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Pure Squamous Cell Carcinoma Of The Urinary Bladder: A Rare Case

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Abstract

Pure squamous cell carcinomas (SCC) of the urinary bladder are rare tumors. They are usually seen in patients with history of bilharziasis, prolonged catheterization, stone disease or recurrent urinary tract infections. We report a case of squamous cell carcinoma in a patient with no history of bilharziasis or any other known pre-disposing factors. Early diagnosis and treatment are important in the prognosis and survival of a patient with this disease.

Keywords: Pure squamous cell carcinoma, Urinary bladder, Non-bilharzial

Introduction

Most common histology of carcinoma urinary bladder is urothelial carcinoma or transitional cell carcinoma. But pure squamous cell carcinomas (SCC) of the urinary bladder are rare cancers. SCC of urinary bladder is usually seen in patients with history of bilharziasis, prolonged catheterization, stone disease or recurrent urinary tract infections. But here we are reporting a case of squamous cell carcinoma urinary bladder in a patient with no history of bilharziasis or any other known pre-disposing factors.

Case Report

A 67 years old gentleman presented to the outpatient clinic with vague lower abdominal pain since the past 3 months. He was a well-controlled hypertensive with no other significant history. Clinical examination findings were within normal limits. His blood investigations were within normal limits, apart from serum creatinine which was 1.47 mg/dl.

An abdominal ultrasound (USG) was surprisingly suggestive of a hetero-echoic polypoidal mass of 6.5 x 6 cm in the right lateral wall of his urinary bladder with internal vascularity and associated right upstream hydroureteronephrosis. Whilst he was being evaluated for the bladder mass, he developed urosepsis with right sided pyelonephritis- which required an inpatient stay and treatment with IV antibiotics and a right percutaneous nephrostomy (PCN).

Subsequently- a CT scan of his abdomen was done, which confirmed the ultrasound findings of a heterogeneous polypoidal bladder mass of 5.6x3.5x3.7cm in the right lateral wall extending up to right VUJ and associated with perivesical fat stranding. Later he underwent a transurethral resection of bladder tumour (TURBT) with the histopathology (HPR) returning as a moderately differentiated, muscle-invasive keratinizing squamous cell carcinoma. In view of a pure squamous cell carcinoma, he underwent an upfront

surgery in the form of radical cysto-prostatectomy and ileal conduit urinary diversion.

Post-operative period was uneventful and he was discharged in a stable condition on post-operative day 9. The final HPR was a moderately differentiated invasive keratinising squamous cell carcinoma, measuring 7.0 cm in maximum dimension invading the perivesical fat, pT3b N0 (Fig 1,2)

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Figure 1: Histology showing squamous cell carcinoma

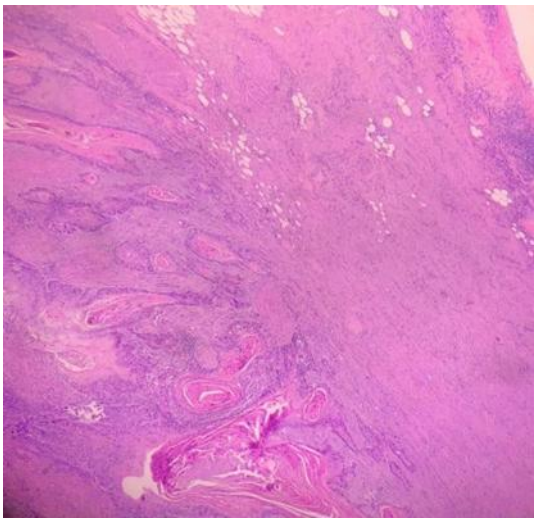
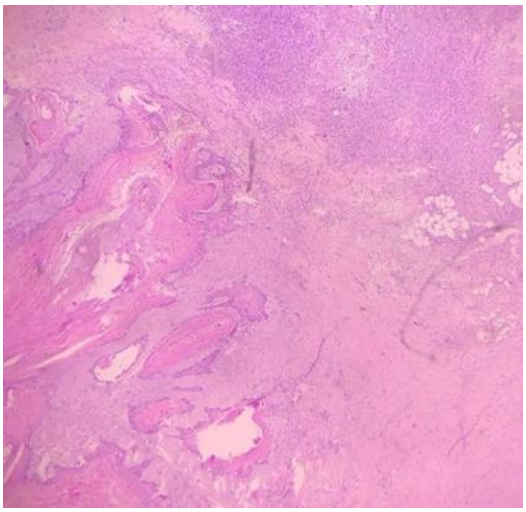


