International Journal of Clinical and Diagnostic Pathology

ISSN (P): 2617-7226
ISSN (E): 2617-7234
www.patholjournal.com
2020; 3(1): 144-147
Received: 07-11-2019
Accepted: 09-12-2019

Dr. Sai Sridevi Krishna M
Assistant Professor, K.A.P. Viswanatham Government Medical College, Tiruchirapalli, Tamil Nadu, India

Corresponding Author:
Dr. Sai Sridevi Krishna M
Assistant Professor, K.A.P. Viswanatham Government Medical College, Tiruchirapalli, Tamil Nadu, India

An insight into non transitional cell carcinoma of Bladder: A six year retrospective study

Dr. Sai Sridevi Krishna M

DOI: https://doi.org/10.33545/pathol.2020.v3.i1c.166

Abstract
Non transitional cell carcinomas comprise 5 – 10% of all malignant bladder tumours. A retrospective study was done in 50 cases of TUR-BT (transurethral resection of bladder tumour) and radical cystectomy specimens for a period of 6 years at a tertiary care hospital. The various details analysed were the presenting complaints, age, sex, cystoscopy findings, radiological findings, urine cytology findings, gross morphology and microscopic findings. Non transitional cell carcinomas reported were squamous cell carcinoma, adenocarcinoma (papillary, mucinous and clear cell types) and sarcomatoid carcinoma.

Keywords: Urinary bladder, carcinomas, non-transitional cell type

Introduction
Of all malignant bladder tumours, 90 – 95% are transitional cell carcinomas and the remaining 5 – 10% are composed of mesenchymal and/or epithelial tumors of other histological types [1]. Non transitional cell carcinomas can be classified according to WHO as

- Squamous neoplasms – Squamous cell carcinoma, verrucous carcinoma, squamous cell papilloma.
- Glandular neoplasms – Adenocarcinoma (enteric, mucinous, signet-ring cell, clear cell), villous adenoma.
- Secondary tumors.

The bladder urothelium retains the potential to undergo metaplastic changes either towards squamous metaplasia and leukoplakia or towards mucinous and glandular epithelium with progressive development of bud like projections into the submucosa resulting in cystitis cystica.
The commonest causes of metaplastic change are chronic irritation and infection. The precancerous lesions that play a role in development of bladder cancers are squamous metaplasia, leukoplakia, intestinal metaplasia and cystitis cystica [1]. The clinical presentation is usually characterized by gross hematuria and irritative voiding symptoms. The diagnosed cases require aggressive treatment with radical surgery combined with adjuvant or neoadjuvant chemotherapy [2].

Materials and Methods
A retrospective study was conducted in our department and a total of 396 bladder specimens were analysed on records for a period of 6 years. Out of which, 346 were transitional cell carcinoma and the remaining 50 were non transitional cell carcinomas. The cases excluded were transitional cell carcinoma and metastatic carcinoma. A total of 50 specimens of which 36 were TUR-BT (transurethral resection of bladder tumour) and 14 were radical cystectomy specimens. The various details analysed were the presenting complaints, age, sex, cystoscopy findings, radiological findings, urine cytology findings, gross morphology and microscopic findings. The study done in paraffin embedded blocks and the slides were stained using hematoxylin and eosin.

Results
The common presenting symptoms were hematuria, frequency of micturition, dysuria, Urgency and mass suprapubic region.

Out of the 396 cases, 346 cases (87%) constituted the transitional cell carcinoma and the remaining 50 cases were non transitional cell carcinoma [Table.1]. The non-transitional cell carcinomas were found to be common in the 4th and 5th decade with a mean age of 55 years. It was two times more common in the males compared to the females. Squamous cell carcinoma had a predilection for males with a ratio of 2:1 and adenocarcinoma was found in the ratio of 4:1.

Table 1: Total number of cases studied

S. No	Bladder carcinoma	Total	Percent
1.	Transitional cell carcinoma	346	87%
2.	Non – transitional cell carcinoma	50	13%

The various gross morphological patterns found in cystoscopy and radiology were papilliferous, exophytic proliferative, broad based, nodular and thickening of bladder wall. The common locations of tumor included the lateral wall (45.1%), trigone (23.5%), dome (17.4%), anterior wall (12%) and posterior wall (2%). Vesical calculi were found in 3 cases of squamous cell carcinoma and 1 case of adenocarcinoma. A case of paraplegia was found associated with squamous cell carcinoma. Urine cytology was found to be positive in six cases of squamous cell carcinoma.

