Primary cancer of the anterior urethra in a male patient

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KEY WORDS

male urethra ◗ cancer of urethra ◗ primary cancer ◗ anterior urethra

ABSTRACT

We present a 76-year-old male patient, who was diagnosed with transitional cell carcinoma (TCC) of the distal part of the urethra. Transurethral resection of the tumor (TURT) of the urethra was conducted. After establishing local relapse, surgical removal of the distal part of the urethra was proposed to the patient. Due to no consent for an open surgery, another electroresection of the tumor was performed. When the second relapse occurred, the patient provided his consent for surgical removal of the part of the urethra with anastomosis of the remaining part of the urethra with the skin from the abdominal part of the penis. Postsurgical observation did not reveal any local relapse.

INTRODUCTION

Primary cancer of the male urethra cancer occurs rarely. It entails less than 1% of all cancers of the urogenital system in men [1]. Most often the neoplasm occurs in men between 50 and 70 years of age. It most frequently occurs in the spongy and prostatic urethras. More rarely it develops in the distal part of the urethra. In about 80% of the patients, it is a squamous cell carcinoma (SCC) and in 15% it is a transitional cell carcinoma (TCC). The adenocarcinoma and the mucous cell carcinoma occur in approximately 5% of patients [2]. The first symptom usually includes hematuria, which occurs at the beginning of voiding, or a blood leak from the urethra regardless of micturition, as well as a narrowed stream of urine.

The purpose of this paper was to present a surgically treated patient, who was diagnosed with the primary TCC of the distal part of the urethra.

CASE REPORT

A 76-year-old patient, reported to our urology outpatient department in October 2008 due to hematuria, which he observed at the beginning of micturition, a narrowed stream of urine, and a palpable small tumor in the distal part of the urethra. Physical examination of the penis revealed the presence of an oval, painless, solid tumor measuring approximately 2 cm in diameter, located in the peripheral part of the urethra, just below the glans penis. An ultrasonographic evaluation of the upper urinary tracts and the urinary bladder did not reveal any pathological lesions. In the ultrasonographic evaluation of the penis we established a hypoechogenic area measuring 2.5 x 1.5 cm that was clearly separated from the surrounding area in the distal part of the penis at the site of the palpable tumor.

Micturition urethrocystography and urethrocystoscopy performed on November 16th, 2008 supported and confirmed the preliminary diagnosis of tumor of the anterior urethra. Proliferative lesions within the urinary bladder were not established. The patient was qualified for TURT.

The procedure of TURT was performed on November 18th, 2008. Immediately after the procedure the presence of the tumor in the urethra was not established. The histopathological evaluation of the specimens of the urethral tumor revealed the following diagnosis: TCC G3, high grade, and "lack of normal tissue makes an evaluation of the depth of infiltration impossible".

On January 20th, 2009, a follow-up urethrocystoscopy was performed and specimens were collected from the urethra. The histopathological evaluation revealed that a neoplastic structure was not established. After three months, in April of 2009, follow-up cytological evaluation of the urine sediment was performed and the presence of neoplastic cells was not established.

The next cytological evaluation of the urine sediment, performed in February 2010 revealed the presence of neoplastic cells in the urine sediment. The patient reported the appearance of blood in the urine at the beginning of voiding, and physical examination revealed a small palpable tumor in the distal part of the urethra again. The patient was qualified for urethrocystoscopy and the procedure was performed at the beginning of March 2010. Local relapse of the neoplasm was established. Radical treatment including surgical removal of the distal part of the urethra with neoplastic lesion was proposed to the patient. The patient did not consent to this type of treatment so a second electroresection of the urethral tumor was performed on the 23rd of March 2010. The histological evaluation provided the following diagnosis: urothelial carcinoma G2, high grade, pT1.

