

# Large Cell Neuroendocrine Carcinoma of Urinary Bladder – A Rare Case Report

Deepa Aggarwal<sup>1</sup>, Mohammad Suhel<sup>2</sup>, Sudhir Singh<sup>3</sup>

<sup>1</sup>Junior Resident, Department of Radiation Oncology, King George's Medical University, Lucknow, India

<sup>2</sup>Senior Resident, Department of Radiation Oncology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India

<sup>3</sup>Associate Professor, Department of Radiation Oncology, King George's Medical University, Lucknow, India

**Abstract:** A rare case of large cell neuroendocrine carcinoma of the urinary bladder. The index patient is 53 years old male smoker presented to us with painless hematuria following which cystoscopy and TURBT was done and on histopathology and IHC it came out to be large cell neuroendocrine carcinoma of the urinary bladder. Patient was investigated for metastasis and found to have enlarge internal iliac lymph node. This is a very rare variety of urinary bladder carcinoma with high potential for metastatic spread so this variety of urinary bladder cancer should be treated aggressively

**Keywords:** Anisokaryosis, Neuroendocrine carcinoma, Chromogranin, Synaptophysin

## 1. Introduction

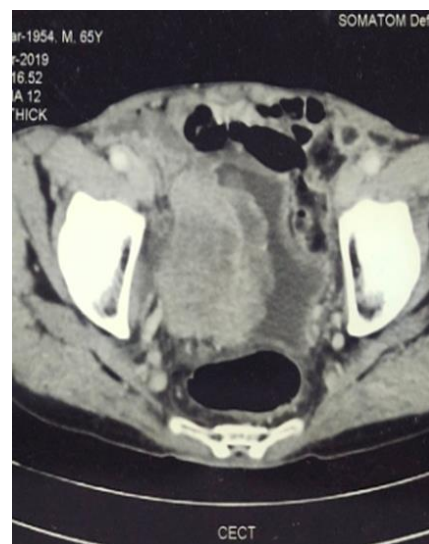
Neuroendocrine carcinoma of the urinary bladder is a rare entity, accounting less than 1% of urinary bladder malignancies [1]. The vast majority of the neuroendocrine carcinomas of the urinary bladder is represented by small cell neuroendocrine carcinoma while just few cases of large cell neuroendocrine carcinoma (LCNEC) have been reported [1]-[4]. LCNEC was first described by Travis in the lung but cases of LCNEC were reported in other organs like uterus, thymus, stomach, bile duct, larynx, parotid gland, prostate, kidney, and cervix. We present this case due to its rarity, paucity of literature and also to discuss the importance of IHC in urinary bladder carcinoma.

## 2. Case report

A 53 years old man presented with painless haematuria in April 2019 and evaluated by CECT abdomen which revealed a 82x59x65 mm heterogeneously enhancing mass involving the right lateral wall of the urinary bladder with extra vesical extension with stranding of adjacent perivesical fat planes and infiltration of right lower ureter leading to ipsilateral mild hydronephrosis with abutment of sigmoid colon superiorly with focal loss of intervening fat planes and multiple heterogeneously enhancing LN are seen in right iliac region, largest measuring 25x17 mm in size. The tumor was partially resected transurethrally. Microscopically, the tumor was composed of fibromuscular tissue covered focally by urothelium and infiltrated by the tumor. The tumor comprises

of a monotonous population of round to ovoid cells presenting minimal anisokaryosis, having coarse granular chromatin and scant cytoplasm. The tumor is seen to infiltrate the deep muscle along with large areas of necrosis and showed high mitotic rate (Figure 1).

Immuno-histochemical analysis demonstrated that tumor cells were diffusely positive for NSE (Figure 2), synaptophysin (Figure 3), focally positive for chromogranin (Figure 4) and pan-cytokeratin (Figure 5) and negative for vimentin and S-100. The proliferation index, evaluated with Ki-67 was >85% (Figure 6). Patient referred to radiotherapy department and received haemostatic radiotherapy 20Gy in 5# after that bleeding stopped and general condition of the patient got improved following which patient has received 3 cycles of cisplatin and Etoposide and is doing well. Patient has gained 5kg weight in 5 months. His Hb is 12.0 gm/dl TLC is 6700, platelet count is 2.5 lakh/mm<sup>3</sup>, Creatinine is 1.09 mg/dl.



82x59x65 mm size heterogeneously enhancing mass involving the right lateral wall of the urinary bladder with extra vesical extension with stranding of adjacent perivesical fat planes and infiltration of right lower ureter.

