

### **Pathological Grading and Staging of Urothelial Bladder Tumour in Planning Treatment**

---

Bladder cancer is one of the common human cancer and constitutes 6% in male and 2% in female among all cancer<sup>1</sup>. Incidence of bladder cancer is quite high in Bangladesh though exact prevalence of the condition is not yet established by any broad base study.

It is well known that accurate pathological grading and staging is essential for proper diagnosis, treatment and follow up of carcinoma bladder patients. Grade and stage of tumours are important prognostic factors for the likelihood of recurrence, risks of progression to invasive cancer and ultimate survival<sup>2</sup>. Grading of the tumour actually indicates the "aggressive potential" of the tumour ie how fast it is likely to grow and spread<sup>3,4</sup>.

Both the surgeon and pathologist have equal responsibilities in getting a proper report. Urologist should take deep biopsy including bladder muscle with less charring and burn, should supply multiple biopsy specimens in suspected cases of multifocal tumour and level the samples properly in 10% formaline solution. Biopsy from prostatic fossa and bladder neck should be included in multifocal high grade tumours<sup>5</sup>. Absence of muscle in a biopsy specimen is inadequate for reporting and the report is incomplete. Because involvement of bladder muscle and non-involvement matters much in treatment planning, prognosis and life expectancy of patient. If necessary repeat TUR biopsy should be taken to clarify the status of bladder muscle involvement by the tumour. There is significant individual variations in the accuracy of assigning clinical stage and grade by the pathologist.<sup>6</sup> About 40% patients who under went radical cystectomy were understaged<sup>6</sup>. Detrusor muscle bundles in the lamina propria and muscularis mucosae may be misinterpreted as muscle invasion by the tumour. Lymphatic and / or vascular invasion in T1 G3 tumour demands a serious view regarding radical treatment ie radical cystectomy<sup>7</sup>. Other bladder tumours i.e primary adenocarcinoma and squamous cell carcinoma are not responsive to intravasical therapy are also a candidate for radical cystectomy.

There are various grading systems for carcinoma bladder and most have poor inter observer reproducibility. Most tumours are graded as intermediate category. The WHO (World Health Organisation) classification 1973 graded tumours into benign papilloma and three grades of transitional cell carcinoma (grade-I,II,III)<sup>8</sup>. There are limitations of WHO grading system due to lack of clear cut definition of various grades and lack of useful informations provided to the pathologist regarding specific histological criteria for reporting. A modified and better grading system proposed by WHO/ISUP (International Society of Urologic Pathology) in 2004 which provided detail description of various grades depending on specific cytologic and architectural criteria<sup>9,10</sup>. Cytologic features in (WHO / ISUP) system includes nuclear size, shape, chromatin content, nucleoli, number of mitosis and umbrella cells. This system basically has classified grading into two groups viz low grade and high grade and omitted intermediate grade (WHO grade-II). It bears a close co-relation with recurrence and progress of the disease and helps in proper treatment planning more effectively. EUA (European Urological Association) guide line on bladder cancer has divided bladder cancer into non-muscle invasive and muscle invasive cancer due to its behaviour and progression and has recommended different strategy of

treatment protocol for individual groups<sup>10</sup>. Muscle invasive tumours are already advanced and mostly beyond local control and needs aggressive radical treatment. This group has poor survival rate than non-muscle invasive group. Emphasis has been given to detect bladder cancer early ie in non-muscle invasive stage to treat this group with curative intent. High grade tumours are more aggressive and likely to progress into muscle invasive high stage tumours. High grade superficialTCC (Transitional Cell Carcinoma) of urinary bladder (Ta, Tis, T1) (Non muscle invasive tumour) remains a difficult problem to treat even in specialized centers. Recurrence rate of T1G3 tumours treated by TUR without adjuvant treatment is 50% in five years and progression rate of 25% to 50%<sup>11</sup>. The accurate identification of grade and stage and carefully organized management plan is of paramount importance to achieve durable disease control and long term survival. The article written by Shamsunnaher etal in this issue on staging and grading of bladder tumour with histopathological correlation emphasized the importance of proper grading and staging of bladder tumours for proper management and better outcome.

**Prof. Maj. Gen. (Retd) Md. Ali Akbar**

Head of the Department of Urology,  
Holy Family Redcrescent Medical College.

**References :**

1. Kirkali Z, Theresa chan, Murugesan monoharah, Ferran Algaba, Christer Busch, Linangchung, et al. Bladder Cancer: Epidemiology , Staging and diagnosis, *Jurol.* 2005; 66: 4-34.
2. Jewett HJ, Strong GH. Infiltrative Carcinoma of the bladder: Relation of depth of penetration of the bladder wall to incidence of local extension and metastasis. *Jurol.* 1946; 55: 366.
3. Cote RJ, ChaterjeeSJ. Non-muscle invasive bladder cancer. *CAMPBELL-WALSH UROLOGY*, 10th edn. Philadelphia: Elsevier Saunders; (1999). P. 2337.
4. ReznikoffCA, et al. *SemOncol.* 1996; 23:571.
5. Matzkin H, Soloway MS, Hardeman S. Transitional cell carcinoma of prostate. *Jurol.*1991; 146:1207.
6. Cheng SS, Carkson MS. Radical Cystectomy for bladder cancer: The case for early intervention. *UrolClin North Am.* 2005; 147-155.
7. Dinney CP et al. Relationship among cystectomy, microvassel density and prognosis in stage T1 transitional cell carcinoma of the bladder. *J Urol.* 1998;160: 1285-1290.
8. Oosterlink W, Guidelines of bladder cancer. *Eur Urol.* 2011; 59(4): 584-594.
9. Who- ISUP Consensus classification. *Am J Pathol.* 1998; 22: 1435.
10. WHO-ISUP reviewed classification. *Pathol, Int.* 2010; 60:1.
11. Salam MA, Best practice for the high risk non-muscle invasive urinary bladder cancer. *J Bangladesh Coll Phys Surg.* 2013; 31(2): 61-63.