Profesional paper

PREOPERATIVE CHARACTERISTICS OF SQUAMOUS KERATINIZING METAPLASIA OF THE BLADDER IN WOMEN

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APSTRACT

Introduction: The squamous keratinizing metaplasia (SCM) of the urine bladder. also known as leukoplakia of the urine bladder, is a rare disease of the bladder, in which the normal transitional epithelium transforms in squamous epithelium above whom is found layer of keratin. In most female patients there are typical non-specific urinary symptoms, i.e. symptoms of the lower urinary tract, such as frequency. urgency. suprapubic pain. discomfort. as well as microhematuria and less often macrohematuria.

Goal: The goal of the study is to determine the association of the preoperative characteristics of leukoplakia of the bladder in women, with the positive finding of leukoplakia on cystoscopic examination.

Materials and methods: In this study we present a series of 5 patients with leukoplakia proven by cystoscopy and then preoperatively monitored according to a specific protocol. Before the cystoscopy, the severity of the patient's symptoms was determined according to the international classification for urinary symptoms International Prostate Symptom Score (IPSS), questionnaire who is used for urinary symptoms. Then laboratory analyses, ultrasonography of the urinary tract, cytological analysis of the urine, BTA (Bladder Tumor Antigen) immunohistochemical test, urine culture and cystoscopy were performed.

Results: In every female patient the symptoms of the lower urinary tract and the pain were the most common symptoms. All patients had high initial IPSS score. urine culture was positive in three patients, cytological analysis varied between the first and second classification groups, ultrasonography showed thickened bladder walls in 3 patients, BTA (bladder tumor antigen) immunohistochemical tests were negative in all patients, on cystoscopy in all patients were diagnosed with a "leukoplakia like" change in the trigonum of the bladder.

Conclusion: The bipolar transurethral resection. will relieved the symptoms in women with squamous keratinizing metaplasia, will improve the quality of life, and will be superior in relationship on the conservative treatment.

INTRODUCTION

Rare bladder diseases include leukoplakia (white plaques on the bladder), malakoplakia (brown plaques on the bladder), bladder amyloidosis, bladder sarcoidosis, and megacystic bladder syndrome.

Squamous keratinizing metaplasia (SCM) of the bladder, also known as leukoplakia of the bladder, is defined as the transformation of the normal multilayered transitional epithelium of the bladder into a multilayered squamous (squamous) epithelium, which may be covered with a layer of keratin in squamous keratinizing metaplasia, or to be without a keratinized layer in squamous metaplasia.

Pathohistologically, leukoplakia is a metaplastic lesion, which occurs as a reaction of the normal multilayered transitional epithelium to chronic irritation such as

frequent and long-lasting urinary infections, calculus of the bladder, or a foreign body.

In the literature, chronic infection is often associated with leukoplakia. (1,3) It is often found in chronic cystitis, calculus of the bladder, schistosomiasis and long-term wearing of a urinary catheter. However, in some patients neither functional nor anatomical obstruction can be proven, and urine cultures are sterile.

Leukoplakia can appear in different places in the bladder and urinary tract, but the most common localization is in the trigonum of the bladder. Microscopically, there is a picture of multilayered squamous epithelium with keratinization. Apart from squamous metaplasia, histopathological criteria for leukoplakia include acanthosis, cellular atypia and dysplasia.

Preoperative symptoms of leukoplakia are long-lasting and refractory to conservative therapy. Lower urinary tract symptoms (LUTS). pollakisuria, dysuria, urgent urination, as well as signs of urinary infection are common and most common. The infection is present in 50% of patients. Some patients have difficult and painful urination as well as hematuria. In certain cases, calculi have also been found in the bladder. (1)

The preoperative gold standard for diagnosis is cystoscopy. Cystoscopy shows a " blizzard " phenomenon (floating scrums) and characteristic shiny, whitish " velvet " plates. In rare cases. almost the entire wall of the bladder is covered with irregular whitish membranes. Tumor-like inflammatory changes can also be seen. Therefore, a definitive diagnosis requires a biopsy that shows the nature of the change.