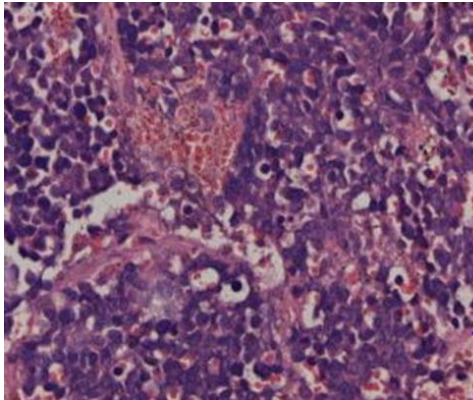


Fig. 1. Muscle invasion by tumor and areas of necrosis

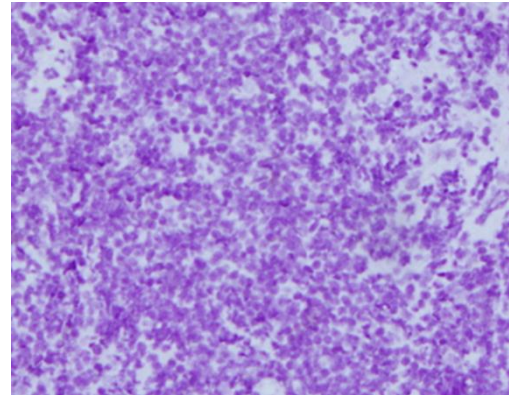


Fig. 5. Pan CK cytoplasmic dot positivity

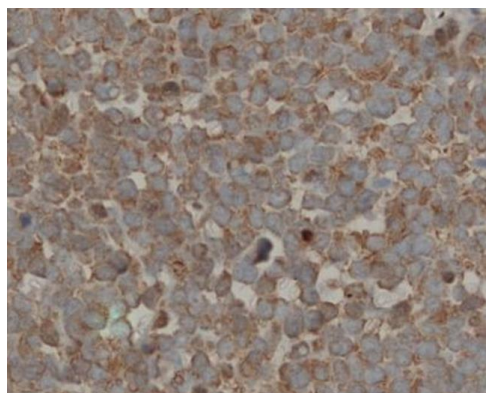


Fig. 2. Neuron specific enolase cytoplasmic positivity

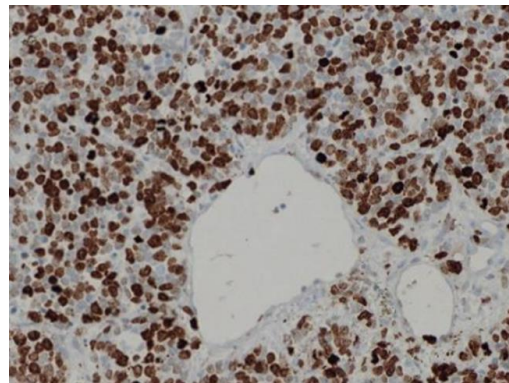


Fig. 6. Ki-67 Nuclear positivity (85%)

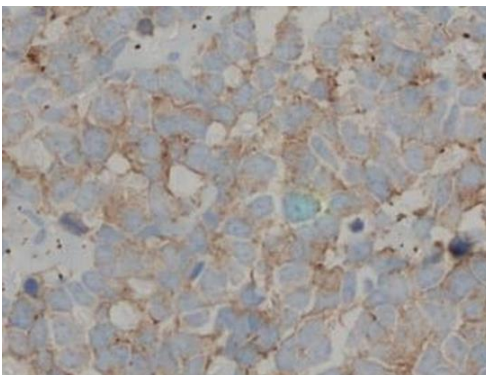


Fig. 3. Synaptophysin cytoplasmic positivity

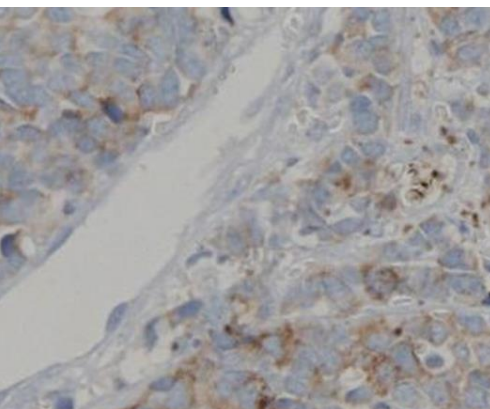


Fig. 4. Chromogranin, A cytoplasmic weakly positive

### 3. Discussion

Large cell neuroendocrine carcinoma of urinary bladder is a histological entity. we report this case as there are very few cases of this histology that has been reported till date. Hence abundant reports and studies are needed to know about the proper treatment strategy. Such cases must be investigated thoroughly, treated aggressively because they have a high propensity to metastasize. Till date there is no standardized treatment for this variety of urinary bladder carcinoma due to its rarity and paucity of studies.

### 4. Conclusion

Patient had been assessed by uro-surgeon since initial presentation and was deemed in operable and send to radiotherapy department. we have started palliative radiotherapy (in the form of external beam radiotherapy 20Gy in 5 # for hematuria) and chemotherapy (cisplatin and etoposide) following which bleeding stopped. The most important reason to report this case is rarity of this histology and importance of aggressive treatment in view of high potential for metastatic disease.

### References

- [1] Akamatsu S, Kanamaru S, Ishihara M, Sana T, Soeda A, Hashimoto K: Primary large cell neuroendocrine carcinoma of the urinary bladder. *Int J Urol* 2008, 15:1080-83.

- [2] Alijo Serrano F, Sanchez-Mora N, Arranz JA, Hernandez C, Alvarez-Fernandez E: Large cell and small cell neuroendocrine bladder carcinoma. *A M J Clin Pathol* 2007, 128:733–39.
- [3] Evans AJ, Al-Maghrabi J, Tsihlias J, Lajoie G, Sweet JM, Chapman WB: Primary large cell neuroendocrine carcinoma of the urinary bladder. *Arch Pathol Lab Med* 2002, 126:1229–32.
- [4] Bertocchini A, Marchiori D, Cricca A, Garofalo M, Giovannini C, Manferrari F, Gerace TG, Perneti R, Martorana G: Neuroendocrine carcinoma of the urinary bladder: case report and review of the literature. *Anticancer Res* 2008, 28:1369–72.