CASE REPORT

Primary Clear Cell Carcinoma of the Bladder: Two New Case Reports and Review of the Literature

Cristóbal Ramírez Sevilla, Ester Gómez Lanza, Juan Llopis Manzanera, Carme Admella Salvador

Department of Urology, Mataró Hospital, Carretera de la Cirera, Mataró, Barcelona, Spain

ABSTRACT

Clear cell carcinoma is a very uncommon tumor of the bladder with few cases reported. It may present with hematuria, hydronephrosis, and renal failure. The immunohistochemistry is necessary for the diagnosis. The treatment recommended is radical cystectomy with urinary diversion. The survival range is from 14 weeks to 20 months according to the literature. The objective of this publication is to report two new cases of clear cell carcinoma of the bladder and review the literature.

Key words: Clear cell carcinoma of the bladder, cystectomy, immunochemistry

BACKGROUND

Clear cell carcinoma is a very uncommon type of histological growth of bladder cancer with less than 50 cases reported in the literature.[1] This tumor as a turnover of transitional bladder epithelium by cells with plenty of clear cytoplasm, elongated nuclei, and granular accumulations of chromatin.[2] Clinically, it can occur with gross hematuria, obstructive renal failure, and hydronephrosis. At the diagnosis, metastasis of clear cell renal carcinoma, melanoma, nephrogenic adenoma, and B-cell lymphoma should be considered. The immunochemistry of specimen from transurethral resection confirms the diagnosis with positivity for cytokeratin (CK) AE1/AE3, CK 7, and CK 20.[2,3] The recommended treatment is radical cystectomy and urinary diversion only if the performance status of the patient is good. According to the literature, the survival range is from 14 weeks to 20 months after diagnosis.[2]

CASE REPORT

Case report 1

A 78-year-old male was visited in emergency with gross hematuria starting 1 month before. In his medical history, he presented arrhythmia, hypertension, lower urinary tract symptoms, left inguinal hernioplasty, diabetes mellitus type II, and sleep apnea syndrome. The kidney, bladder, and prostate ultrasound reported normal ranges. The urethrocystoscopy evidenced the presence of a 2 cm tumor in posterior side of the bladder with solid appearance. The urine cytology was positive for carcinoma. Transurethral resection of the mass was performed and the patient was discharged in 48 h. The pathologist evidenced the presence of a cell pattern with clear cytoplasm and elongated nuclei [Figures 1 and 2], spreading the lamina propria and the muscle layer. The immunochemistry was positive for CK AE1/AE3, epithelial membrane antigen (EMA), CK 7, and CK 20. These findings confirmed the diagnosis of primary clear cell carcinoma of the bladder. Computed tomography (CT) scan of abdomen and chest was performed without evidence of distance dissemination. The case was presented in clinical session, and due to the medical history of the patient and his performance status, he was considered unfit for cystectomy. At 10 months of follow-up, the patient remained with general condition, and the cystoscopy and CT scan do not show recurrence.

Case report 2

A 92-year-old male with a medical history of emphysema, peripheral vascular disease, appendectomy, and lower

Address for correspondence:
Cristóbal Ramírez Sevilla, Department of Urology, Mataró Hospital, Carretera de la Cirera 230, 08304 Mataró, Barcelona, Spain. Tel.: 0034937417700. E-mail: cjrs70@yahoo.com.

© 2019 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

urinary tract symptoms was visited in the hospital due to pain and enlarged right testicle starting 2 months before. The physical examination showed a solid mass in the right hemiscrotum and inguinal area, with pain on mobilization. The ultrasound of the testes reported the presence of a heterogeneous mass of 12 cm × 6 cm spreading the right testicle [Figure 3], tunica vaginalis, rete testis, spermatic cord, and skin. Testicular tumor markers had normal ranges. In clinical committee, surgical treatment was decided due to the persistence of right scrotal pain. We performed direct scrotal approach because of the large size of the tumor and it was removed with admission for 24 h. The tumor was removed with admission for 24 h. The pathologist evidenced the presence of infiltration of testicles, spermatic cord, soft tissues, dermis, and scrotal skin by clear cell carcinoma, with angiolymphatic, venous, and perineural involvement. The immunochemistry confirmed the diagnosis with positivity for CK AE1/AE3, CK 7, CK 20, EMA, and uroplakin, with weak and focal positivity for carcinoembryonic antigen and was negative for vimentin, S-100, Melan-A, human melanoma black 45, cluster of differentiation (CD) 34, calretinin, CD30, gross cystic disease fluid protein 15, P40, P53, prostate-specific antigen, and transcription termination factor 1. The abdominal and chest CT scan revealed the absence of renal tumor and the presence of bilateral hydronephrosis secondary to a solid multifocal bladder tumor with solid appearance in the posterior a right side of the bladder, involving seminal vesicles and prostate gland with lymph nodes in the right external iliac and hypogastric chain of up to 12 mm [Figure 4]. The patient died 4 months after surgery.