GOAL

The goal of this research is to confirm the association of symptoms of the lower urinary tract with cystoscopically proven leukoplakia changes in the trigone of the bladder.

MATERIALS AND METHODS

Subjects of evaluation were female patients with dysuric symptoms and a high initial score on the IPSS scale, aged 18 to 70 years, and cystoscopy-proven leukoplakia.

Exclusion criteria were : age below 18 and over 70 years, male, negative cystoscopy findings, acute cystitis and neurogenic bladder.

The patients were recruited through the urology departmant at the GOB "8th of September". and then the rest of the examinations followed, which were also performed at the GOB "8th of September". After getting acquainted with the work protocol, the patients signed an informed consent. Basic follow-up included :

IPSS score (international prostate symptom score) questionnaire - patients filled it in the urology clinic

Questionnaire - contains demographic and anamnestic data

Anthropometric measurements - body height (cm); body weight (kg)

Physical review - including measurement on bloody pressure (BP) and heart rate (HR)

Laboratory analyzes - were carried out in the central laboratory in GOB "8th of September" and included : complete blood count (CBC), basic biochemical analyses, urine, hemostasis, as well as hepatitis and HIV viral markers, blood group and Rh factor

Urine culture done in a microbiological laboratory

Ultrasonography of the urinary tract - performed in the urology clinic

Cytological analysis of urine - performed at the pathology department

BTA (bladder tumor antigen) immunohistochemical test - performed in a certified laboratory

Cystoscopy - performed in the cystoscopy clinic at the urology department

The patient follow-up protocol has been modified according to the latest recommendations of the EAU (European Association of Urology) for preoperative preparation of patients

RESULTS

Table 1. Demographic characteristics and anthropometric measurements

characteristics	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Age (years)	40	36	48	51	62
Gender	w	w	w	w	w
Ethnicity	Macedonian	Albanian	Macedonian	Macedonian	Macedonian
Height (cm)	163	165	161	174	160
Weight (kg)	70	63	65	71	72

Table 2. Medical history surrounding the underlying disease

Operative treatment and finding	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Positive cystoscopy finding	yes	yes	yes	yes	yes
Positive urine culture	yes	yes	no	no	yes
Positive BTA test	no	no	no	no	no
Cytological analysis of urine	* Cl. group I	* Cl. group I	* Cl. group I	* Cl. group II	* Cl. group I
Viral markers	negative	negative	negative	negative	negative
Blood group	A, Rh +	A, Rh+	O, Rh+	A, Rh-	AB, Rh+

* classification group

Table 3. Biochemical characteristics at baseline evaluation

Laboratory analysis	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Erythrocytes (10 12 / L)	4. 8	4.4	4.6	4.3	3.9
Hemoglobin (g/ dL)	1 3.0	12.3	13.4	11.9	12.6
Leukocytes (10 9 / L)	7. 1	6.1	10.1	4.8	9.3
Platelets (10 9 /L)	2 7 0	263	310	298	356
Glycemia (mmol /L)	6. 3	4.5	4.7	3.8	7.2
Urea (mmol /L)	5. 1	5.9	4.7	3.6	6.0
Kreatinine (umoL)	76	81	90	86	74
*AST (U/l)	18	26	17	24	19
*ALT (U/l)	21	32	30	17	37
Intravenous bilirubin (umol /L)	1 2. 4	9	13	11	16
Sodium (mmol /L)	141	139	140	138	143
Potassium (mmol /L)	4. 6	3.9	4.2	3.7	4.0

* AST/ALT – aspartate/alanine aminotransferase

Table 4. Physical examination

A review of cardiology interest	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Blood pressure (mm/Hg)	120/80	130/80	110/60	110/70	140/80
Pulse (beats/min)	70	75	68	59	65

Table 5. * IPSS score international questionnaire part one

IPSS score parameters	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
How often in the past month have you had a feeling of incomplete emptying of the bladder after urinating? (0-5)	3	3	2	4	3
How often in the last month did you have to urinate again in less than 2 hours? (0-5)	2	2	4	2	4
How often in the last month did you stop and start urinating several times? (0-5)	3	2	3	3	3
How often in the last month have you had difficulty holding (delaying) urination? (0-5)	4	3	3	4	4
How often in the last month did you have a weak stream of urine? (0-5)	2	1	2	2	2
How often in the last month did you have to strain to urinate? (0-5)	1	2	3	2	3
How often in the last month have you woken up to urinate? (points according to the number of urinations) (0-5)	2	2	3	1	3
* Total IPSS score	17	15	20	18	22

