight (Kilogram)	67.5 ± 7.0	
Range (Kilogram)	55 to 80	

Figure 1: Age proportions of the study women

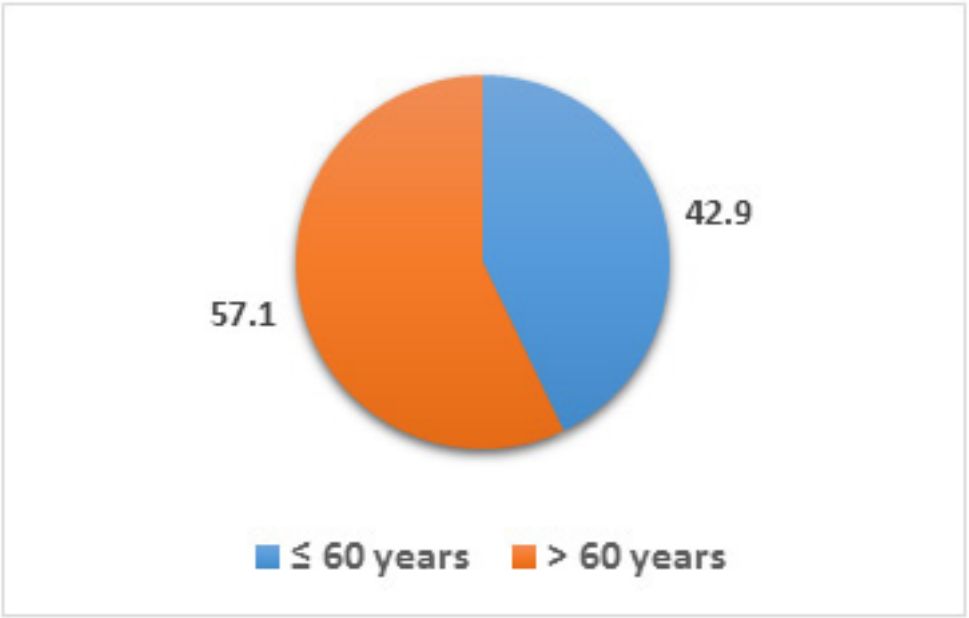


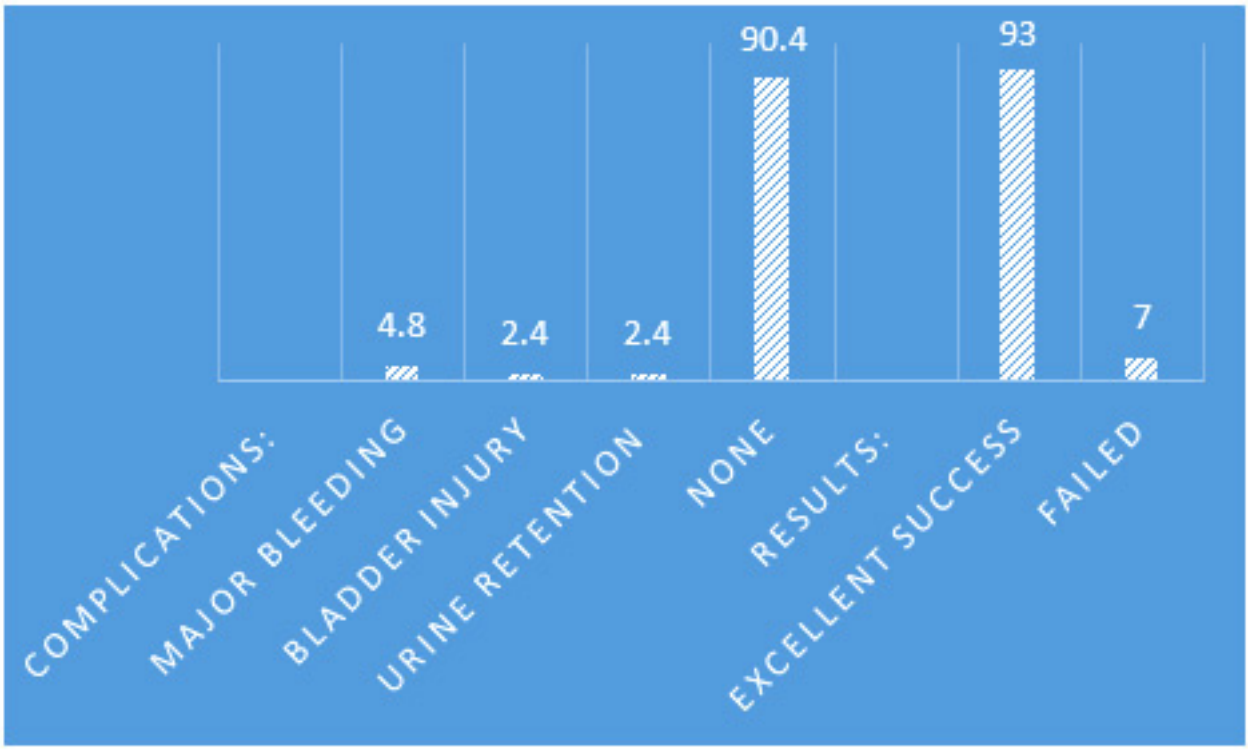
Table 2: Frequency of different variables of the study women (no = 42)

