Case Report

DOI: http://dx.doi.org/10.18203/2349-2902.isj20193367

Micropapillary variant of transitional cell carcinoma in a young adult: a rare case report

Sasanka Kumar Barua, Ashish Ghanghoria*, Saumar Jyoti Baruah, Rajeev T. P., Puskal Kumar Bagchi, Debanga Sarma, Mandeep Phukan

Department of Urology, Gauhati Medical College and Hospital, Guwahati, Assam, India

Received: 26 May 2019 Revised: 11 July 2019 Accepted: 12 July 2019

*Correspondence: Dr. Ashish Ghanghoria,

E-mail: ashishghanghoria0311@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Micropapillary carcinoma is an uncommon variant of urothelial carcinoma with high metastatic potential. Usually seen in elderly individual, we herein report a case of 42 years old man presented with macroscopic hematuria for 1 month. Evaluation with CECT whole abdomen revealed irregularly marginated hyperattenuated mildly enhancing intraluminal mass lesions in right lateral wall and in floor of urinary bladder. No perivesical infiltration and no regional lymphadenopathy were detected. TURBT done and subsequent histopathological examination showed a high-grade transitional cell carcinoma with micropapillary variant. He was subjected to radical cystoprostatectomy with pelvic lymph node dissection. The pathological examination revealed a high-grade transitional cell carcinoma with micropapillary variant invading the perivesical adipose tissue. No tumor recurrence or metastasis was reported at the 18-months follow-up.

Keywords: Micropapillary carcinoma, Epidermal growth factor receptor, Non muscle invasive bladder cancer, Muscle invasive bladder cancer, Transitional cell carcinoma, Transurethral resection of bladder tumor

INTRODUCTION

Micropapillary carcinoma (MPC) of urinary bladder is an uncommon variant of urothelial carcinoma with high metastatic potential. The presence of this component in bladder biopsies should make one vigilant about its aggressive behaviour. Micropapillary urothelial carcinoma manifests at an advanced stage, with less than 9% of patients having non-invasive disease and more than 50% having muscle-invasive, nodal, or metastatic disease. The incidence of micropapillary urothelial carcinoma is 0.7% to 2.2% among all urothelial tumors with a male-to-female ratio of 10:1 with average age at diagnosis of 65 years. Around, 500 cases of MPC of bladder have been reported in literature as a special variant since its first depiction by Amin et al (1994). 1.2

Here we report a case of MPC in a young adult male.

CASE REPORT

A 42-year-old man presented with macroscopic hematuria for 1 month. On urine analysis red blood cells were 20/hpf and white blood cells were 10/hpf. Urine cytology was non-contributive. On ultrasound KUB there were two polyploidal mass lesion seen in urinary bladder. CECT whole abdomen revealed an irregularly marginated hyperattenuated mildly enhancing intraluminal mass lesions noted in right lateral wall of urinary bladder, size about- 36.4×26.1 mm and in posterior wall extending upto neck of bladder, size about 41.8×36.3 mm (Figure 1 and 2). No perivesical infiltration and no regional lymphadenopathy detected.

Subsequent TURBT done and revealed mass lesion over right antero-lateral bladder wall and posterior wall extending upto bladder neck. Histopathological examination revealed transitional cell carcinoma with micropapillary variant histology. Open radical cystoprostatectomy with pelvic lymph node dissection was performed within 1 ½ months of initial diagnosis. The final histopathological examination revealed, malignant cells arranged in small papillary clusters lying in clear spaces (Figure 2). These cells were of irregular nuclear outline and high mitotic activity (Figure 3).4 These tumor cells invaded the perivesical adipose tissue. Conventional transitional cell carcinoma elements were not found and pelvic nodes shown features of reactive changes. On immunohistogical examination, tumor was positive for epidermal growth factor receptor (EGFR).⁵ As there was no visceral metastasis, patient did not receive adjuvant chemotherapy. No tumour recurrence or metastasis were reported at the 18months of follow-up.

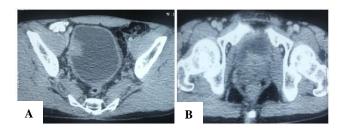


Figure 1 (A and B): CECT whole abdomen mass lesions noted in right lateral wall.

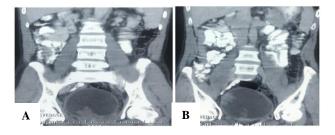


Figure 2 (A and B): CECT whole abdomen mass lesions noted in right lateral wall and in floor at bladder neck.

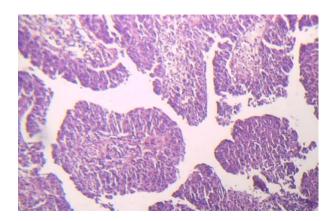


Figure 3: Small papillary clusters lying in clear spaces.