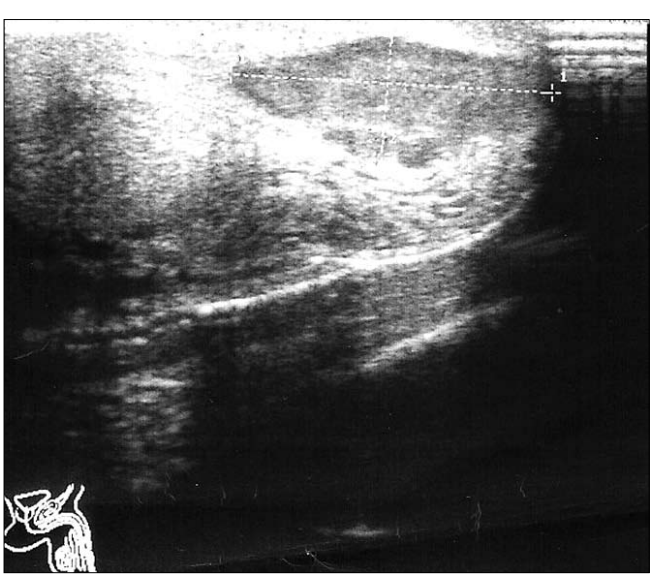


Fig. 1. Ultrasound evaluation. Linear head of 10 MHz longitudinally placed on the penis. The glans penis part of the penis is visible. Within its area, there is hypoechogenic zone located in the distal segment of the urethra, within the palpable tumor location.

