

## Granular Cell Tumour of the Urinary Bladder in a Pregnant Woman: A Case Report

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### ABSTRACT

Granular cell tumour (GCT) is a very rare lesion and, rarer still within the urinary bladder. Histologically, granular cell tumours consist of polygonal cells with highly granular cytoplasm with fine eosinophilic granules. Most of these lesions are benign, although a few malignant ones have been reported. A 23-years-old woman who was 26 weeks pregnant, was incidentally diagnosed to have a bladder tumour on abdominal ultrasonography examination. Transurethral resection of the bladder tumour was done, and the specimen sent for histopathological examination which revealed an unremarkable urothelium with sheets of neoplastic cells within the sub-epithelial layer. The cells were large with centrally placed nuclei with mild pleomorphism and abundant eosinophilic granular cytoplasm. Transurethral resection is adequate treatment for most cases, in contrast to a more radical approach, if a malignant tumour is diagnosed. Immuno- histochemical staining has provided a helpful tool to distinguish granular cell tumours from other entities, but nevertheless the diagnosis still remains challenging.

### KEYWORDS

Granular cell tumor; Urinary bladder; Immunohistochemistry

### INTRODUCTION

Granular cell tumour (GCT) is a very rare lesion that was initially described by Abrikossoff in 1926 [1]. Most of these tumors are benign and were initially believed to be of muscular origin but, in the light of the recent histopathological findings, they are considered to be originating from Schwann cells [2]. Although these tumors

are commonly found in the head and neck region, they very rarely do affect the urinary bladder [3]. Around 28 cases - 30 cases of GCT of the urinary bladder have been reported in the literature [4]. The majority of GCTs of the bladder were benign and only 3 cases of malignant GCT have been reported [5].

Histologically, granular cell tumours consist of polygonal cells with highly granular cytoplasm with fine eosinophilic

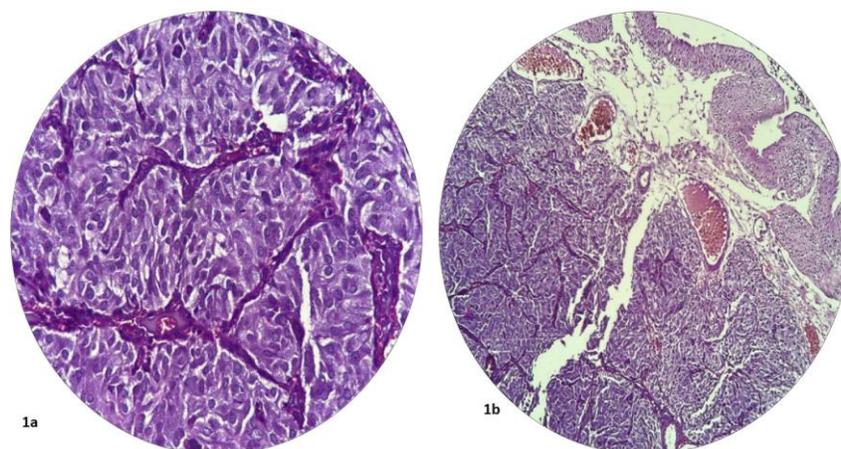
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granules and scattered larger droplets [6]. There often exists a secondary epithelial hyperplasia if the tumour appears near an epithelial surface [7]. It may be hard to distinguish these lesions from the other common malignant and benign tumours or lesions derived from macrophages such as malakoplakia. Immunohistochemical staining has been particularly useful to differentiate these tumours and malignant entities such as sarcomas and carcinomas. It is well known that GCTs stain positive for the neural crest derived S-100-protein, both cytoplasmic and nuclear [8]. Furthermore, they frequently reveal positive staining for calretinin, alpha subunit of inhibin, HLA-DR, laminin and various myelin proteins whereas they react negative when exposed to epithelial (cytokeratine), sarcoma (desmin, vimentin) and neuroendocrine (neuron-specific enolase, chromogranin A and synaptophysin) markers [9]. In this

paper we present a case of GCT of the urinary bladder in a 26 weeks pregnant woman.