DISCUSSION

Micropapillary urothelial carcinoma was first described in the early 1990s as a tumor growth pattern that occurs in many organs, including bladder, breast, lung, and ovary, usually manifesting at an advanced stage. MPC of the bladder is considered a rare variant of transitional cell carcinoma occurs in elderly individual with an average age at diagnosis of 65 years, mostly in men with a maleto-female ratio of 10: 1.2 The histological features are distinctive: a surface component is composed of slender and delicate filiform processes or small papillary clusters lined by uniform transitional cells.³ The invasive component consists of tightly cohesive nests and conglomeration of micropapillary cells.⁶ These clusters lie in small clear spaces that lack endothelial lining, marked cytologic atypia with irregular nuclear outline and high mitotic activity are usually evident.⁶ Micropapillary urothelial carcinoma is associated with conventional urothelial carcinoma in 80% of cases.² The biphasic pattern of micropapillary carcinoma, with highgrade elements in the deeper portion, can be a potential source of under diagnosis in superficial transurethral resection specimens.² The immunohistochemical profile of MPC (positivity for cytokeratin 7, cytokeratin 20 and epithelial membrane antigen) suggests that it is a variant bladder adenocarcinoma.5 The of histologic characteristics of micropapillary urothelial carcinoma are similar to papillary serous carcinoma of the ovary that develops delicate filiform processes with infiltrating clusters of micropapillary tumors lacking vascular stalks. The presence of transitional cell carcinoma in situ and the cell positivity for cytokeratin 7 and cytokeratin 20 supported an urothelial origin.⁵ Even the focal presence of micropapillary pattern in an otherwise conventional bladder carcinoma is associated with advanced tumour stage and poor prognosis. Similar to that occurring in the urinary bladder, carcinoma with a micro-papillary pattern has also been described in the ovary, lung and peritoneum.^{1,4} Most of these tumors show a high propensity for lymph node metastasis. Angiolymphatic invasion is common even in non-muscle invasive disease, high progression rate from NMIBC to MIBC approaching 70% and subsequent metastatis despite treatment.⁴ Because of the advanced stage at diagnosis, the 5- and 10-year overall survival rate of patients with micropapillary urothelial carcinoma is 51% and 24%, respectively. MPC, although rare in younger individual, detected in our patient who is a 42 years young adult and was subjected to radical cystoprostatectomy to provide maximal survival benefits owing to highly aggressive nature of this variant histological subtype of TCC. The cancer specific and overall survival rates are similar, suggesting that most patients died from their cancer. The possibility of urothelial origin should also be considered if micropapillary pattern is found on metastatic deposits.⁶ The most effective treatment for all stages of micropapillary urothelial carcinoma is surgical resection. Treatment with transurethral resection and BCG therapy

is ineffective unless the tumor is completely resected.⁴ Neoadjuvant chemotherapy may actually worsen survival by delaying therapy when compared with immediate cystectomy.⁷ Immediate cystectomy for non-muscle invasive micropapillary bladder cancer has a cancer specific survival rate of 72% compared with 60% for those treated with transurethral resection and BCG followed by cystectomy at the time of progression.^{2,6,7} The best outcomes occurred in those patients who had no residual micropapillary tumor at the time of cystectomy, suggesting that complete resection of the tumor is the key procedure. Treatment is not codified on radical cystectomy associated with chemotherapy, particularly if there is visceral metastasis.^{6,7} In our case, there was no visceral metastasis, and adjuvant chemotherapy was not indicated because it seemed non-efficacious. Recent meta-analysis revealed that that MP variant histology is often associated with higher stage, lymphovascular invasion, carcinoma in situ, and higher likelihood of lymph node metastasisin comparison to TCC of urinary bladder, however after radical cystoprostatectomy MP variant of TCC does not confer worse prognosis in comparison to urinary bladder TCC in terms of recurrence free survival, cancer free survival and overall survival.8 However, optimal treatment remains to be defined in multicentre studies.

CONCLUSION

MPC of bladder is considered a rare variant of TCC and can occur in young individual. There is a biphasic pattern with high-grade components in the deeper portion which are likely to be missed in superficial biopsies. There is a high propensity towards lymph node metastasis. All these contribute towards aggressive behaviour. The presence of an MPC component in bladder biopsies should alert the urologists to this unusual but aggressive disease and early cystectomy is considered acceptable care.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required

REFERENCES

- Amin MB, Ro JY, el-Sharkawy T, Lee KM, Troncoso P, Silva EG, et al. Micropapillary variant of transitional cell carcinoma of the urinary bladder: hisotologic pattern resembling ovarian papillary serous carcinoma. Am J Surg Pathol. 1994;18:1224– 32.
- Johansson SL, Borghed G, Holmang S. Micropapillary bladder carcinoma: a clinicpathological study of 20 cases. J Urol. 1999;161:1798–802.
- 3. Chan GS, Ng WK, Nicholls JM. Micropapillary transitional cell carcinoma of urinary bladder: pathologic quiz case. Arch Pathol Lab Med. 2004;129:e53–4.
- 4. Sugino Y, Negoro H, Iwamura H, Moroi S, Oka H, Kawakita M, et al. Micropapillary variant of transitional cell carcinoma of the bladder. Int J Urol. 2004;11:792–4.
- Samaratunga H, Khoo K. Micropapillary variant of urothelial carcinoma of the urinary bladder; a clinicopathological and immunohistochemical study. Histopathology. 2004;45:55–64.
- 6. Oh YL, Kim KR. Micropapillary variant of transitional cell carcinoma of the ureter. Pathol Int. 2000;50:52–6.
- 7. Trabelsi A, Stita W, Korbi S, Mestiri S, Jaidene M, Mokni M, et al. Micropapillary carcinoma of the urinary bladder: a case report and review of the literature. Can Urol Assoc J. 2008;2(5):540–2.
- 8. Abufaraj M, Foerster B, Schernhammer E, Moschini M, Kimura S, Hassler MR. et al. Micropapillary Urothelial Carcinoma of the Bladder: A Systematic Review and Meta-analysis of Disease Characteristics and Treatment Outcomes. Eur Urol. 2019;75(4):649-58.

Cite this article as: Barua SK, Ghanghoria A, Baruah SJ, Rajeev TP, Bagchi PK, Sarma D, et al. Micropapillary variant of transitional cell carcinoma in a young adult: a rare case report. Int Surg J 2019;6:3028-30.