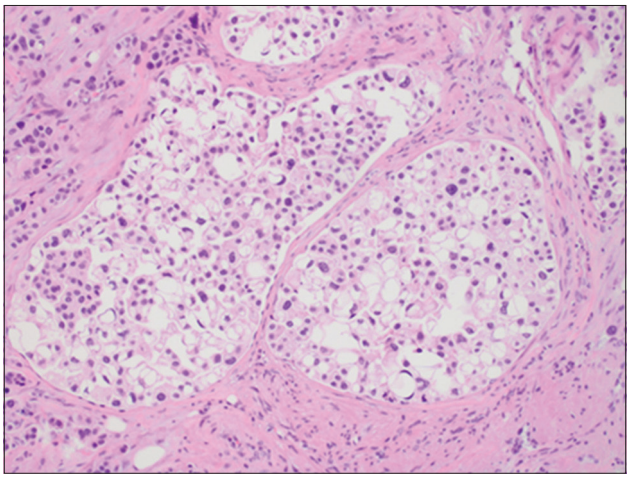

Figure 1: Cell pattern with clear cytoplasm and high-grade elongated nuclei (eosin-hematoxylin staining, ×20)

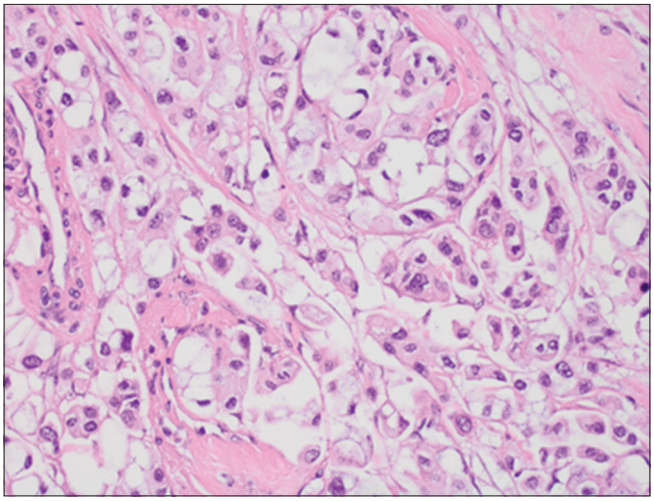

Figure 2: Cell pattern with clear cytoplasm and high-grade elongated nuclei (eosin-hematoxylin staining, ×40)

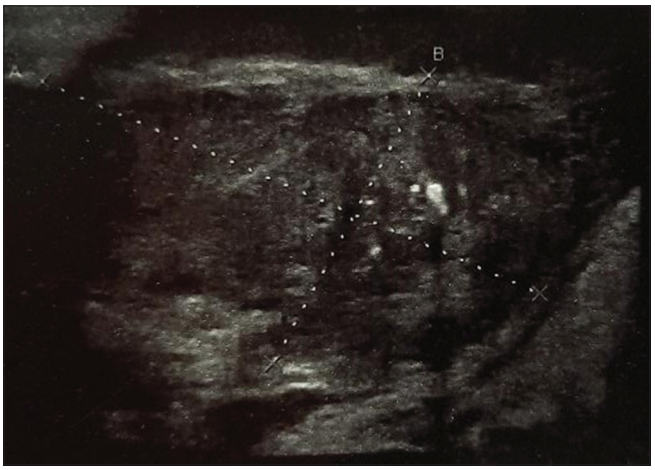

Figure 3: The ultrasound of the testes reported the presence of a heterogeneous mass of 12 cm × 6 cm spreading the right testicle

