

Granular cell tumor of the urinary bladder: A case report

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ABSTRACT

Granular cell tumors (GCTs) are the tumors arising from Schwann cells. They should be considered as one of the differential diagnosis in the solid tumors of the bladder. Here, we report the case of a 60-year-old female presented with lower abdominal pain and burning micturition who on evaluation with contrast-enhanced computed tomography was found to have a bladder mass of 4 cm × 3 cm in the left lateral wall. Cystoscopy showed a smooth ovoid mass 4 cm × 3 cm situated above and lateral to the left ureteric orifice covered by normal bladder mucosa. The patient underwent transurethral resection of the bladder tumor, which was diagnosed as a GCT on histopathological examination and immunohistochemistry.

Key words: Bladder, Bladder carcinoma, Granular cell tumor

Granular cell tumors (GCTs) are the tumors arising from Schwann cells. They are commonly seen in the head and neck region (30–50%) [1,2]. The occurrence of GCT in the bladder and other genitourinary organs are rare. GCTs originating from the bladder are usually benign but can be malignant. Only 17 cases of GCT arising from urinary bladder are reported till date, and only 2 of them were malignant [3]. Our case is the eighteenth case to be reported. Hence, GCT should be considered as one of the differential diagnosis in the solid tumors of the bladder. Here, we report the case of a GCT originating from the urinary bladder in a 60-year-old female.

CASE REPORT

A 60-year-old female presented to the department with a complaint of lower abdomen pain and burning micturition for 6 months. There was no history of hematuria, and no other significant history was non-significant. Patient's general condition and vital signs were stable. Examination of the abdomen showed no significant findings. Per vaginum and per rectal examination was normal.

Urine microscopic examination showed pus cells 3–5/hpf and no red blood cells. Total leukocyte count was 5500 cells/mm³ (4000–11,000/mm³). Urine culture was negative for bacterial growth. Blood urea, serum creatinine, and no other significant history were normal. Ultrasound sonography abdomen showed a solid mass in the left lateral wall near the bladder base measuring 4 cm × 3 cm (Fig. 1a). Contrast-enhanced computed tomography showed an enhancing solid mass lesion measuring 4 cm × 3 cm in the left lateral wall near the bladder base (Fig. 1b). Cystoscopy showed a solid mass 4 cm × 3 cm noted just above and lateral to the left ureteric orifice projecting into the bladder with overlying normal mucosa (Fig. 1c).

Complete transurethral resection of the bladder tumor was performed. Post-operative period was uneventful. Macroscopically, the tumor appeared grayish-white and soft. Microscopically, there were sheets of polygonal cells with fairly indistinct cell borders, abundant granular cytoplasm, and a vesicular non-descript nucleus. The cells were arranged in sheets and nests separated by thin-walled blood vessels and were seen between the native muscle bundles. There was no atypia, necrosis or muscle invasion and there was no epithelial lining (Fig. 2). These microscopic features suggested the benign nature of GCT in our case.

Immunohistochemistry for S-100 protein showed diffuse cytoplasmic and nuclear positivity for tumor cells and negative for pan-cytokeratin, confirming the diagnosis of GCT. Follow-up cystoscopy was done at 3 months, and there was no recurrence. The patient is now free of disease for over 6 months since the time of surgery.

DISCUSSION

GCTs are uncommon and are usually benign tumors. In 1926, Abrikossoff first described the disease entity as a tumor of myocyte origin. Now, they are believed to have a neural origin (Schwann cells) based on immunohistochemical, histochemical, and ultra-structural analyzes [1]. They most commonly arise from the head and neck region (30–60%) [2], and other sites include oral cavity, chest wall, breast, and abdominal wall. GCT arising from the bladder is a rare entity and only 17 cases are reported in the literature so far, and only 2 of them are malignant [3]. It has a slight preponderance to occur in females and they occur mostly in the age group of 30–60 year. In children, the most commonly