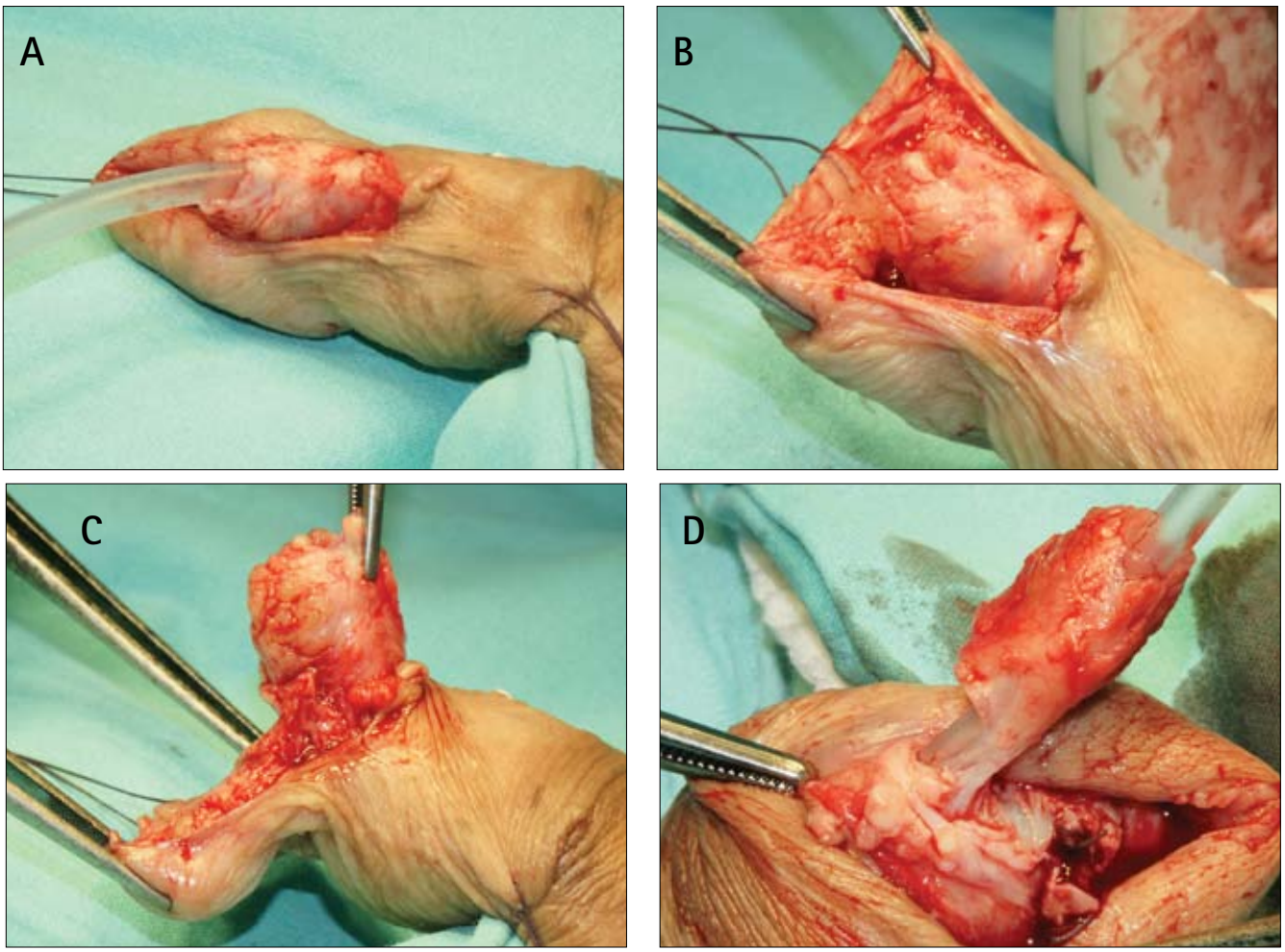


Fig. 2. Intraoperative photo. A, B. Partial excision of the anterior urethra and a part of the glans penis. Circular incision of the urethral ostium located at the top of the glans penis without the prepuce. C. The urethra was sharply prepared at the length of approximately 2.5 cm with a margin of 0.5 cm of healthy tissues. D. Excision of the distal part of the urethra with neoplastic lesions.

The next urethroscopy with specimen collection for histopathological evaluation was performed on the 11th of June 2010. The evaluation result: invasive urothelial carcinoma, high grade, pT1, G2.

Due to the occurrence of another local relapse, the patient was qualified for an open surgery. This time the patient gave his consent, but the procedure date was postponed due to cardiac disease in the patient. The surgical procedure was performed on October 7th, 2010. It included sharp preparation of the distal segment of the urethra at the length of approximately 2.5 cm with a margin of 0.5 cm of healthy tissues and excision of this part of the urethra.

Fig. 3. Excised distal segment of the urethra with the tumor and the margin of healthy tissue.

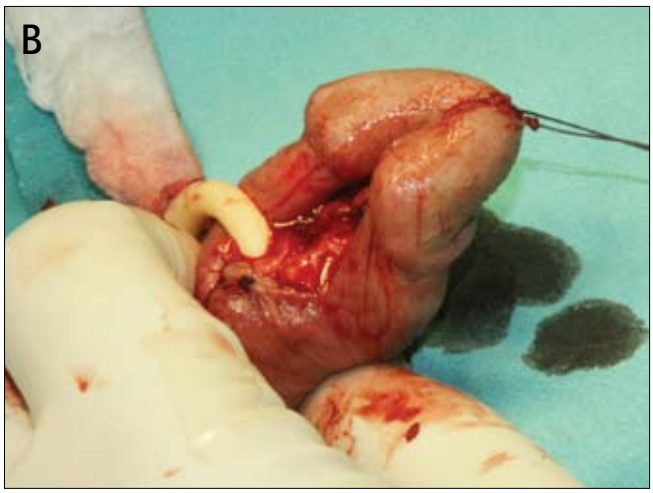
Then, the remaining unchanged segment of the urethra was longitudinally incised and sutured to the skin of the abdominal surface of the penis, after previous placement of Foley catheter No. 16 into the urinary bladder.

The postoperative course was not complicated. After four months, the patient did not report any complaints. He urinates normally, with a wide stream.

Follow-up cytological evaluation of the urine sediment did not reveal any abnormalities. Ultrasonographic evaluation of the penis did not reveal any lesions indicative of local relapse. Follow-up urethrocystoscopy was planned.

