

Clinically Significant Tumor Histology in Suspected Primary Bladder Cancer: Is Every Transurethral Resection Necessary?

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Introduction and Objectives

Transurethral resection of bladder tumor (TURBT) is the standard for diagnosis and initial treatment of non-muscle-invasive bladder cancer (NMIBC) a disease with highly variable presentation. The aim of this study was to evaluate the rate of malignancy in patients undergoing elective TURBT for suspected BC.

Materials and Methods

A retrospective analysis of 217 patients undergoing primary TURBT for BC suspicion at our tertiary care center between January and June 2023 was performed. Key parameters included preoperative macroscopic cystoscopy findings, intraoperative macroscopic findings, and pathologic tumor characteristics from the TURBT specimen. The primary outcome was the detection rate of malignancy. Secondary outcomes included the correlation of the interobserver congruence on preoperative and TURBT findings. Multivariate logistic regression was performed to identify significant predictors of malignancy.

Results

Of 217 patients, 35% (n=77) had no malignancy in the TURBT specimen. Interobserver congruence was observed in only 80.6% of cases. Papillary findings in the initial cystoscopy (Odds ratio (OR) = 5.6, 95% Confidence interval (CI) = 2.18-14.52, p < 0.001), age (OR = 1.057, 95%CI = 1.02-1.1 p = 0.002), interobserver congruence on preoperative and TURBT findings (p < 0.001, OR = 99.3, 95%CI = 10.9-903.9), and tumor size (OR = 1.9, 95%CI = 1.33-2.71, p < 0.001) were significant predictors for malignancy. Histological findings shows figure I.

Table I. Baseline patient characteristics of the total cohort (n= 217).

	Total cohort (n=217)	No malignancy (n=77)	Malignancy (n=140)	p-value
Gender (m, f; n (%))	164 (76), 53 (24)	54 (70.1), 23 (29.9)	123 (78), 34 (22)	0.19
Age (mean ± SD)	70.5 (± 12)	67.2 (± 14)	72.3 (± 10.9)	0.02
BMI (mean ± SD)	27.2 (± 5)	27.1 (± 5.7)	27.3 (± 4.5)	0.47
Tobacco smoking, n (%)	65 (30)	19 (24.7)	46 (32.9)	0.22
Packyears (mean ± SD)	18.2 (± 29.9)	20 (± 31.6)	15 (± 26.5)	0.51
ASA (%)				0.13
1	13 (6)	8 (10.4)	5 (3.6)	
2	70 (32.3)	24 (31.2)	46 (32.9)	
3	99 (45.6)	37 (48.1)	62 (44.3)	
4	33 (15.2)	8 (10.4)	25 (17.9)	
History of BC (%)	64 (29.4)	26 (33.8)	38 (27.1)	0.31

Legend: m = male, f = female, n = number, SD = standard deviation, BMI = body mass index, ASA = American Society of Anesthesiologists, BC = bladder cancer

Figure I. Histopathological findings (n =217)

