Anatomopathological Correlation Between The Clinical Tumor Stage And The Cystectomy Piece

M. Graioui, W. Bai, Messian Gallouo, A. Doumer, M. Dakir, A. Debbagh, and R. Aboutaieb

Abstract—Objectives: For a better staging of bladder tumors, we studied the characteristics and the clinical tumor stage in a series of patients and we compared them with the anatomopathological results of cystectomy.

Materials and methods: The clinical data of 126 patients who had had radical cystectomy with ilio-obturator dissection for bladder cancer in our department were analyzed retrospectively.

Results: Of the 126 cases studied, 86% were men (109 cases) and 14% women, the average age in our series is 60 years. There was a correlation in 48.4% of the cases. The differences between clinical and pathological stages were statistically significant, the agreement was moderate with a percentage of 1.5% of pT0 at the cystectomy site (P<0.005). We found the following results: 100% of the 2 T0 tumors were T2. 80% of the 31 T1 tumors were T1, while 7 were T2; 28.3% of T2 tumors were T2, 11.6% were superficial tumors; 77.7% of T3 tumors were T3; 100% of T4 tumors were T4. Pathological lymph node involvement was diagnosed in 77 patients (61.1%) while only 19.8% was diagnosed with an abdominopelvic CT scan (P<0.005).

Conclusion: This study demonstrated the high risk of the presence of an increase or decrease in the local stage of the primary tumor and of lymph node involvement.

Index Terms—Bladder tumor; cystectomy; anapathologie.

I. INTRODUCTION

Bladder carcinoma is typically a cancer of men aged 50 to 70 years and resident in urban areas in an industrialized country. Smoking is the most frequently cited etiology, although the responsibility for certain chemical agents has also been established [1]. During the initial diagnosis, 70% of the tumors are superficial, 25% of the tumors are invasive and 5% are metastatic. Among superficial tumors, 60 to 70% will recur and 10 to 20% will progress to tumors that invade the bladder muscle [2]. The standard treatment established for bladder tumours that do not infiltrate the muscle is a transurethral resection of the tumor followed intravesical instillation of mitomycin C or BCG [3]. Transurethral resection has three clear objectives: to erase everything gross, establishing the type of tumor and / or grade, and to establish precise pathological staging [4]. It should be done as a single piece, as far as possible, taking away the underlying detrusor to allow better tumor analysis and potentially, improve the quality of the resection [5]. For bladder cancers infiltrating the bladder muscle and tumors superficial bladder at high risk of recurrence and / or progression Radical cystectomy with lymph node dissection is the standard treatment [6-7]. The surgical procedure, which aims to be a curator, is based on a radical cystoprostatectomy in men and an anterior pelvesectomy in women. The aim of the present study was to analyze the rate of agreement between clinical and pathological staging systems in a series of patients who had radical cystectomy for locally superficial advanced multifocal, recurrent bladder carcinoma or a tumor infiltrating the muscle.

II. MATERIALS AND METHODS

This is a retrospective study including all patients treated for bladder cancer by radical cystectomy at the Ibn Rochd University Hospital in Casablanca between January 2015 and December 2019, within a period of 5 years. The indication for radical cystectomy included tumor invasion of the muscularis (≥ cT2), carcinoma in situ (CIS), refractory to intravesical immunotherapy or recurrent multifocal superficial recurrent tumor refractory to transurethral resection with or without intravesical instillation. An extension checkup using a thoraco-abdomino-pelvic CT scan was requested from all patients. Scintigraphy and brain scan in case of clinical signs. All patients underwent standard surgery combined with extensive pelvic lymph node dissection, including the obturator, external iliac, internal iliac and primary iliac regions. In men a total cystoprostatectomy including excision of the prostate and seminal vesicles for women an anterior pelvesectomy, including uterus and ovaries. All cystectomy pieces were examined using the same protocol with a TNM Classification 2010 and the WHO Grade 2004. Clinical and pathological data were collected in a database and analyzed using commercial software. In all statistical analyzes, a P <0.05 was considered to indicate statistical significance.

III. RESULTS

The average age at diagnosis was 60, with extremes ranging from 46 to 78 years. The number of men was 109 men (86%) and 17 women (14%). The most common history was chronic smoking in 82% of patients. Clot hematuria is the most frequent reason for consultation and was found in 93% of cases, followed by symptoms of low apparatus. The estimated time to treatment between diagnosis and hospitalization following radical treatment varied from 20 days to 96 months, with an average of 18 months. Radical treatment has been indicated for non-metastatic muscle infiltrating tumors and recurrent superficial tumors despite resection and endovesical facilities. 92% of the tumors were of the urothelial carcinoma type (116 patients) 9 patients had squamous cell carcinoma which represents 7.1%. The distribution by stage

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Authors are with the Department of Urology Ibn Rochd UHC, Casablanca, Morocco.
(corresponding email: graioudmehdi@gmail.com)

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was as follows: Invasive tumors in 81 patients: pt2 in 60 patients (47.6%); pt3 in 7.1% of patients and pt4 in 9.5%. Non-infiltrating bladder tumors of the muscle in 45 patients (35.7%). Table 1 shows the clinical and pathological characteristics of the patients.