### **CASE REPORT**

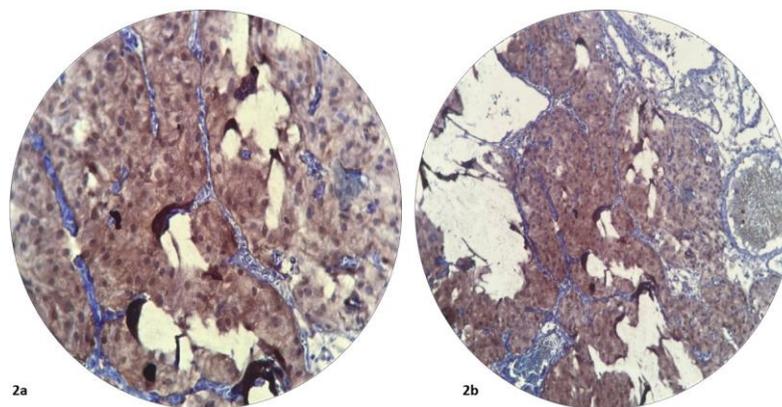
A 23-years-old woman was referred to the Uro-oncological services of the hospital with a diagnosis of bladder tumour. The patient was 26 weeks pregnant and asymptomatic for the lesion. The lesion was diagnosed on abdominal ultrasonography examination which was part of the routine antenatal evaluation. On ultrasonography (USG) the lesion was isoechoic of the size of 2.4 cm × 2.0 cm × 2.4 cm situated at the left superior-posterior region of the bladder. There was no evidence of calcification seen on USG. Ultrasonography also revealed an intrauterine pregnancy, with a single live fetus of gestational age of 26 weeks (Figure 1).



**Figure 1:** **A)** H & E 100x showing normal urothelial lining with neoplastic cells in the sub epithelium. **B)** The neoplastic cells are large with centrally placed regular nuclei and have abundant granular cytoplasm. These are arranged in sheets and nests separated by thin capillaries.

No other imaging was performed as the woman was pregnant. The patient was counselled regarding the need for cystoscopy and biopsy. Under general anaesthesia, the patient underwent cystoscopy and transurethral resection of the bladder lesion. Histopathological examination of the resected specimen revealed unremarkable urothelium. The sub-epithelium showed sheets of neoplastic cells, which was in papillary pattern at places. The cells were large with

centrally placed nuclei with mild pleomorphism and abundant eosinophilic granular cytoplasm. A diagnosis of granular cell tumour was made. The patient delivered 12 weeks later and reported to our hospital 8 weeks after delivery. A repeat abdominal USG showed no evidence of the growth. Urinary cytology was unremarkable. The patient has been on close follow-up since then.



**Figure 2:** A) 100x S-100 IHC stain. B) 200x showing cytoplasmic S-100 positivity.

## **DISCUSSION**

Granular cell tumours though rare are mostly seen in the upper part of the human body, with approximately two thirds presenting themselves in the head and neck region [10]. GCT of the urinary bladder shows a slight predominance in females, most often occurring between the ages of 30 years to 60 years [11]. The most common presentation of this lesion is haematuria which may lead to a severe drop in haemoglobin levels. Other less common symptoms include dysuria, incontinence and abdominal pain. Our patient was asymptomatic. Only about 28 cases - 30 cases of GCT of urinary bladder have been reported and most of them were benign. A few malignant cases have been reported too [5]. It is very important to make a

differentiation between benign and malignant granular cell tumors as the treatment protocols differ. The features of malignancy in GCT include necrosis, high mitotic activity, high Ki-67 index, spindling of tumor cells, vesicles with large nucleoli and muscle invasion [12].

## **CONCLUSION**

In conclusion GCT of the urinary bladder is a very rare bladder tumour with most of them being benign. Immunohistochemistry can differentiate these tumors from other similar tumors. Transurethral resection of the tumour is adequate treatment in benign lesions.

## **CONFLICT OF INTEREST**

The authors declare conflict of interest as none.

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