



Granular Cell Tumour of the Urinary Bladder

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Abstract

With only 18 cases reported in the literature, granular cell tumors (GCTs) are extremely rare neoplasms of the bladder. We present a case of GCT of urinary bladder in a 50 year old female with clinical, radiological and histomorphological features suggestive of granular cell tumour of the bladder.

Introduction

Only 18 cases of GCTs of bladder origin have been reported to date and only 2 of them were malignant. GCT are believed to be a usually benign tumour, but they are occasionally mistaken for malignant tumours because of their presentation as solid tumours with ill defined margins and ulcerated surface.

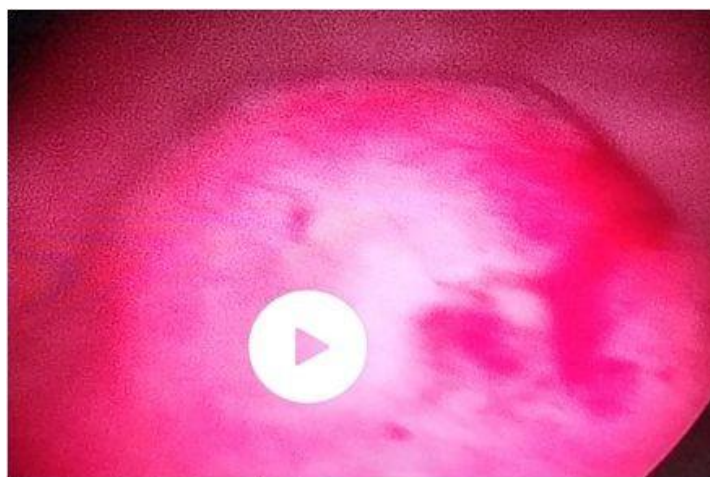
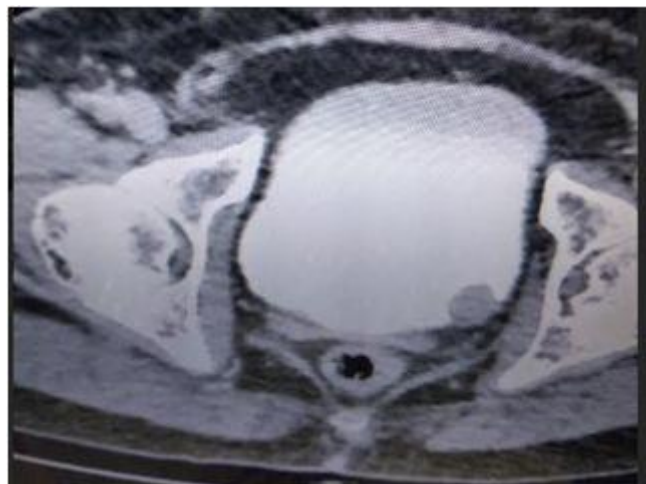
Case Report

50-year-old woman without any comorbidity presented with an increased frequency of micturition and single episode of hematuria. No past significant history. Blood tests, urinalysis, urine cultures, ultrasonography (USG), CT abdomen/pelvis and cystoscopic examinations were performed.

Urinalysis demonstrated no abnormality. Urine cytology was negative for malignant cells. Urine culture was negative for bacterial growth. Ultrasound of bladder was suggestive of intra luminal smooth surfaced Iso echoic lesion of size 22*19*12 mm along left posterolateral wall, lateral to left VUJ. Contrast enhanced computerized tomographic (CT) images showed a

moderately enhancing growth 19*17*15mm, on posterolateral wall of bladder located laterally and inferior to left VUJ. Cystoscopic examination revealed a non polypoid nodular mass with smooth mucosa overlying it that was approximately 2 cm * 1.5cm in diameter localized on Left lateral wall approximately 2cm away from left vuj and protruding into the lumen. The tumor was removed by transurethral resection.

On histology, the neoplasm was 2cm × 1.5cm, soft, and grey white. Microscopically, the tumour was composed of large polygonal cells with monomorphic small vesicular nuclei, abundant slightly basophilic granular cytoplasm. No definite invasion into underlying muscularis propria. There were no features of malignancy such as atypical mitosis/necrosis/nuclear pleomorphism seen. On Immunohistochemical staining tumour cells are positive for S-100, vimentin and weakly for chromogranin. These are negative for Sox10 and synaptophysin, Cytokeratin (CK) and CD 68. The Ki-67 proliferative index was 3-5%. These data supported the diagnosis of Granular cell tumour.



Discussion

Granular cell tumors are rare, usually benign neoplasms that most frequently originate from the skin and oral cavity. The disease entity was first described by Abrikossoff in 1926 as a myoblastic tumor associated with striated muscle of the tongue. However, GCTs in other locations (vulva, breast, larynx, esophagus, anal canal, extrahepatic bile ducts, gallbladder, heart, lacrimal gland, lung, parotid gland, tongue and thyroid) have also been reported.^[3-8] GCTs show a mild predominance in females and are most often seen between the ages of 30–60 years. The bladder is a rare location. There are very few cases of granular cell tumor of the urinary bladder reported in the literature^[2-5]

Granular cell tumor was described as myoblastoma on the assumption that it was of myocyte origin.^[8] but today, on the basis of immunohistochemical and electron microscope patterns, GCTs are considered to be of neural origin and to be derived from Schwann cells. Morphologically, GCTs of all anatomic sites share the same histological findings as polygonal cells with abundant granular cytoplasm containing fine eosinophilic granules and scattered larger droplets.

There are 18 reported cases of GCTs of the urinary bladder in the literature, and only 2 of them are malignant.^[4,12] It is important to make a differentiation between benign and malignant granular cell tumors because of the difference in their treatment protocols. Malignancy features in GCT include necrosis, high mitotic activity, high

Ki-67 index, spindling tumor cells, vesicles with large nucleoli and muscle invasion. These features in combination are useful for diagnosis. Lack of these morphological findings helped us to exclude malignancy in our case.

Immunohistochemistry is very useful for the differentiation of GCT from the more common benign and malignant lesions like malakoplakia, carcinomas or sarcomas. Tumor cells are stained positively with S-100 protein, calretinin, the alpha subunit of inhibin, laminin, HLA-DR, various myelin proteins, neuron-specific enolase (NSE), CD56, epithelial membrane antigen (EMA), synaptophysin, CD68 and SOX10. The tumor cells are negative for epithelial markers

Most of the previously reported cases of benign GCTs of the urinary bladder underwent bladder preservation treatment and were shown to be free of disease recurrence. Only two cases of a benign GCT showed local recurrence, and both were cured by the same modality. Therefore, conservative surgical treatment such as transurethral resection alone or partial cystectomy appears to offer an adequate means of local control for benign tumors, and more radical resections are not required^[4]. In the case of a malignant GCT, more aggressive surgical treatment should be required. Only two cases of the malignant type of GCT of the bladder have been reported. Because of the predominantly benign course of the GCTs, conservative surgical treatment by transurethral resection taking care to

leave clear surgical margins is sufficient and more radical resections are not required.^[2-4,1]

In conclusion, GCT is an unusual lesion of the urinary bladder. To differentiate this benign tumor from more common urothelial lesions, careful histomorphological examination and appropriate immunohistochemical studies are necessary. Immunohistochemistry is very helpful for diagnosis. Although the bladder is a rare location for GCT, it should be considered in the differential diagnosis of nodular lesions of the bladder, and clinicians and pathologists need to be aware of GCT in the differential diagnosis.

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