For the tumor stage there was a correlation in 48.4% of the cases. The tumor stage was lower than that of the cystectomy (under-staging) in 4.2% of the cases. Furthermore, it was higher than that of the room in 6.3%. The differences between clinical and pathological stages were statistically significant, the concordance was moderate with a percentage of 1.5% of pT0 at the cystectomy site (P <0.005). We found the following results: 100% of the 2 T0 tumors were T2. 80% of the 31 T1 tumors were T1, while 7 were T2; Only 17 of the 27 patients who had cT2 (63%) had pT2 carcinoma; among 105 tumors limited to the bladder (<= pT2), 47 (44.7%) were underestimated after a radical cystectomy; 77.7% of T3 tumors were T3; 100% of T4 tumors were T4. Pathological lymph node involvement was diagnosed in 77 patients (61.1%) while only 19.8% was diagnosed with an abdominopelvic CT scan (P <0.005).

TABLE 1: THE ARRANGEMENT OF CHANNELS

| Clinical characteristics | Number / percentage |
|--------------------------|---------------------|
| Middle age               | 60                  |
| Man/Woman                | 109/17(86%/14%)     |
| History of bladder tumor:|                     |
| Initial                  | 50(39.6%)           |
| Progression              | 76(60.3%)           |
| Urinary tract obstruction:|                  |
| Absence                  | 87(69.04%)          |
| Presence                 | 39(30.95%)          |
| Primary tumor clinical stage:|               |
| <=P10                    | 45(35.6%)           |
| P2                      | 60(47.6%)           |
| P3                      | 9(7.1%)             |
| P4                      | 12(9.5%)            |
| Tumor grade:             |                     |
| Low grade                | 90(71.4%)           |
| High grade               | 36(28.5%)           |
| Histological type:       |                     |
| Urethelial carcinoma     | 116(92%)            |
| Squamous cell carcinoma  | 9(7.1%)             |
| Other                    | 10(8.8%)            |
| Pathological stage / cystectomy:|           |
| P0                      | 2(1.5%)             |
| P1                      | 31(24.6%)           |
| P2                      | 27(21.4%)           |
| P3                      | 50(39.6%)           |
| P4                      | 22(17.4%)           |
| Lymph node dissection:   |                     |
| N0                      | 49(28.9%)           |
| N+                      | 77(61.1%)           |

IV. DISCUSSION

The study showed a very moderate correlation between the clinical tumor stage and the anapathological TNM stage of bladder tumors. The management of non-infiltrating muscle tumors is very different from that of muscle infiltrating, as is survival which is less than 50% for invasive tumors while it exceeds 80% for superficial tumors [8]. The purpose of transurethral resection in superficial tumors is to make the correct diagnosis and to completely eliminate all visible lesions. A complete resection is essential to obtain a good prognosis. A complete resection can be obtained by fractional or block resection [9]. The absence of detrusor muscle in the sample is associated with a significantly higher risk of residual disease, early recurrence and underestimation of the tumor. Its presence of muscle is considered as a criterion of the quality of resection. [10] In our study, 31% of superficial tumors were underestimated by the cystectomy. The results found are consistent with several studies; Vincenzo et al showed a significant rate of underestimation of the tumor stage. Out of 70 patients with pT1, 40 (57%) were confirmed as having a T1 pathological stage [11]. In a recently published study analyzing data from 8,409 patients with a superficial tumor showed a 51% risk of disease persistence and an 8% risk of underestimation in T1 tumors [12]. A re-evaluation RTUV allows a more precise staging of the tumor, improves the selection (and therefore the response) of patients to intravesical treatment, reduces the frequency of recurrences and delays the progression of the tumor [13]. A systematic re-evaluation RTUV (called a second look) within 2 to 6 weeks is recommended in the event of: pT1 and / or high grade stage tumors; large and / or multifocal tumor (incomplete resection) or absence of muscle identified on the initial resection patch [14]. Another explanation for the over-staging is the definitive pathology analysis of the cystectomy part which returns free from residual tumor (pT0 stage). This situation can be explained in three ways: Complete resection during transurethral resection of the bladder with no future development; Tumor sterilization by neoadjuvant treatment (chemotherapy); an error in the anatomopathological analysis of the resection shavings or of the operative part [15].

The imaging techniques, in particular the abdominal and pelvic scanner and MRI, are intended to establish the local and regional extension to determine the tumor stage considered as a prognostic factor and guide the choice of treatment. They do not allow a precise diagnosis of microscopic invasion of peri-bladder fat, their main indication being extra-bladder extension [16]. The sensitivity of CT for local extension varies according to the studies between 55 and 92% and for the detection of N + between 30 and 53% according to the studies. Pathological lymph node involvement was diagnosed in 77 patients (61.1%) while only 19.8% was diagnosed with an abdominopelvic CT scan [17] [18]. MRI is recommended in case of CT contraindication with injection of iodinated contrast medium. It allows better local staging than the scanner with higher overall reliability with cost constraints and the lack of a specialized center [19].

V. CONCLUSION

The assessment of the tumor stage is a determining element to guide the therapeutic modalities. The data of the study objective a major risk of underestimation of the tumor stage as well as the lymph node involvement.
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