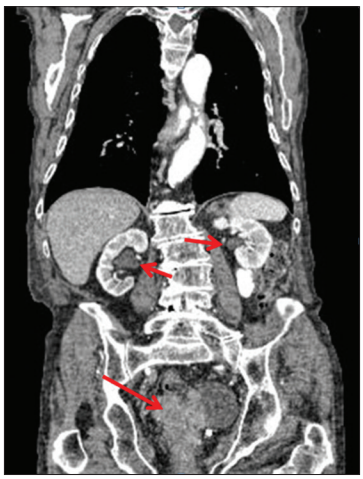

Figure 4: The computed tomography scan of the abdomen revealed bilateral hydronephrosis secondary to solid and extensive bladder tumor. The tumor extends to the posterior and right side of the bladder, seminal vesicles, and prostate gland with lymph nodes in the right external iliac and hypogastric chain of up to 12 mm

DISCUSSION AND LITERATURE REVIEW

Clear cell carcinoma of the bladder is a very rare tumor of the bladder. It often involves the muscle layer and tissues around the bladder and can develop peritoneal carcinomatosis and distant dissemination.[1-3] The clinical signs such as hematuria, pain, urinary infection, or acute urinary retention do not lead to suspect this type of tumor. Kidney, bladder, and prostate ultrasound, CT scan of abdomen and chest, urethrocystoscopy, and urinary cytology often warn the presence of a multiple and solid tumor.[2,3] The surgical management is transurethral resection of the mass. The pathology examination shows the presence of clear cytoplasm cells, with plenty of glycogen stores, positivity for PASS, and severe atypia.[3] The immunochemistry, according to the cases reported,[2-4] can be positive for CK 7, CK 20, CK 8/18, Ki 67, P53, CA 125, and alpha-methylacyl-CoA racemase. In the patients we report, the positivity is consistent with the literature for CK 7 and CK 20, and they also express CK AE1, CK AE3, and EMA.

The final treatment for clear cell carcinoma of the bladder is transurethral resection followed early by radical cystectomy with urinary diversión,[1] only if the patient has good performance status. The objective of the early and radical treatment is to avoid the peritoneal carcinomatosis.[2] In our first patient, cystectomy could not be performed due to his medical history and he was alive 10 months after the diagnosis. In the second case, due to his general condition and age, he was monitored in the palliative care unit, and he was died 4 months after the orchiectomy.

CONCLUSION

Clear cell carcinoma of the bladder can start not only with urinary symptoms, such as gross hematuria, but also with distant metastasis in the testicle. Once the immunochemistry confirms the diagnosis, early radical cystectomy must be recommended for its aggressive behavior and fast progression.

ACKNOWLEDGMENTS

We greatly appreciate the collaboration and dedication of Dr. Carme Admella Salvador for the pathological study and the edition of the figures (Hospital de Mataró, Barcelona, Spain).

To Ester Gómez Lanza from Moisés Broggi Hospital in Sant Joan Despí (Barcelona, Spain) for her great interest and dedication in the translation and correction of spelling mistakes.

REFERENCES

1. Moradi M, Shojaei S, Kaseb K, Rezaee H. Primary clear cell carcinoma of urinary bladder: A case report. Urol Case Rep 2018;16:41-8.
2. Knez VM, Barrow W, Lucia MS, Wilson S, La Rosa FG. Clear cell urothelial carcinoma of the urinary bladder: A case report and review of the literature. J Med Case Rep 2014;8:275.
3. Kramer MW, Abbas M, Pertschy S, Becker JU, Kreipe HH, Kuczyk MA, *et al*. Clear-cell variant urothelial carcinoma of the bladder: A case report and review of the literature. Rare Tumors 2012;4:e48.
4. Yamashita R, Yamaguchi R, Yuen K, Niwakawa M, Tobisu K. Urothelial carcinoma (clear cell variant) diagnosed with useful immunohistochemistry stain. Int J Urol 2006;13:1448-50.

How to cite this article: Ramírez Sevilla C, Gómez Lanza E, Llopis Manzanera J, Admella Salvador C. Primary Clear Cell Carcinoma of the Bladder: Two New Case Reports and Review of the Literature. Clin Res Urol 2019;2(2):1-3.