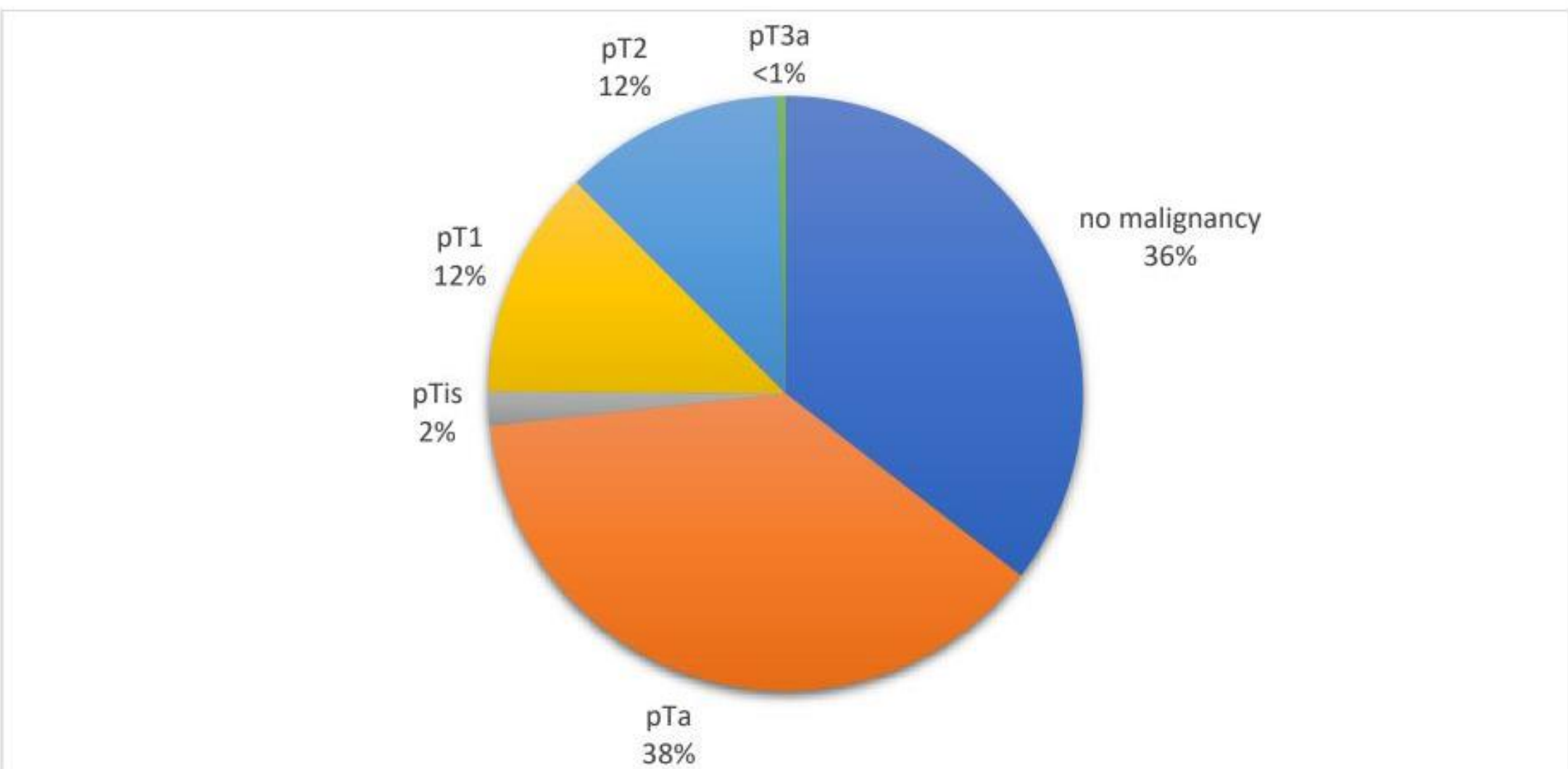
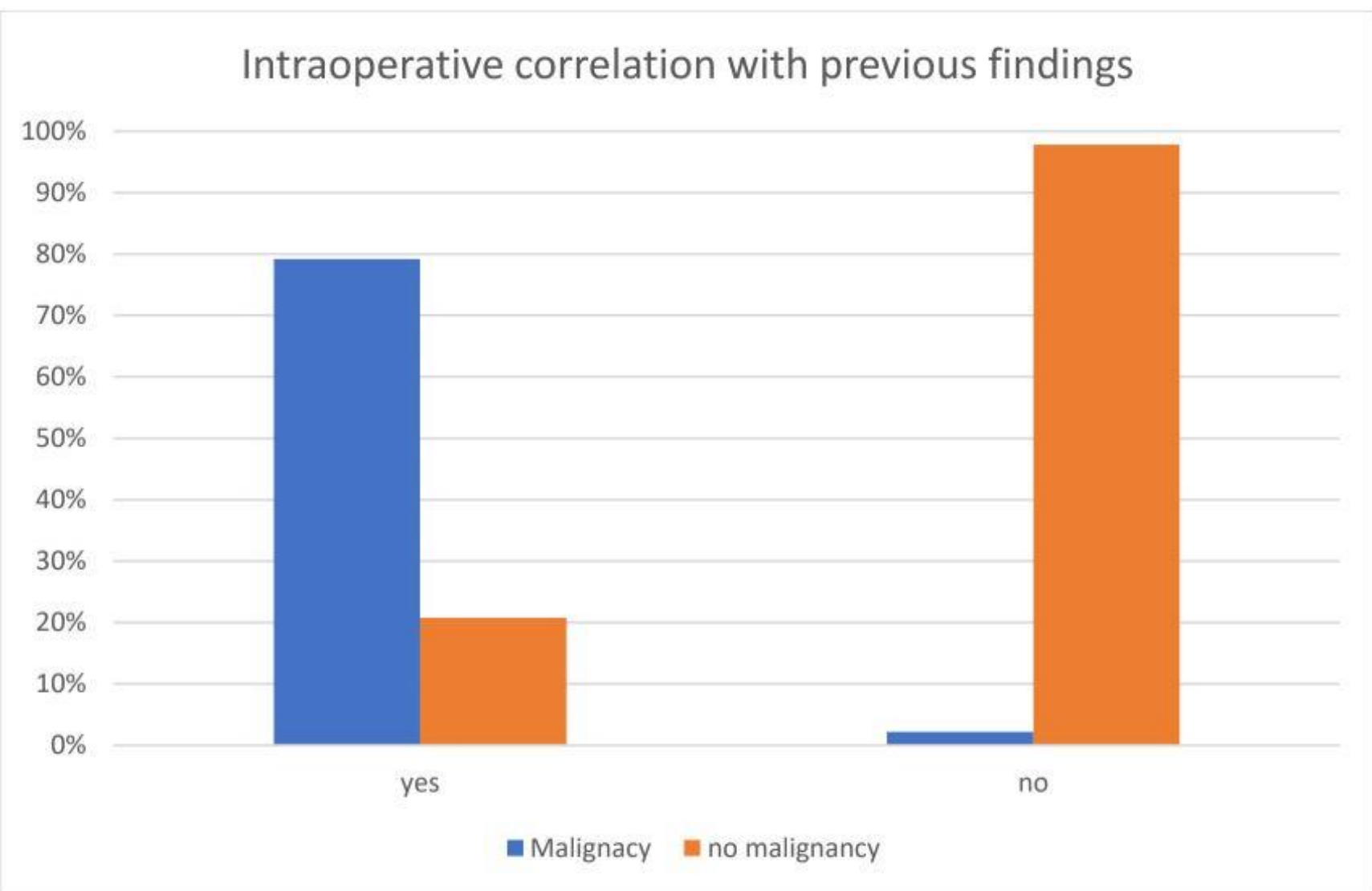