The non-transitional cell carcinomas reported were squamous cell carcinoma (62%), adenocarcinoma (34%) and sarcomatoid carcinoma (4%) [Table.2]. The squamous cell carcinoma [Fig3] were further subdivided into papillary (1), poorly (7), moderately (12) and well (11) differentiated types. Papillary (4) [Fig 4], clear cell (2) [Fig 5] and mucinous (1) [Fig 6] were the various types found in adenocarcinomas. Two cases of sarcomatoid carcinoma were reported [Fig 7]. Immunohistochemistry was done in one case of adenocarcinoma which was CK positive.

Table 2: Types of Non transitional cell carcinomas reported in our study

S. No.	Non Transitional Cell Carcinomas		Total	Percent
1.	Squamous cell carcinoma	Papillary (1)	31	62%
		Poorly differentiated (7)		
		Moderately differentiated (12)		
		Well differentiated (11)		
2.	Adenocarcinoma	Papillary (4)	17	34%
		Mucinous (1)		
		Clear cell (2)		
3.	Sarcomatoid carcinoma		2	4%

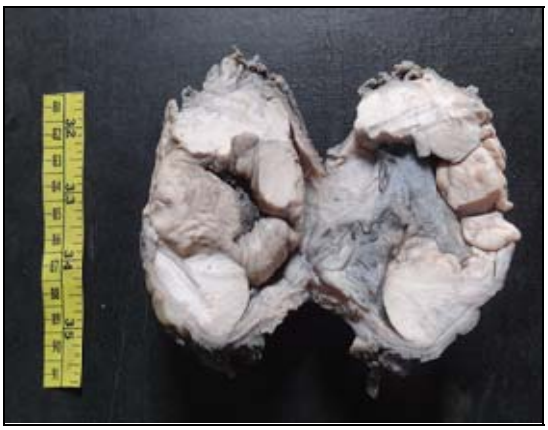

Fig 1: Adenocarcinoma bladder.

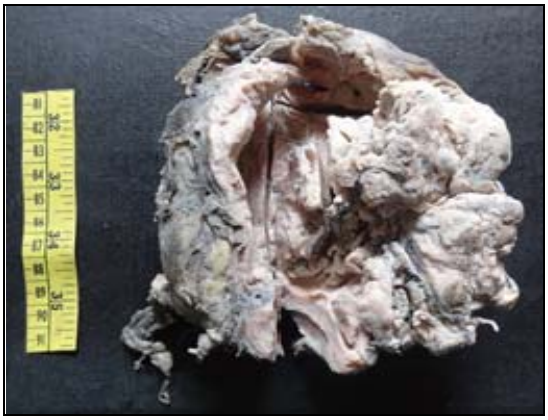

Fig 2: Sarcomatoid carcinoma bladder.

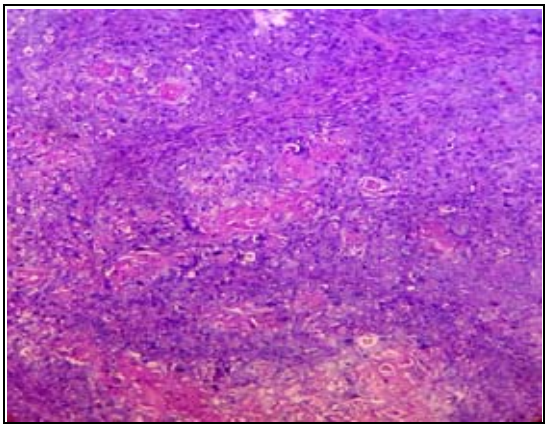

Fig 3: Squamous cell carcinoma.

