

**CASE REPORT****GIANT CELL VARIANT OF UROTHELIAL CARCINOMA-A RARE ENTITY****Sulakshana M S<sup>1\*</sup>, Priyanka Agasimani<sup>2</sup>, Natarajan M<sup>3</sup>, Dayananda S Biligi<sup>4</sup>, Raghupathi A R<sup>5</sup>**

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**\*Corresponding Author****Sulakshana M S****Abstract**

The giant cell variant of urothelial carcinoma is characterized by the presence of epithelial tumor giant cells exhibiting marked nuclear atypia, along with a component of conventional urothelial carcinoma, and was initially identified as an undifferentiated urothelial carcinoma. This is a rare variant of bladder cancer recognized by the current World Health Organization classification of urologic tumors. This variant has an aggressive behaviour and poor outcome. We report a rare case of giant cell variant of urothelial carcinoma in a 70 year old male patient.

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**INTRODUCTION**

The giant cell variant of urothelial carcinoma is a very rare entity with aggressive behaviour and poor prognosis. It is a high grade urothelial carcinoma, which appears undifferentiated, resembling giant cell carcinoma of the lung. Patients usually present with advanced stage cancer (>pT3), and 75% have had lymph node metastases at initial diagnoses (Cheng L, Bostwick G, 2011). Patients are usually elderly males who present with hematuria, dysuria, flank pain and renal colic.

**CASE REPORT**

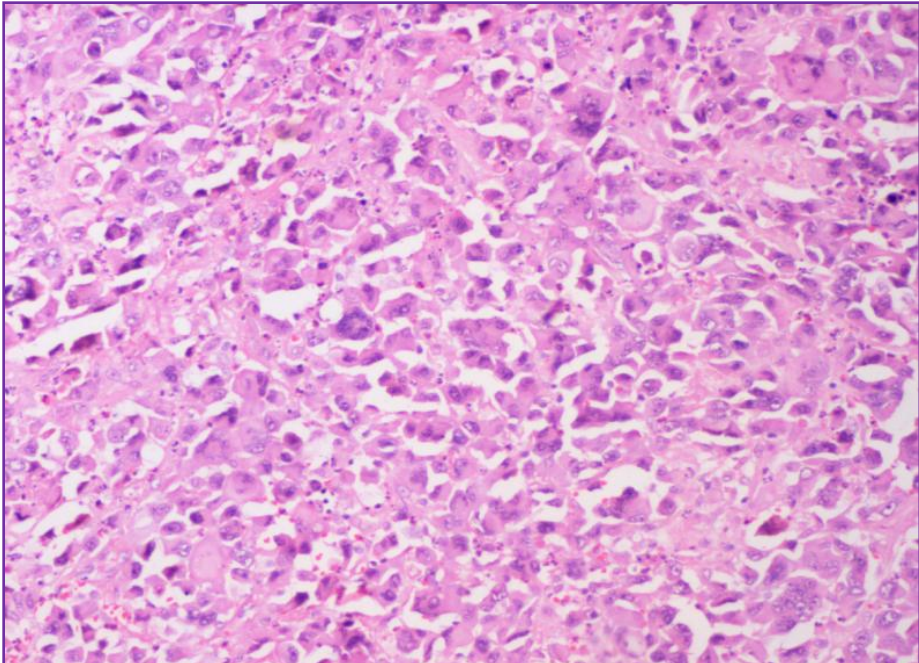
A 70 year old male patient presented with hematuria, burning micturition and poor control of urine since one month. CT abdomen revealed a heterogenous soft tissue density mass lesion involving the anterosuperior wall and trigone of the urinary bladder causing bilateral moderate hydronephrosis and extending into perivesical space-neoplastic T3N0M0-Stage III. A radical cystectomy with ileal conduit was done and the specimen was sent to the pathology department.

On gross examination, a proliferative tumor measuring 6x5x4 cm was seen arising from the left lateral wall of the bladder. The tumor was seen invading the anterior and superior walls. The tumor appeared polypoidal and fragile with cut surface showing grey white areas. Grossly, the posterior wall of the bladder appeared free of tumor. The attached left ureter measured 6 cm in length and the right ureter measured 7 cm in length. Also sent separately were right and left external iliac lymph nodes.