* a score of 0-7 indicates mild symptoms, 8-19 indicates moderate-severe symptoms, 20-35 indicates severe symptoms

* never 0, less than once 1, less than half the time 2, about half the time 3, more than half the time 4, almost always 5

Table 6. * Quality of life as a result of urinary symptoms

If you had to spend the rest of your life with the urinary symptoms you have now, how would you feel?	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Delighted 0					
Satisfied 1					
Generally satisfied 2					
Mixed, equally satisfied and dissatisfied 3	H	H			
Mainly dissatisfied 4					
Unlucky 5			H	H	H
Terrible 6					
Quality of life rating	3	3	5	5	5

* second part of the IPSS score questionnaire

Table 7. Urine analysis

Laboratory analyses	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Color	yellow	dark yellow	yellow	yellow	orange
Blurredness	clear	clear	blurred	clear	blurred
Glucose	negative	negative	negative	negative	positive
Bilirubin	negative	negative	negative	negative	negative
Ketones	negative	negative	negative	negative	negative
Specific gravity	1,008	1,012	1,014	1,010	1,015
Erythrocytes	5	2	0	0	3
Leukocytes	12	8	3	5	8
Urobilinogen (mmol /L)	3.2	5	2.1	3.7	4.8
Nitrites	+	+	-	-	+
Proteins	-	-	-	-	+
Ph urine value	5.5	5.8	5.4	5.3	6

DISCUSSION

All patients in our study were female. The patients ranged in age from 36 to 62 years old, with a median value of 47.4 years. All patients reported lower urinary tract symptoms lasting from three months to one year previously. All were treated with antibiotic therapy for lower urinary tract symptoms at least once every 3 months. Three of the patients had a positive urine culture at the first examination. BTA (bladder tumor antigen) test was negative in all five patients, and ultrasonography showed thickening of the bladder wall in three patients. Cytological analysis of urine varied between the first and second classification groups. All patients had negative markers of hepatitis B, hepatitis C and HIV. The urine analysis showed the finding of erythrocytes in 3 patients (subject 1, 2 and 5), leukocytes were found in all examined patients, 3 patients were positive for nitrites (subject 1, 2 and 5), there was protein in the urine in one patient. (subject 5) and Ph the urine value varied from 5.3 to 6. In all patients, cystoscopically, "leukoplakia like" changes on the trigonum of the bladder were confirmed. In two patients, the changes were larger than 2 cm in diameter.

According to the IPSS score (international prostate symptom score) questionnaire, we divided the patients into two groups, that is, three patients belonged to the group with medium-severe symptoms, while two belonged to the group with severe symptoms.

According to the evaluation of the quality of life, two female patients gave a rating of 3, that they feel mixed, equally satisfied and dissatisfied, (subject 1 and 2) and three female patients gave a rating of 5, that they feel unhappy (subject 3, 4 and 5).

Squamous keratinizing metaplasia of the bladder (SCM) is considered a rare disease of unclear etiology for which there is currently no effective medical therapy. Patients with SCM present severe lower urinary tract symptoms refractory to conservative therapy. Antibiotics, alpha blockers, and anticholinergics are effective in lower urinary tract symptoms associated with benign prostatic hyperplasia but not in squamous keratinizing metaplasia of the bladder. Therefore, in these cases, for now, the only treatment that offers improvement and disappearance of symptoms is the transurethral resection of the bladder lesion. According to Benelli 's study (5) improvement of the lower urinary tract symptoms was observed postoperatively in 75% of the patients.

The results of this study show us that bipolar transurethral resection of the bladder leukoplakia could significantly relieve the symptoms of female patients.

The entire procedure (preoperative, operative and postoperative) was explained in detail to all patients, all patients signed consent for operative treatment and informed consent for the study.

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