

# Bladder Carcinoma - A Clinical and Pathological Correlation

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## ABSTRACT

**Introduction:** Bladder carcinoma is the 2<sup>nd</sup> most common tumour of the urinary system. Treatment of choice for muscle invasive bladder carcinoma is radical cystectomy. Aim of this study was to see the correlation between pathological staging of TURBT specimen and subsequent pathological staging of specimen of Radical cystectomy and its impact on overall prognosis.

**Material and methods:** This is a retrospective study involving 44 patients over a period of 4 years in KPC medical college.

**Result:** Out of 44 patients, pathological downstaging was done in 14.97%, upstaging in 25.33% and same staging in 59.64%.

**Conclusion:** Pathological upstaging has an adverse effect in overall prognosis of patients undergoing radical cystectomy and helps in patient's treatment planning and prognosis.

**Keyword:** Bladder Carcinoma, Downstaging, Samestaging, Upstaging, Transurethral Resection, Radical Cystectomy

## INTRODUCTION

Bladder carcinoma is the second commonest tumour of urogenital system.<sup>1</sup> Cystoscopy with transurethral resection of bladder tumor (TURBT) is the mainstay of diagnosis and initial management of carcinoma bladder. Muscle invasive tumors are managed by Radical Cystectomy. Ten years survival rate of patients with pathologically diagnosed organ confined, node negative disease is 56% compared with non organ confined, node negative disease which is 27%.<sup>2,3</sup> It has been reported that pathological upstaging represents a poor prognostic feature independent of final pathological stage.<sup>4</sup> Aim of this study was to see the correlation between initial clinical and pathological staging after TURBT and final pathological staging of bladder tumour.

## MATERIAL AND METHODS

A retrospective evaluation of bladder carcinoma cases of patients who underwent radical cystectomy in KPC medical college between July 2013 to June 2017 over a period of 4 years was done. The clinical staging with Clinical staging was done according to pathological report of transurethral resection specimen, bimanual examination, chest X-Ray, liver function test, CT scan of abdomen and pelvis. Tumour was staged from stage 0 to stage 4. After surgical resection (radical cystectomy) the specimen were processed according to standard procedure. Finally, haematoxylin and eosin stained slides were prepared and examined blindly by three pathologists and correlated with each other (peer review). Muscularis propria invasion in doubtful cases were verified with IHC panel comprising Vimentin, Desmin and SMA. Both clinicopathological and final radical cystectomy

specimens were staged according to American joint committee on cancer staging manual, fifth edition.<sup>5</sup>

## RESULT

Total number of cases undergoing radical cystectomy in the period of 4 years were 44.

Mean age of patient was 64.4 years (range 42-86 years.). Out of 44 cases, 8 were women (18.2%) and 36 were men (81.8%). Correlation between clinical and pathological staging.

Pathological upstaging was done in 25% cases, downstaging amounted to 20.45%. 54.54% cases were clinically and pathologically same staged (table-1). Most pathological upstaging was done in Ta and T3 stage, 33.3% and 26.6% respectively. Most downstaging was done in T3 and T4 stage with 20% and 40% respectively. Records of postoperative follow up revealed that patients who had upstaging in the Radical cystectomy specimen had worse prognosis than those who were same staged or downstaged.

## DISCUSSION

Proper staging of bladder carcinoma is important for patient's treatment plan, prognosis and counselling. This study was done to find out the discrepancy between clinical staging and pathological staging of cancer.

In 1952, Marshall reported discrepancy between clinical staging and pathological staging.<sup>6</sup> From that day, till now, only marginal improvement has occurred in clinical and pathological reporting. This is given in the table below.

In our study upstaging was reported in 25% cases. This may be due to better pathological evaluation such as use of uniform grading system, uniform terminology and more than one pathologist's opinion taken in account in case of doubt. Some upstaging may be due to high grade tumor (aggressive tumour) that progressed to higher stage in the interval between transurethral resection to cystectomy.