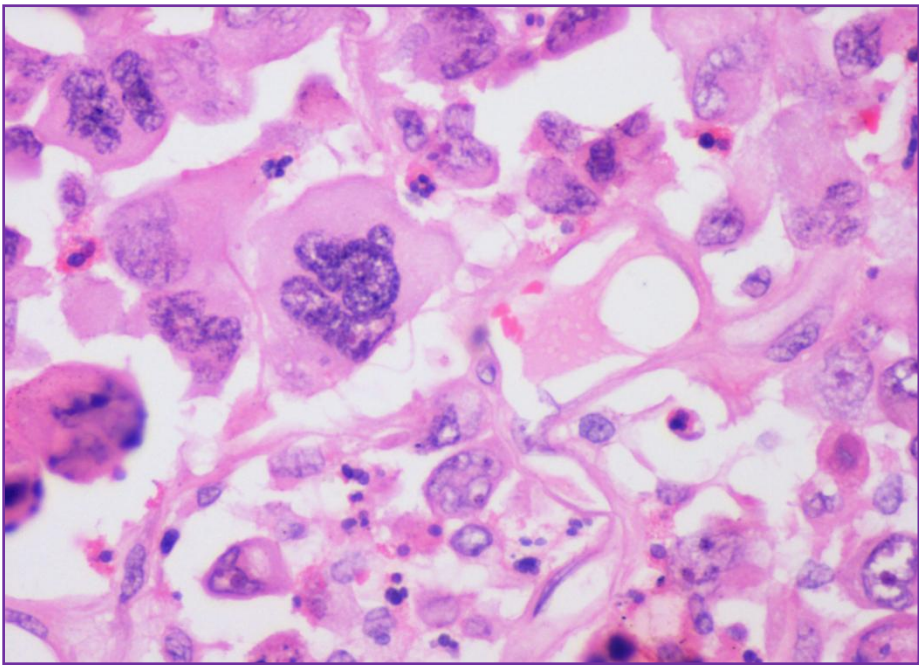
Microscopy showed a highly cellular tumor consisting of tumor cells arranged in nests and sheets exhibiting marked pleomorphism. Individual tumor cells showed moderate amount of eosinophilic cytoplasm with hyperchromatic nuclei and prominent nucleoli. Multinucleate giant cells and bizzare giant cells were also noted. Areas of necrosis were seen. The mitotic rate was 4/10hpf. Muscle invasion and lymphovascular emboli were noted. Areas of papillary urothelial carcinoma were also seen. All the nine excised lymph node showed tumor deposits. The ureters were free of tumor. Based on these findings, a diagnosis of Giant cell variant of Urothelial carcinoma was made.



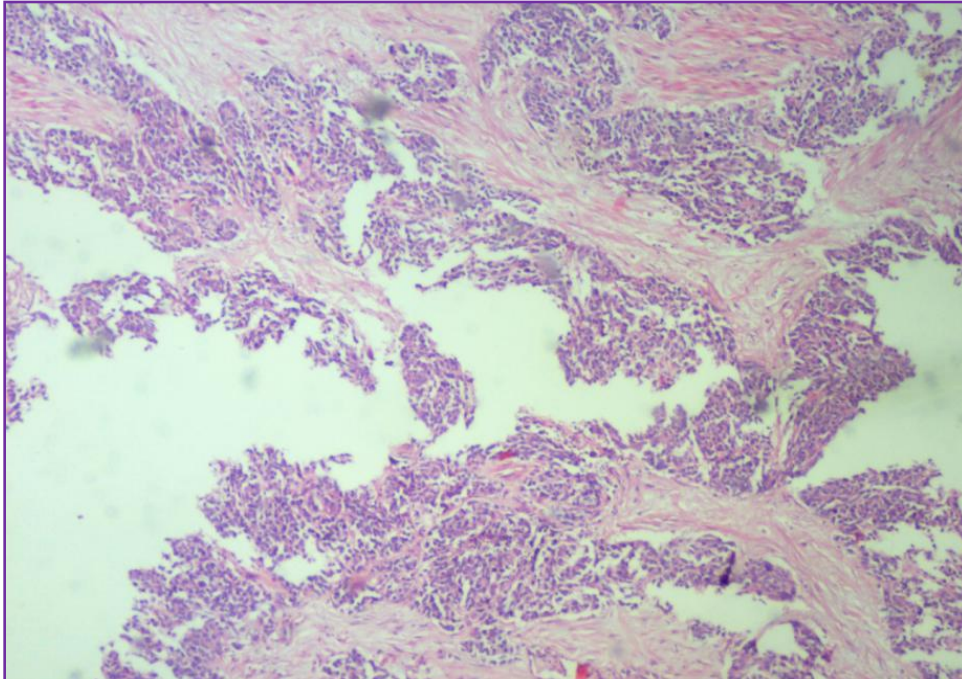
**Fig 1:** Cystectomy specimen showing a proliferating mass-tumor arising from the lateral wall and invading the anterior and superior walls.