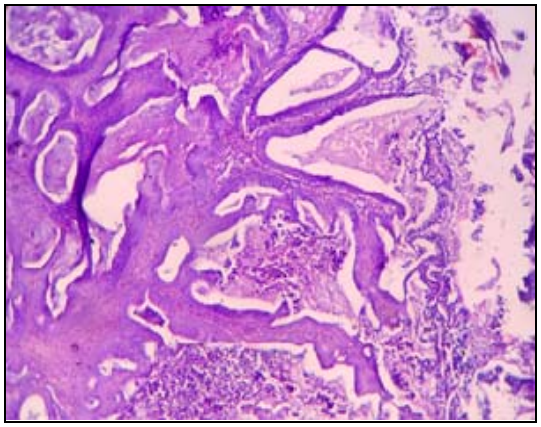

Fig 4: Adenocarcinoma papillary type.

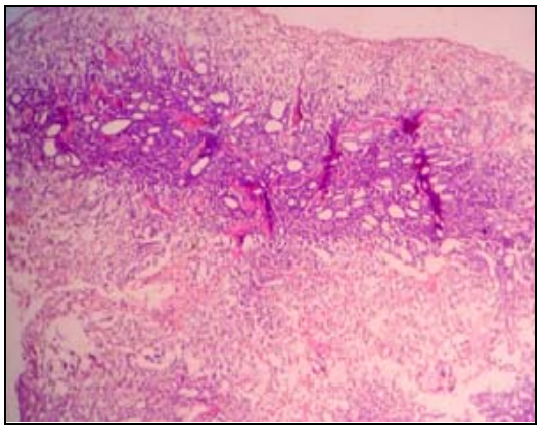

Fig 5: Clear cell adenocarcinoma.

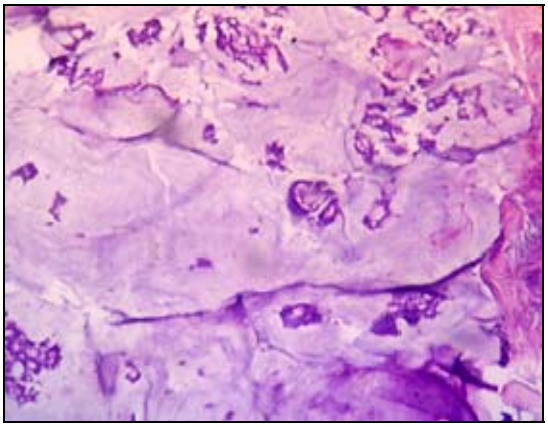

Fig 6: Mucinous adenocarcinoma.

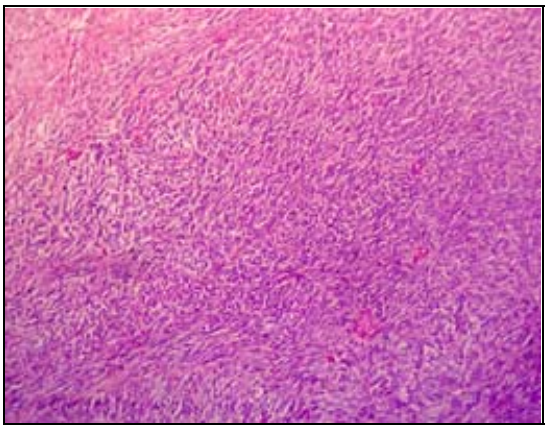

Fig 7: Sarcomatoid carcinoma

Discussion

Squamous cell carcinoma

These tumors comprised 5% of all bladder tumours [4]. They arise on a background of chronic cystitis with marked squamous metaplasia. They are associated with exstrophy, defunctionalized bladder, chronic infection, lithiasis, chronic indwelling catheters and prolonged medication with cyclophosphamide. Schistosomiasis is a well-known risk factor for this tumor. Grossly they are large, ulcerated and necrotic. Microscopically they are more poorly differentiated and have nearly always invaded the muscle at the time of diagnosis. They are positive for HMWCK and p63. Prognosis is very poor regardless of the degree of differentiation. 5 yr survival is 37% with submucosal or muscular invasion. A high frequency of chromosome 9p allelic loss and CDKN2 tumor suppressor gene alterations have been reported [3]. Three cases of squamous cell carcinoma were associated with calculi in our study.