Variables	No	%
Number of vaginal deliveries:		
5 – 7	13	31
8 – 10	29	69
Mean number of vaginal deliveries:	7.0 ± 1.2	
Treatment:		
Trans-obturator tape	42	100
Concomitant operations:		
Posterior colpotomy	3	7.0
Anterior colpotomy	2	4.8
None	37	88.2
Mean operative time (minutes):	48 ± 8.9 0	

Table 3: Frequency of complications and results among the study women (42)

Variables	No	%
Complications:		
Major bleeding	2	4.8
Bladder injury	1	2.4
Urine retention	1	2.4
None	38	90.4
Results:		
Excellent success	39	93.0
Failed	3	7.0

Figure 2: Proportion of complications and the results of the study women



Discussion

Cooper et al [14] mentioned that UI is not a normal part of ageing; up to 40% of older women (≥55 years of age) report experiencing UI in everyday life. UI may lead to a significant reduction in women's quality of life, psychological health, confidence, sexuality, and societal inclusion [15]. This occurs to different degrees of severity; some women experience infrequent leakage, and others experience more frequent problems or total inability to control their bladder function [16].

Causes of UI for older women vary from functional causes, such as damage to the urethra, or pelvic floor muscles [17], to other issues, including an overactive bladder or lower urinary tract and bladder infections. The likelihood is increased for those who have experienced vaginal birth, are obese, or have familial risk [18].

SUI refers to the involuntary leakage of urine from the external urethral orifice when abdominal pressure increases due to actions such as sneezing, coughing and laughing [19].

Stress urinary incontinence affects 15.7% of adult women; 77.5% of women report the symptoms to be bothersome and 28.8% report the symptoms to be moderate to severe [20]. Prevalence of stress urinary incontinence will increase with age particularly with menopause. One study found that 41% of women older than 40 years old will have urinary incontinence [21]. Up to 77% of elderly females in nursing homes will have urinary incontinence [22].

In our present study, there were 42 women operated for SUI. We found in the present study that most of the patients were from the rural governorates with 30 (71.4%).

The age of the study women ranged between 40 to 80 years and their mean age was 62.1 ± 9.7 years.

The mean age of the patients operated for SUI reported by Magon et al [23] was 46.2 years (SD 11.2 years; range 24–70 years). The mean age of patients reported by Taweel in his series was 52 ± 9 years (range 34–70 years) [24].

Kaelin-Gambirasio et al [25] in their analysis of 233 cases had patients with an average age of 57.9 years (SD 13.2 years).

In our study, we grouped the study women in two age groups, ≤ 60 years and > 60 years. We found the patients of the age group > 60 years were (57.1%) while the patients of the age group ≤ 60 years were (42.9%).

We found in our current study that the mean body weight of the patients is 67.5 ± 7.0 kilograms (kg) and ranged between 55 and 80 kg.

Obesity is one of the important risk factors for the development of urinary incontinence with old age [26,27]. Some authors have described an increase of intra-abdominal pressure in obese patients [28], and this phenomenon may stress the pelvic floor, possibly causing nerve and muscular injury that might lead to a higher prevalence of SUI [29].
In our present study, the number of vaginal deliveries ranged between 5 and 10. We categorized the number of vaginal deliveries in 2 groups: 5 – 7 vaginal deliveries were 13 (31.0%), and 8 – 10 vaginal deliveries 29 (69.0%). In the present study, we found the mean number of vaginal delivery was 8.0 ± 1.2.

Gari et al [30] found in their published study, that the presence of SUI increased with the number of pregnancies, and among women who had at least one vaginal delivery and no delivery via cesarean section. They added that the likely explanation for this is that mechanical strain during repetitive delivery may cause muscle, fascia, and ligamentous disruption, as well as damage to connective and neurological structures of the pelvic organs and pelvic floor. Similar findings have been reported in two congruent studies. The first study, was conducted by Gyhagen et al which reported up to a 20–30% increase in the prevalence of SUI due to pregnancy, and this increased to 43% if the delivery was vaginal [31],

The second study carried out by Altman et al [32] reported an increase in the prevalence of SUI by 12% due to pregnancy and vaginal delivery.

In the current study, we observed 4 (9.6%) cases developed complications. They were (4.8%) major bleeding, (2.4%) of them was bladder injury and (2.4%) were urine retention.
Magon et al [23] reported that in their study, there was one bladder and one urethral injury intra-operatively. They added that in their opinion, it is mandatory to inspect the lateral vaginal wall after passing the needle through transobturator foramen. In the immediate postoperative period, only one patient (1.7%) had transient urinary retention after removal of urinary catheter, which was relieved by recatheterization and subsequently had successful voiding on the next day.

Additionally, we found in our present study, (93.0%) of the outcome of operated women had excellent success while with failed results were 3 (7.0%), at six months postoperatively.

Buhur et al [33] reported in their study that TOT operation is effective in treating stress urinary incontinence, 89.6% at six months postoperatively.

Chrysostomou [34] reported in his published study that the TOT is a simple, effective and safe procedure for treating SUI. He added the cure rate of SUI, defined as the disappearance of subjective and objective SUI, was 94.5% during the follow up period. Success rate of our current study is also similar to other reported series [35-37].

Conclusion

We concluded that urinary incontinence is a common health problem, which affects women of all ages ın Aden and the surrounding governorates. Stress urinary incontinence has a negative impact on quality of life in both the physical and mental health domains. The transobturator approach is an effective treatment of stress urinary incontinence with low morbidity and with acceptable success and outcome. Further studies are needed to determine the magnitude of this health problem in our country.

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