**Fig 2:** Urothelial carcinoma showing pleomorphic tumor cells and multinucleate giant cells (H&E, 10X)



**Fig 3:** Urothelial carcinoma showing bizarre and multinucleate giant cells (H&E, 40X)



**Fig 4:** Photomicrograph showing areas of Conventional Urothelial carcinoma (H&E, 10X)

## DISCUSSION

The giant cell variant of urothelial carcinoma is characterized by the presence of epithelial tumor giant cells exhibiting marked nuclear atypia, along with a component of conventional urothelial carcinoma, and was initially identified as an undifferentiated urothelial carcinoma. These tumors bear great resemblance to the giant cell tumors of the lung. Eventually it has become clear that these tumor giant cells are distinct from other giant cells described within other bladder tumors, including osteoclast-like giant cells occasionally seen in reactive lesions, syncytiotrophoblasts, sarcomatoid variant of urothelial carcinoma, and giant cells of the so-called giant cell tumor of bladder, which is indistinguishable from the giant cell tumor of bone and lacks urothelial differentiation (Zhai Q J, Black J, 2007).

Microscopically, the giant cell variant of urothelial carcinoma shows marked nuclear pleomorphism, typically with multiple nuclei, and consists of cohesive cells with abundant eosinophilic or amphophilic cytoplasm. A component of conventional urothelial carcinoma is present by definition. Malignant giant cells, when present in great numbers, portend a poor prognosis, similar to that associated with giant cell carcinoma of the lung (Mikuz G, 2007).

Immunohistochemistry is helpful in differentiating this variant from other tumors. Immunohistochemical staining characteristics of conventional urothelial carcinoma are retained, and the tumor giant cells show positivity for

epithelial markers, including cytokeratin and epithelial membrane antigen. Vimentin is positive as well. The vimentin and keratin positivity help distinguish giant cell urothelial carcinoma from similar mesenchymal lesions. Also, these cells do not stain positively with tartrate-resistant acid phosphatase, which is a characteristic of osteoclastic giant cells. Positivity may occasionally be seen for HCG (Zhai Q J, Black J, 2007).

This variant may be misdiagnosed as secondary carcinoma or sarcoma in limited samples, a pitfall of paramount importance in its clinical management (Bostwick G, Cheng L, 2014).

The other differential diagnosis would include metastatic giant cell carcinoma (i.e. lung), melanoma, and even direct extension from a prostatic giant cell carcinoma (which can be an extremely difficult differential diagnosis in the bladder neck or in a TUR specimen). The presence of a background conventional urothelial carcinoma can aid in confirming the impression of a bladder primary (Lopez B, Blanca A et al, 2009).

The true incidence of giant cell urothelial carcinoma is not known, as it is a very rare entity. The significance of diagnosing the giant cell variant of urothelial carcinoma is that it is associated with a poor prognosis (Lopez A, Sauter G et al, 2014).

## ACKNOWLEDGEMENTS

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