Adenocarcinoma

These tumors comprised 2% of all bladder tumors [4]. The sequential changes in the surface transitional epithelium initiated by chronic inflammation are from Brunn's islands to cystitis glandularis and cystic and finally to adenocarcinoma. They are usually located in the trigone area. Others are known to arise in bladders with exstrophy, in diverticula or at the dome of the bladder from the urachal remnants. Grossly they are fungating masses that ulcerate the mucosa and invade the bladder wall. The surface of the mucin producing tumors are covered with thick slimy gelatinous material. Microscopically they show a wide range of glandular differentiation and deep invasion into the muscle is the rule. Immunohistochemical markers help to differentiate from adenocarcinoma of other organs. CK7 positivity and membranous staining of β catenin help to differentiate from colorectal adenocarcinoma which are CK20 positive. These are negative for OC125 in comparison to ovarian and cervical adenocarcinoma. A negative immunostaining with vimentin help in differentiating from endometrial adenocarcinoma. A focal positivity for mucin and MUC5AC apomucin is not unusual in urothelial carcinoma probably as a result of the embryologic origin of bladder from the pleuripotent tissues of the cloacal endoderm and the mesodermal wolffian ducts [5]. Prognosis is poor with a 5 year survival rate of 18%. One case of adenocarcinoma was found associated with vesical calculi in our study.

Clear cell (Mesonephric, Mesonephroid type)

This is a type of adenocarcinoma arising usually from the urethra. They are usually papillary and is characterized microscopically by a mixture of tubular glands, papillae, cysts and areas of solid growth [6, 7]. The important features are the presence of hobnail cells and abundant cytoplasmic glycogen. Microscopically there are clear cells with marked pleomorphism, mitotic activity and necrosis. Immunohistochemical markers positive are MIB1, p53 and PAX8.

Sarcomatoid carcinoma (spindle cell, met aplastic)

This is a high grade neoplasm of bladder having malignant epithelial component coexisting with areas having a sarcoma-like appearance. They have a nonspecific spindle cell or pleomorphic look (sometimes admixed with osteoclast- like giant cells) or may exhibit specific features of mesenchymal differentiation such as rhadomyosarcoma, chondrosarcoma, osteosarcoma, liposarcoma or malignant fibrous histiocytoma. Grossly they are large and polypoid. They are equivalent to their common counterparts located in upper aerodigestive tract. These tumors usually occur in elderly males with death rate of 50%. Metastasis to regional lymph node or distally is commonly seen [8].

Conclusion

Non transitional cell carcinomas are uncommon and constitute a heterogeneous group. With a few exceptions, they have an aggressive biological behavior. A better knowledge of the biological behavior of these tumors and the prognostic factors will help in the improvement of their management for which an accurate histopathological interpretation is absolutely essential.

References

1. Andrea Manunta, Sebastien Vincendeau, George Kiriakou, Bernard Lobel, François Guillé. Non-Transitional Cell Bladder Carcinomas. BJU International. 2005; 95:497-502.
2. Roy *et al.*: Primary bladder adenocarcinoma versus metastatic colorectal adenocarcinoma: a persisting diagnostic challenge. Diagnostic Pathology. 2012; 7:151.
3. Shokeir AA. Squamous cell carcinoma of the bladder: pathology, diagnosis and treatment. BJU Int. 2004; 93(2):216-20.

4. Nelson G. Ordonez, Juan Rosai. Urinary tract, Surgical Pathology, 10th edition, 1266-70.
5. Palmero Martí JL, Queipo Zaragozá JA, Bonillo García MA, Budía Alba A, Vera Sempere FJ, Jiménez Cruz JF *et al*. Mucinous adenocarcinoma of the bladder. Actas Urol Esp. 2003; 27(4):274-80.
6. Sethi S, Dhawan S, Chopra P. Clear cell adenocarcinoma of urinary bladder: A case report and review. Urol Ann. 2011; 3:151-4.
7. Lu *et al*. Primary clear cell adenocarcinoma of the bladder with recurrence: a case report and literature review. World Journal of Surgical Oncology. 2012; 10:33.
8. Singh NG, Mannan AR, Kahvic M, Sara YA. Sarcomatoid carcinoma of the urinary bladder: A report of two cases. Indian J Pathol Microbiol. 2011; 54:400-1.