Figure 2: Shows Tumour infiltrating perivesical fat tissue



Discussion

Pure squamous cell carcinomas (SCC) of the urinary bladder are rare tumors occurring in only 2-5% of all urinary bladder malignancies[1]. SCC can be broadly divided in to non- bilharzial and bilharzial bladder SCC; the two subtypes differing in their aetiopathogenesis and clinical features. The Non-bilharzial variety occurs most often in the seventh decade with a slight male predominance. The principal predisposing factor is prolonged indwelling urethral catheterization in patients with spinal cord injury and the main symptom is haematuria[2].

Approximately 90% of all epithelial tumours of the bladder are transitional cell tumours. SCC, on the other hand are broadly divided in to non-bilharzial and bilharzial bladder SCC; the two subtypes differing in their aetiopathogenesis and clinical features. Infection with the parasite Schistosoma haematobium, also known as bilharziasis is an important risk factor in parts of the world where the

organism is endemic. It is responsible for approximately 50% of all bladder cancer where it is endemic and is most common in the 7th decade of life. Risk factors for non-bilharzial SCC of the bladder are those situations that commonly cause a process that results from repeated urothelial injury or chronic bladder irritation called keratinizing squamous metaplasia, viz. recurrent urinary tract infections, bladder calculi, radiation exposure, chronic indwelling catheters, neurogenic bladder, cigarette smoking, foreign bodies, prolonged exposure to cyclophosphamide, exstrophy of urinary bladder etc[3]

Most of the patients with SCC of the bladder present with haematuria. Other less common presenting symptoms include storage bladder symptoms (frequency, urgency and nocturia), urinary obstruction and weight loss. Unlike transitional cell carcinoma which are mostly papillary and non-ulcerating, most squamous cell carcinoma of the bladder are sessile, nodular, ulcerating and infiltrating, and are graded into well, moderate or poorly (high grade) differentiated varieties.

The exact pathophysiologic mechanism of the transformation from keratinizing squamous metaplasia to SCC is not clearly understood; however, it is said to be mediated by the epithelial growth factor receptor (EGFR) a tyrosine kinase that transduces signals controlling cell proliferation. Additionally, an increased EGFR receptor activity has been reported in squamous carcinomas associated to previous squamous metaplasia of the bladder[4]. Also, cyclo-oxygenase-2 (COX-2) is markedly expressed in all SCCs suggesting that chronic inflammation stimulates the production of COX-2 protein and that an increased COX-2 level in turn induces the development of SCC of the bladder affecting many biological features of this tissue including apoptosis, cell adhesion, angiogenesis and invasiveness[5].

Both, the bilharzial and non-bilharzial cases of SCC of the bladder typically show a background of squamous metaplasia, and in many cases SCC in situ may be present, which provides indirect evidence that the invasive SCC is in fact a primary bladder squamous carcinoma. On histopathology, most of the squamous cell carcinomas are of high grade with muscle invasion. For final diagnosis of the pure squamous cell carcinoma thorough sampling should be performed to exclude the presence of an invasive high-grade urothelial carcinoma component. If the later component is found then it is to be labelled as a high-grade urothelial carcinoma with squamous differentiation[6]

Treatment of localised disease is local resection (for histopathology) followed by preferably radical cystectomy with urinary diversion, since this tumour is usually resistant to chemotherapy and radiotherapy[7]. 5-year survival in bilharzial SCC is 50-60% and in the non- bilharzial type is 33-48%. Death is usually due to loco-regional progression in the form of ureteral or bladder neck obstruction with subsequent renal failure[8].

Conclusion

Squamous cell carcinomas of the bladder are a rare entity. Early diagnosis with an accurate histopathology are mandatory for appropriate and timely treatment and a decent overall prognosis.

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