Figure III. Interobserver congruence on preoperative findings during TURBT (n=217 p<0.001)



Interobserver Congruence:

The interobserver congruence on preoperative findings during TURBT showed a strong statistical correlation with malignancy. Among patients without malignancy, the confirmation rate was significantly lower (46.8%), compared to 99.3% in patients with malignancy (p < 0.001). Notably, in cases where there was no concordance between preoperative and intraoperative findings, 98% of patients did not have malignancy (Figure III).

Predictors for malignancy:

In the multivariable analysis, age, papillary findings in the initial cystoscopy and cystoscopic confirmation of preoperative findings during TURBT were significant predictors for malignancy in the TURBT specimen. Tumor size also showed a significant association with malignancy (Table IV).

Table IV. Multivariable analysis of predictors for malignancy in the TURBT sample (n=217).

	p-value	Odds ratio	95%Confidence interval
Age	0.002	1.057	1.02-1.1
Papillary finding in initial cystoscopy	< 0.001	5.6	2.18-14.52
Tumor count	0.297	1.13	0.9-1.4
Intraoperative correlation with previous finding	< 0.001	99.3	10.9-903.9
Tumor size	< 0.001	1.9	1.33-2.7

Conclusions

Direct TURBT may not be obligatory for all patients with suspicious bladder lesions. Our findings highlight the importance of a thorough preoperative diagnostic setup using a second look cystoscopy, urine cytology and PDD to avoid unnecessary procedures and spare the burden for patients. There is a need to establish more selective criteria for TURBT.