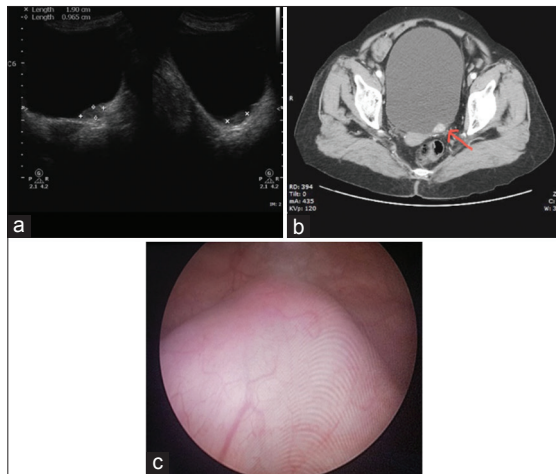


Figure 1: (a) Ultrasound sonography showing a hypoechoic solid mass of 4 cm × 3 cm in the left lateral wall of the bladder. (b) Contrast-enhanced computed tomography scan showing an enhancing solid mass of 4 cm × 3 cm in the left lateral wall of the bladder (red arrow). (c) Cystoscopy showing an solid mass of 4 cm × 3 cm in left lateral wall situated above the left ureteric orifice with overlying normal bladder mucosa

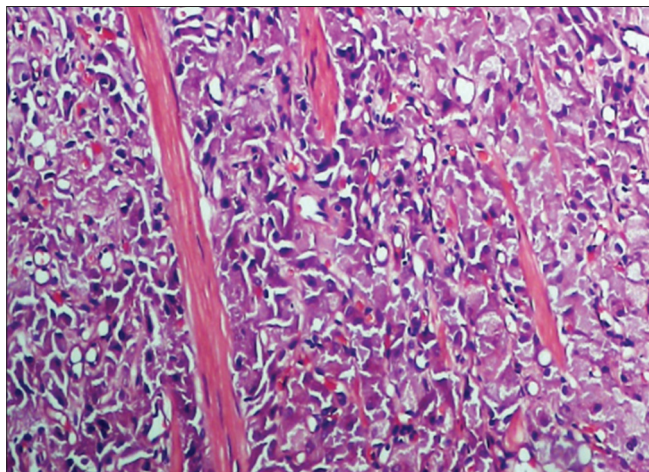


Figure 2: Sheets of polygonal cells with indistinct cell borders and abundant granular cytoplasm. 10×, H and E stain

arise from the oral cavity [3]. Depending on the site and size of the tumors, the patient might present with asymptomatic nodules to symptoms due to pressure effects. Gross hematuria is the most common symptom of bladder GCT.

Histologically, GCTs have findings as polygonal cells with abundant granular cytoplasm containing fine eosinophilic granules and scattered larger droplets [4]. It is important to differentiate between benign and malignant GCT due to the difference in the treatment protocol. Features suggesting malignancy in GCT are the presence of necrosis, high mitotic activity, high Ki-67 index, spindling of tumor cells, vesicular nuclei, and muscle invasion [5]. No features suggestive of malignancy noted in our case. The

differential diagnosis of the GCT of the bladder is urothelial tumors, sarcoma, leiomyoma, and paraganglioma.

Immunohistochemistry is very useful to characterize and to differentiate benign from malignant GCT and other benign and malignant lesions of the bladder. Tumor cells generally stain positive for S-100 protein, calretinin, the alpha subunit of inhibin, laminin, human leukocyte antigen-DR, and various myelin protein, whereas they usually stain negative for neuroendocrine (neuron-specific enolase, chromogranin A, and synaptophysin), sarcoma (desmin and vimentin), and epithelial (cytokeratin, Cam 5.2, and AE/A13) markers [4,6].

Due to a predominant benign course of GCTs, bladder-preserving treatment by complete transurethral resection or partial cystectomy with clear margin is sufficient [7]. In case of malignant GCT, a more aggressive radical cystectomy with lymph node dissection is required. It is essential to differentiate these benign tumors from malignant lesions of the bladder to avoid unnecessary radical management.

CONCLUSION

GCTs of the bladder are rare and should be considered in the differential diagnosis of solid tumors of the bladder. Immunohistochemistry is helpful in the diagnosis of GCT. We emphasize that the urologist and the pathologist should be aware of GCT in the differential diagnosis of solid bladder tumor.

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