

# Psychological aspect of qualification to implant an artificial urethral sphincter AMS 800

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## KEY WORDS

urinary incontinence ▶ artificial urethral sphincter AMS 800 ▶ Mini-Mental State Examination (MMSE) ▶ Geriatric Depression Scale (GDS)

## ABSTRACT

**Introduction.** Implantation of the AMS 800 artificial urethral sphincter is a "gold standard" in the treatment of total urinary incontinence in men. Appropriate qualification of patients to urinary incontinence treatment determines the higher effectiveness of this method. Service of this device requires physical fitness and mental efficiency from a patient.

**Material and methods.** The Urological Clinic hospitalized 16 patients, aged from 60 to 80 years, after first qualification for artificial urethral sphincter implantation. Psychological assessment was carried out during anamnesis and medical examination using the MMSE and the GDS.

**Results.** Psychological deviations were found in 7 out of 16 examined patients, but finally 2 patients were disqualified because of their cognitive function disorders with elements of low level depressive syndrome (1) and benign cognitive and memory function disorders (1). Among the patients who were examined by a psychologist: four of them showed mild (3) and temperate (1) features of depressive syndrome and one patient showed benign cognitive disorder without dementia. However, none of these findings were contraindications to incontinence treatment with an artificial urethral sphincter.

**Conclusions.** 1. Mild and temperate features of depression syndrome are not absolute contraindications for a sphincter AMS 800 implantation. These patients need only pharmacological treatment. 2. Cognitive and other memory disorders are contraindications to this method. 3. The qualification to implantation an artificial urethral sphincter should include a psychological assessment, especially in older patients in whom mental disorders are suspected.

The involuntary leakage of urine can completely disorganize a patient's life. Shame, helplessness, and a low sense of self-worth are feelings that very often affect people suffering from urinary incontinence. All of these emotions directly impact quality of life in both personal and professional life. This is often because of difficulties with maintaining good hygiene (dependency on changing diapers, catheters, and other protective devices regularly) and needs for assistance from other people. The people suffering from this disease tend to reduce or remove themselves from many social habits and they remain at home, leave their jobs and social contacts, which cause complete isolation and results in severe depression [3, 4].

The frequency of urinary incontinence occurrence is increasing with age. Approximately 50% of men and women over the age of 70, suffer with this condition. It is estimated that urinary incontinence regards 10% of the population thus it is a common social problem [5, 6]. According to published data, every 8<sup>th</sup> adult man suffers from urinary incontinence in Poland.

Urinary incontinence in men is commonly caused by damage of the urethral sphincter, which occurs during surgery on the prostate gland (radical prostatectomy, etc.). Less frequent causes of urinary incontinence include: membranous urethral damage sustained in pelvic fractures, abnormal innervation of the lower urinary tract (myelomeningocele), and traumatic spinal cord injuries. [1, 7, 8].

In the treatment of men with mild and moderate forms of urinary incontinence, many methods were applied, such as synthetic tape (I – step), periurethral injections, implantation of closure sealing materials such as Teflon, collagen, and self-detachable balloon systems among others. However, in the case of total urinary incontinence, the most effective treatment is implantation of the AMS 800 hydraulic urethral sphincter, which is the 'gold standard' [9]. The first such device was constructed in 1972 by American urologist Brantley Scott. This device was refined and is currently produced by American Medical Systems for the past 40 years. Proper patient qualification for this treatment for urinary incontinence determines the high efficiency of this method, up to 90% continence rate. Support for the implanted device requires manual and intellectual efficiency from the patients. Before implantation, narrowing of the bladder neck and/or urethra, the presence of foci of infection, and neurogenic bladder dysfunction have to be excluded absolutely [1, 10-13].

The aim of this work was to show the psychological aspects of qualification to implant an artificial urethral sphincter caused by urinary incontinence.

