



UROTHELIAL CARCINOMA WITH SQUAMOUS DIFFERENTIATION – A RARE CASE WITH REVIEW OF LITERATURE

Pathology

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ABSTRACT

Urothelial Carcinoma shows divergent differentiation which results in distinct morphological patterns. Squamous differentiation is one of them which is associated with bad prognosis because of its aggressive nature and resistance to radiotherapy, chemotherapy and immunotherapy. Also, it is known for local recurrence. Squamous differentiation in urothelial carcinoma is associated with advanced stage of tumor as well as lymph node metastasis. We present a case of urothelial carcinoma with squamous differentiation to highlight its rare occurrence and its poor prognosis.

KEYWORDS

Urothelial carcinoma, Squamous differentiation, Poor prognosis

INTRODUCTION:

Urothelial carcinomas have distinct morphological features which are called as histological variants of urothelial carcinoma. Knowing these different types is essential as they may cause difficulty in diagnosis and also reflect the prognosis of the tumor. These different microscopic types are urothelial carcinomas with squamous differentiation, glandular differentiation, trophoblastic differentiation, sarcomatoid urothelial carcinoma, nested variant, plasmacytoid carcinoma, lymphoepithelial carcinoma and giant cell carcinoma^(1,2). Squamous differentiation is seen in 20% of urothelial carcinoma of bladder⁽³⁾. Urothelial carcinoma with squamous differentiation is associated with poor prognosis, hence its identification with histopathological examination is important. We report a case of urothelial carcinoma with squamous differentiation to highlight its rare occurrence and poor prognosis.

CASE REPORT:

A 53 year old male patient presented with burning micturition, dribbling of urine and nocturia since six months. USG abdomen and pelvis as well as computed tomography of kidney, ureters and bladder with urography revealed moderately distended urinary bladder with thick wall. There was irregular, lobulated mass lesion measuring 5.4 x 4.7 x 4 cm arising from base of bladder suggestive of neoplastic etiology. Transurethral resection of bladder tumor was done along with superficial and deep muscle biopsy and the specimens were received for histopathological examination.

Histopathological examination revealed irregular, grey white to grey brown, soft to firm tissue pieces weighing 8 grams in trans urethral resection of bladder chips. Superficial and deep muscle biopsy specimen revealed multiple tissue bits measuring 2.5 x 0.6 x 0.5 cm and 0.5 x 0.3 x 0.3 cm, which was predominantly necrotic tissue.

Microscopic picture showed a tumor with papillary configuration lined by transitional epithelium showing disorderedly arranged neoplastic cells with high degree of nuclear atypia, extensive tumor necrosis and secondary inflammation. The tumor showed squamous differentiation. The squamous component was 20% and revealed keratin pearls as well as squamous cell carcinoma in the form of tumor nests and trabeculae (Figure 1,2,3).

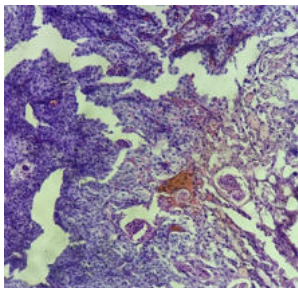


Fig 1: Microscopy- High grade urothelial carcinoma with squamous differentiation as dysplastic squamous cells and keratin pearls (100x H & E).

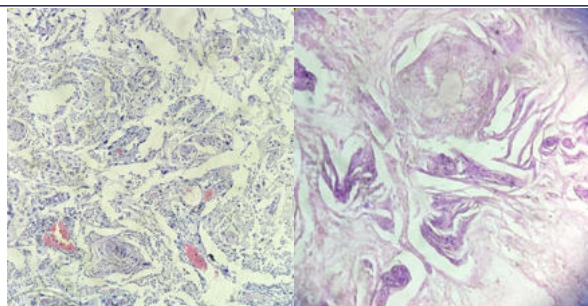


Fig 2,3- Microscopy- Neoplastic squamous cells in nests with keratin pearls (100x H & E).

DISCUSSION:

Urothelial carcinoma is more commonly seen in male patients with male to female ratio of 3.3:1. Percentage of women having urothelial carcinoma with squamous component is significantly higher than the group with urothelial carcinoma, which suggests that squamous differentiation is more common in women⁽⁴⁾. This also reflects the higher rate of muscle invasive urothelial carcinoma in women.⁽⁵⁾

Squamous differentiation in urothelial carcinoma is the presence of squamous component in the form of keratinous squamous epithelial cells or intercellular bridges. Multivariate analysis of various studies has revealed that presence of squamous differentiation in urothelial carcinoma has high tendency for recurrence and decreased rate of survival.^(6,7)

The squamous differentiation in urothelial carcinoma can be related to the use of tobacco and bilharziasis⁽⁸⁾. There was no such history in our case. Recently it is noted that squamous differentiation develops with retinoid deficiency which strongly recommends that retinoid signaling pathways are important in the etiology of squamous differentiation in urothelial carcinoma^(9,10). Guma et al has stated that Human Papilloma Virus infection is associated with these tumors⁽¹¹⁾.

Microscopically squamous differentiation is seen in the form of nests or polygonal cells which show nuclear atypia, dyskeratosis, keratin pearls or intercellular bridges. Squamous component can be in-situ or invasive⁽⁸⁾. In our case there was invasive squamous component. Careful light microscopic assessment of entire tissue is the best way to diagnose squamous differentiation. Sometimes it is difficult to differentiate squamous component from conventional urothelial carcinomas. In such cases immunohistochemistry may be helpful. L1 and cytokeratin 14 are positive in squamous areas⁽⁸⁾. MAC 387, desmoglein-3 and TRIM 29 could be a novel panel for squamous differentiation in bladder carcinoma cases⁽¹²⁾. Alberto et al studied 113 cases of urothelial carcinomas and reported that squamous differentiation was independent prognostic factor in survival of these cases⁽¹³⁾. Squamous differentiation in urothelial carcinoma is more aggressive due to its resistance to radiotherapy, chemotherapy and

immunotherapy⁽⁶⁾, 60-70% of these cases are muscle invasive bladder carcinomas^(14,15). Similar observation was noted in our case. Also, these cases present with advanced stage and nodal metastasis⁽¹⁶⁾. There is rapid course of the disease in these cases within the first two years of cystectomy. However, extent of squamous differentiation may not correlate with prognosis. These patients have same treatment protocol as those with urothelial carcinoma⁽¹⁷⁾.

CONCLUSION:

Urothelial carcinoma with squamous differentiation has aggressive behaviour and is associated with poor prognosis. Histopathological examination plays an important role in diagnosis.

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