According to Hollenberk et al<sup>4</sup> upstaging of tumour is considered to be of poor prognostic outcome. These candidates can be used for adjuvant chemotherapy. Sometimes clinicians

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Clinical	No. of patients	Pathological Downstaging No. of pts (%)	Same staging No. of Pts (%)	Pathological upstaging No. of pts (%)
Tis	4	1 (25%)	2 (50%)	1 (25%)
T1	5	1(20%)	3(60%)	1(20%)
T2	12	2(16.6%)	7(58.3%)	3(25%)
T3	15	3(20%)	8(53.3%)	4(26.6%)
T4	5	2(40%)	2(40%)	1(20%)

**Table-1: Pathological staging**

Author	Years	No.of pts	Clinical stage	Downstaging	Same staging	Upstaging
Amling et al <sup>7</sup>	1969-1990	220	Ta-T1	49(22.3%)	97(44.1%)	74(33.6%)
Freeman et al <sup>8</sup>	1971-1989	182	Ta-T1	-	-	47(26%)
Pagano et al <sup>9</sup>	1979-1987	261	Tis-T2	80(31%)	116(44%)	65(25%)
Soloway et al <sup>10</sup>	1979-1991	127	Tis-T2	-	-	55(43.3%)
Cheng et al <sup>11</sup>	1980-1984	2015	Ta-T2	4(4.8%)	21(20%)	80(76.2%)
Shrarit et al <sup>12</sup>	184-2003	778	Ta-T4	172(22%)	277(35%.6)	329(43.3%)
Bianco et al <sup>13</sup>	1990-2000	66	T	5(7.6%)	44(66.7%)	17(25.57%)
Dutta el al <sup>14</sup>	1995-99	78	Ta-T,	26(33.3%)	21(26.9%)	31(40%)
Hollenbeck et al <sup>4</sup>	97-98	78	Ta-T2	21(26.9%)	19(24.4%)	38(48.7%)
Svatek et al <sup>15</sup>	79-08	3393	Ta-T4	621(18.3%)	1082(32.1%)	1683(49.6%)
Present study	2013-2017	44	Ta-T4	9(20.45%)	24(54.5%)	11(25%)

**Table-2: Comparison of the present study with previous studies**

are reluctant for neoadjuvant chemotherapy in patients undergoing radical cystectomy because of concern that a good number of patients who do not benefit from neoadjuvant chemotherapy and may be treated unnecessarily,<sup>5-15</sup> so a risk-adapted approach is often taken where high risk patients such as clinical stage  $\geq$  T3, presence of hydronephrosis, node metastasis, lymphovascular invasion are selected for neoadjuvant chemotherapy.<sup>16</sup>

Downstaging of tumour was mainly due to inappropriate identification of muscularis propria versus muscularis mucosae in transurethral resection. Invasion upto muscularis mucosae was sometimes thought to be of invasion upto muscularis propria leading to clinical high grade tumour, which later on histopathological section review was downstaged.

Sometimes it is difficult to diagnose severe dysplasia from carcinoma in situ in transurethral resection. This is a key pitfall leading to downgrading of tumour. Similar study was done by Sharkey and Shorody.

Sometimes clinical understaging is due to inadequate transurethral resection sampling. In these cases, a repeat transurethral resection 2-6 weeks after initial resection may result in correct tumour stage identification in 26-83% cases (Table-2).<sup>17-19</sup>

#### Limitation of this study

This was a retrospective study in a single centre with a small subset of patients. Long term follow up is awaited.

#### CONCLUSION

Treatment of bladder neoplasm frequently involve radical cystectomy and urinary diversion. So it is necessary to make careful decision regarding tumor staging with the support of pathological data. This reduces the significant risk of morbidity in the patients. Reviewing pathological material

in patients of urothelial carcinoma spares many patients from further extensive surgery.

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