## MATERIAL AND METHODS

In the Department of General, Oncologic, and Pediatric Urology, Ludwik Rydygier Collegium Medicum, Nicolaus Copernicus University in Bydgoszcz from August 2007 to October 2008, 16 patients aged 60-80 (average 69.75) were hospitalized after first qualification to implant of an artificial urethral sphincter. Sixteen patients previously underwent implantation of an artificial urethral sphincter. Some of the complications after this procedure were related to improper han-

## INTRODUCTION

Urinary incontinence is the uncontrolled leakage of urine, which is both a social and hygienic problem. It is an enormous disability, which consists of physical cripple as well as psychological, hygienic, and social disablements [1, 2].

dling of the device. Taking this result into account, we decided to include the opinion of a psychologist in the qualification for implantation of an artificial urethral sphincter. In this period of treatment, psychological consultation had become a standard to qualify for AMS 800 implantation. Psychological assessments were conducted in 16 patients. Thirteen patients were consulted once, two patients twice and one patient three times, making together 20 examinations. Psychological assessment was realized during anamnesis and medical examination using the Mini-Mental State Examination (MMSE) (Table 1) and the Geriatric Depression Scale (GDS) (Table 2). The aim of MMSE is quantitative assessment of cognitive functions. Interpretation of this test is as follows: 30-27 p – correct result; 26-24 p – cognitive disorder without dementia; 23-19 p – light dementia; 18-11p – mid dementia; 10-0 p – deep dementia. GDS is self-assessment of depression level in patients. Interpretation: 0-10 p – without depression; 11-20 p – light depression; and >20 p – deep depression.

## RESULTS

In nine out of the 16 patients, abnormalities in psychological examination were not found, allowing for direct qualification to artificial sphincter implant. Psychological deviations were found in seven of the 16 examined patients, but two patients were disquali-

**Table 1.** Mini Mental State Examination (MMSE)

MINI MENTAL STATE EXAMINATION (MMSE)	
Patient:	
Examiner:	
Date	
	SCORE (one point for each answer)
<b>ORIENTATION</b>	
Year Month Day Date Time	/5
Country Town District Hospital Ward	/5
<b>REGISTRATION</b>	
Examiner names 3 objects (eg apple, table, penny) Patient asked to repeat (1 point for each correct). THEN patient to learn the 3 names repeating until correct.	/3
<b>ATTENTION AND CALCULATION</b>	
Subtract 7 from 100, then repeat from result. Continue 5 times: 100 93 86 79 65 Alternative: spell "WORLD" backwards - dlrow.	/5
<b>RECALL</b>	
Ask for names of 3 objects learned earlier.	/3
<b>LANGUAGE</b>	
Name a pencil and watch.	/2
Repeat "No ifs, ands, or buts".	/1
Give a 3 stage command. Score 1 for each stage. Eg. "Place index finger of right hand on your nose and then on your left ear".	/3
Ask patient to read and obey a written command on a piece of paper stating "Close your eyes".	/1
Ask the patient to write a sentence. Score if it is sensible and has a subject and a verb.	/1
<b>COPYING</b>	
Ask the patient to copy a pair of intersecting pentagons:	/1
<b>TOTAL SCORE</b>	/30

fied because of their cognitive function disorders, which showed elements of low level depressive syndrome and benign cognitive and memory function disorders. The disqualified patients underwent urinary incontinence treatment with I-stop tape (Tab. 3). Among the patients who were examined by a psychologist: four of them displayed mild and temperate features of depressive syndrome. These, however, were not contraindications to artificial urethral sphincter implant, in light of the fact that only pharmacological treatment

