46,XX male syndrome with mullerianosis of the urinary bladder: A new clinical entity

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ABSTRACT

Müllerianosis of the urinary bladder is a rare entity characterized by the presence of an admixture of at least two types of müllerian tissue in the muscularis propria of the bladder. We report the case of a 43-year-old male patient presented for urological evaluation due to episodes of total gross hematuria. Physical examination revealed ambiguous external genitalia. Abdomiopelvic CT scan revealed a tumor at the level of the bladder floor. Transurethral resection of the bladder lesions was done and histopathological studie confirmed the diagnosis of müllerianosis. Karyotype analysis showed a 46 XX male syndrome.

1. Introduction

Müllerianosis of the urinary bladder is an extremely rare tumor-like lesion, characterized by the implantation of an admixture of at least two types of müllerian derived tissues (endocervicosis, endosalpingiosis, and endometriosis) in the bladder wall. It is typically found in females of fertile age; it was first described by Young and Clement in 1996.1

2. Observation

A 43-year-old unmarried male patient with no past medical or surgical history presented for urological evaluation because of episodes of total hematuria associated with left lumbago in recent months. He is a current every day smoker (7 PY). Physical examination revealed ambiguous external genitalia (Fig. 1), a right inguinal hernia and that the secondary sexual characteristics of this patient were like those of a normal male; only weak hair and well-developed breasts. The results of laboratory analyses were as follows: FSH: 8 mIU/mL, and testosterone: 0.45ng/mL.

A cystoscopy was performed revealing a short urethra with absence of the prostatic urethra, both ureteral meatus were unseen and the presence of a solid mass with a broad implantation base on the left side wall of the bladder, floor and trigone which extends to the bladder neck. Subsequently, transurethral resection of the tumor was performed.

Histopathological studies revealed the presence of cystically and elongated glands involving the lamina propria and extending to the muscularis propria. The cells lining the glands are cytologically bland and exhibit tubal and endocervical differentiation (Fig. 2). Immunohistochemically, glandular cells showed a strong positivity for estrogen and progesterone.

According to these histopathological and immunohistochemical results, an ultimate diagnosis of müllerianosis of the urinary bladder was made.

Karyotype analysis showed that the patient’s karyotype was 46, XX. Abdominal and pelvic MRI was done and showed the presence of a rudimentary hypotrophic penis without a communication with the bladder neck, a labia majora that continues through the vagina, the urethra ends at the anterior surface of the lower third part of the vagina and an uterus that was laterodeviated, (Fig. 3). A left ovary was also identified as normal in size and follicular in appearance.

At 1 year of follow-up, the patient presented with complains of gross hematuria. An TUBR was performed and showed the same previous anatomopathological aspect.

3. Discussion

Müllerianosis is a rare entity, first described in 1996 by Young and Clement, as an admixture of two or more müllerian tissues...
In this report we described the first documented case of a 46,XX sex-reversed male with müllerianosis of the urinary bladder.

The exact pathogenesis of müllerianosis remains a subject of debate. Many theories were discussed, mainly two; the theory of implantation and the theory of metaplasia. Implantation theory suggests that müllerian tissue is implanted into the bladder during pelvic surgery or cesarean section. However, this theory fails to explain müllerianosis in people with no history of surgery, or müllerianosis in other remote sites.

The metaplastic hypothesis explains the presence of multiple tissue types in the bladder as a potential result of the differentiation of Muller’s epithelium into endometrial, endocervical and tubal types. In addition, müllerianosis is usually located at the posterior wall of the bladder, a location that refers to its peritoneal lining which is extremely sensitive to female hormones. Koren et al. reported a case of tubal epithelium in continuity with urothelium in glandular cystitis, and all these cells were positive for estrogen and progesterone receptors, reinforcing the theory of metaplasia.

Müllerianosis is usually presented as a polypoid mass of the bladder wall, especially in fertile women. Clinical presentations are usually dysuria, pelvic pain and hematuria. These symptoms may or may not be associated with the menstrual period.

Pelvic surgery is found in 50% of cases. The age group in which patients are diagnosed with müllerianosis ranges from 28 to 55 years old. Müllereanosis has not been reported in male patients so far; however, endometriosis itself can be seen in male prostate cancer patients under estrogen therapy. Histologically, they appear as glands of variable size in the lamina propria and muscularis propria which are lined with tubular, endocervical and endometrial epithelium. Endometrial glands are often surrounded by a stroma similar to that of the endometrium. Sometimes, urothelial cells can also be found in the glands with müllerian tissue. The lesion is generally benign, with no evidence of malignancy such as atypia or increased mitosis.

In immunohistochemistry, estrogen and progesterone receptors are positive, making this tumor sensitive to hormones. The glandular component expresses Ca-125, while endometrial stromal tissue is positive for anti-CD10 antibody. One sex reversal syndrome consists of 46 XY females and 46 XX males. 46 XX male syndrome is a rare disorder, and it was first described by De la Chapelle et al., in 1964. It can be seen in 1 of 20,000–25,000 births. It is characterized by a male phenotype with a 46 XX karyotype. 46 XX male syndrome is divided into the sex-determining region Y (SRY) + (80%) and SRY – (20%) according to the presence of the SRY region on the X chromosome. SRY – 46 XX males often have genital anomalies and loss of masculinization as they are almost always diagnosed at early childhood. SRY + 46 XX males often have normal puberty, whereas some of
them have cryptorchidism.

Treatment for müllerian bladder disease is based on transurethral resection. Despite the fact that recurrence was reported in only 1 case in the literature 14 years after resection, in our case, a tumor recurrence occurred one year after the first resection. Ongoing monitoring is necessary because of our limited knowledge of this rare entity. Malignant degeneration of müllerian bladder disease is extremely rare. Only one endometrioid carcinoma complicating müllerianosis has been reported in the literature. A few cases of malignant degeneration of endometriosis in the bladder have been reported; most of them were adenocarcinomas and one case of adenosarcoma.

4. Conclusion

Mullerian bladder disease is a rare entity, but it should be considered as a differential diagnosis of benign bladder tumors for non-menopausal women. Endoscopic resection is the optimal treatment for this disease, which requires appropriate and systematic following.

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