DISCUSSION

Primary cancer of the male urethra is a cancer developing within the prostatic, membranous, and, more rarely, the spongy segment of the urethra without an accompanying neoplasm within the urinary bladder. It occurs rarely, as it composes nearly 1% of all malignancies of the urogenital system in men. In 80% of cases, it is a squamous cell carcinoma and in 15 % it is a transitional cell carcinoma. It rarely occurs in the distal part of the urethra [1-6]. The diagnosis is supported by a precise medical history, ultrasonographic evaluation, urethrocystography, and urethrocystoscopy. However, the final diagnosis is established based on histopathological evaluation of collected specimens. The urethral cancer spreads by continuity, via blood and lymphatic vessels. Metastases of the cancer are usually located in the spongy-membranous part and



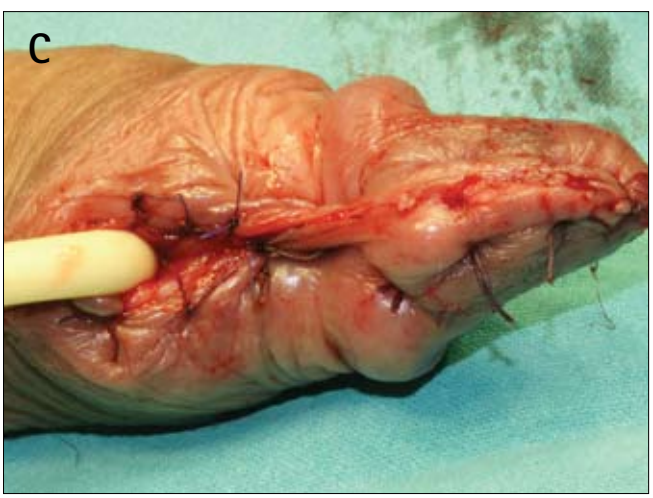


Fig. 4. A. Underpinned bleeding vessels of the glans penis. B, C. Incision of the urethra and suturing it to the skin of the abdominal surface of the penis, after previous placement of the Foley catheter No. 16 into the urinary bladder.

most often occur in the internal and external iliac lymph nodes and the obturator lymph nodes. Cancer metastases from the penile part mainly relate to the inguinal lymph nodes and the external iliac lymph nodes. The neoplasm spreads through the blood vessels mainly to the lungs and the bones. Clinical symptoms of the urethral cancer usually occur in a significantly advanced stage. They include: hematuria occurring at the beginning of voiding, a blood leak regardless of micturition, a narrowed stream of urine to the retention of urine, pain of the penis and the perineum, the tumor noticeable in palpation (the penile part of the urethra) [1-6].

Presence of the TCC located in the distal part of the urethra was established in the described patient. Cancer metastases to the lymph nodes were not established. Due to location of the neoplastic lesions and the nature of histopathological structure, transurethral electroresection was performed. The histopathological evaluation revealed that the lesion did not cross the subepithelial tissue. Follow-up urethroscopy performed after two months revealed no neoplastic lesions within the urethra. Local relapse was established after 15 months. The patient did not provide his consent for the surgical procedure of partial amputation of the penis. After the second electroresection and another relapse, the patient provided his consent for the open surgery. The procedure of choice for urethral cancer located in the distal segment of the urethra is partial amputation of the penis [2, 4]. In this case, the distal part of the urethra was excised with part of the glans penis. The major part of the glans penis remained, and the urethra was implanted to the abdominal part of the penis. Maximally conserving surgery was performed. Such management is connected with the necessity for regular follow-up visits. In each similar case, the patient should receive detailed information about the necessity for regular follow-up visits.

Fig. 5. A, B. View of penis after four months following the surgical procedure. Surgically created hypospadias resulted from excision of the distal part of the urethra together with the tumor. Local relapse has not been established.

CONCLUSIONS

Within the diagnostics of hematuria occurring at the beginning of micturition, presence of the primary urethral cancer should be considered.

In radical treatment of the male urethral cancer, if the neoplastic focus is located in the distal part of the urethra, it is possible to save part of the penis after partial excision of the urethra.

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