**Table 2.** The Geriatric Depression Scale (GDS)

Patient:	Examiner:	Date:
Directions to Patient: Please choose the best answer for how you have felt over the past week. Directions to examiner: Present questions VERBALLY. Circle answer given by patient. Do not show to patient.		
1	Are you basically satisfied with your life?	Yes No (1)
2	Have you dropped many of your activities and interests?	Yes (1) No
3	Do you feel that your life is empty?	Yes (1) No
4	Do you often get bored?	Yes (1) No
5	Are you hopeful about the future?	Yes No (1)
6	Are you bothered by thoughts you can't get out of your head?	Yes(1) No
7	Are you in good spirits most of the time?	Yes No (1)
8	Are you afraid that something bad is going to happen to you?	Yes (1) No
9	Do you feel happy most of the time?	Yes No (1)
10	Do you often feel helpless?	Yes (1) No
11	Do you often get restless and fidgety?	Yes (1) No
12	Do you prefer to stay at home, rather than going out and doing new things?	Yes (1) No
13	Do you frequently worry about the future?	Yes (1) No
14	Do you feel you have more problems with memory than most?	Yes (1) No
15	Do you think it is wonderful to be alive now?	Yes No (1)
16	Do you often feel downhearted and blue?	Yes (1) No
17	Do you feel pretty worthless the way you are now?	Yes (1) No
18	Do you worry a lot about the past?	Yes (1) No
19	Do you find life very exciting?	Yes No (1)
20	Is it hard for you to get started on new projects?	Yes (1) No
21	Do you feel full of energy?	Yes No (1)
22	Do you feel that your situation is hopeless?	Yes (1) No
23	Do you think that most people are better off than you are?	Yes (1) No
24	Do you frequently get upset over little things?	Yes (1) No
25	Do you frequently feel like crying?	Yes (1) No
26	Do you have trouble concentrating?	Yes (1) No
27	Do you enjoy getting up in the morning?	Yes No (1)
28	Do you prefer to avoid social gatherings?	Yes (1) No
29	Is it easy for you to make decisions?	Yes No (1)
30	Is your mind as clear as it used to be?	Yes No (1)
TOTAL: Please sum all bolded answers (worth one point) for a total score .....		
SCORES: 0 – 9 Normal 10 – 19 Mild depressive 20 – 30 Severe depressive		

**Table 3.** Analysis of the psychological examinations

	Age	GDS	MMSE	Abnormalities in the psychological examination
1	71	13	29	mild depressive syndrome
2	73	6	30	without deviation
3	76	5	30	without deviation
4	70	6	29	without deviation
5	69	12	25	cognitive function disorders and mild depressive syndrome – DISQUALIFICATION
6	80	4	25	benin cognitive and member function disorders without dementia – DISQUALIFICATION
7	70	3	29	without deviation
8	66	18	30	temperate depressive syndrome
9	63	2	26	cognitive function disorders without dementia
10	65	7	29	without deviation
11	76	3	28	without deviation
12	67	2	30	without deviation
13	73	4	29	without deviation
14	61	3	30	without deviation
15	60	14	28	mild depressive syndrome
16	76	16	27	mild depressive syndrome

and ambulatory control in the outpatient psychological clinic need to be added to the program; one patient showed a benign cognitive disorder without dementia, which is also a contraindication to incontinence treatment with artificial urethral sphincter. In the end, the AMS 800 implant was applied in 12 of the 16 patients after psychological assessment, because of other causes.

## DISCUSSION

All our patients underwent basic urological diagnostics to define the type and degree of urinary incontinence. Urethral patency was also determined and included urodynamic studies to assess detrusor muscle efficiency and the degree and nature of urethral sphincter dysfunction. However, the most important result required to qualify patients to the artificial urethral sphincter was obtained during assessment of the patient's mental and intellectual state [10, 12]. This is an important issue because the average age of the patients qualified to the implant was 70 years. These patients are often burdened with a number of chronic diseases, whose symptoms intensify a poor state of mind. Impaired psychomotor functions may also disqualify them from such surgery. Another important element of qualify to AMS 800 implant is adequate patient motivation for the surgery. The patient should also understand the essence of the treatment method, because together with manual dexterity, it will allow for independent control of the sphincter pump. There are also crucial elements influencing the lifespan of the hydraulic device and the occurrence of possible complications related to incorrect service [14]. Therefore, cognitive and other memory disorders are contraindications to this method. Artificial urethral sphincter implantation is an invasive method, although appropriate qualification makes this treatment the most effective. The main element of success in treating the patient is to correctly qualify patients [1, 3, 4]. The qualification to implant the AMS 800 should be considered by an interdisciplinary diagnostic and therapeutic team, which should include a psychologist.

## CONCLUSIONS

1. Mild and temperate features of depression syndrome are not absolute contraindications for sphincter AMS 800 implantation. These patients need only pharmacological treatment.
2. Cognitive and other memory disorders are contraindications to this method.
3. The qualification to implantation an artificial urethral sphincter should include a psychological assessment, especially in older patients with suspicion of mental disorders.

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