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Letter to the Editor

VI-RADS Scoring Criteria for Alternative Risk-adapted Strategies in the Management of Bladder Cancer During the COVID-19 Pandemic

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In the midst of the COVID-19 pandemic, many surgical subspecialties, including urology, have dealt with the resulting emergency by suspending elective services and delaying many time-sensitive surgeries. Hematuria work-ups and bladder cancer (BCa) staging have been considered a priority because of the potential aggressive behavior of this disease. Evidence suggests that cancer patients are at higher risk of death from COVID-19 [1]. Thus, minimizing the potential exposure of this group by reducing hospital visits and admissions, postponing low-risk surgeries, and delaying or reconsidering intravenous therapies has to be factored into the risk/benefit discussion for BCa patients.

The Vesical Imaging-Reporting and Data System (VI-RADS) [2] may offer a reliable initial diagnostic tool to aid in risk stratification to identify patients who would benefit from immediate intervention versus a delay in management during this crisis. Three specific scenarios warrant special attention: (1) initial diagnostic work-up for gross hematuria; (2) selection of patients with high-risk non–muscle-invasive BCa for restaging transurethral resection; and (3) assessment for neoadjuvant regimen administration for locally advanced disease.

According to a recent meta-analysis [3], a VI-RADS criterion of $\geq$3 before primary transurethral resection of bladder tumor (TURBT) had cumulative diagnostic accuracy of 0.94 (95% confidence interval [CI] 0.91–0.95) in identifying muscle-invasive BCa on pathology. In addition, the VI-RADS score is designed to provide locoregional staging and to predict the likelihood of organ-confined versus locally invasive disease. Consequently, applying VI-RADS at the time of presentation with gross hematuria may aid urologists in minimizing elective procedures and obtaining a radiation-free the evaluation of both T and N staging from a single examination, while providing a prognostic criterion for adjusting oncologic class priority among overwhelmed waiting lists (Fig. 1A).

This ability to differentiate non–muscle-invasive from muscle invasive BCa was used to predict BCa upstaging at repeat TURBT in a recent prospective series (area under the receiver operating characteristic curve 0.93, 95% CI 0.87–0.97) [4] and therefore VI-RADS has been proposed for avoiding repeat TURBT according to the European Association of Urology guidelines. This may be particularly useful in cases lacking muscularis propria in the specimen or in the setting of a unifocal, small, high-grade Ta/T1 tumor, for which a preoperative VI-RADS score of 1–2 may indicate a low likelihood of tumor understaging and therefore patients may be quickly directed to appropriate adjuvant intravesical therapy for follow-up. This relatively safe approach might minimize potential exposure to COVID-19 infection by avoiding a second hospital admission for a surgical procedure that is not devoid of possible complications (Fig. 1B).

Finally, a growing body of recommendations is suggesting careful selection of radical cystectomy (RC) candidates for neoadjuvant systemic therapy [5]. The final treatment decision will need to take into account several factors, including the evolution of the pandemic, local health system capacity, and the overall performance status of the patient. Detection of a VI-RADS score of 5 might aid in identifying cases with high-volume disease and advanced stage who could benefit most from early neoadjuvant therapy. Conversely, patients with a VI-RADS score of $<$5 could proceed directly to RC and avoid the risk of exposure associated with neoadjuvant regimens (Fig. 1C).

In conclusion, we want to underline that this document is meant not as an alternative to available guidelines, but rather as an expert opinion on possible alternatives and decision aids in the treatment of BCa during a pandemic.

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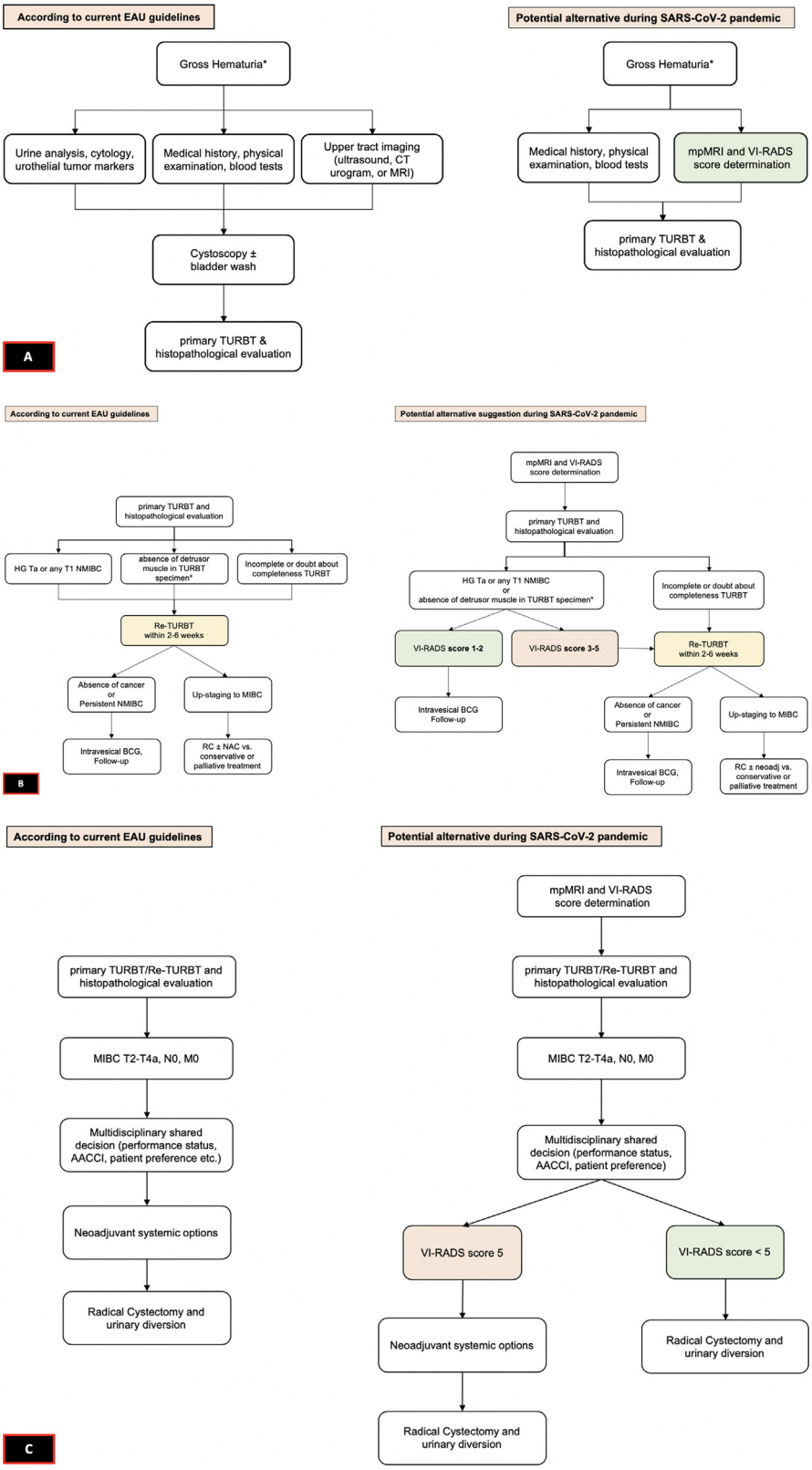

Figure 1 – Possible alternatives in the diagnostic and therapeutic management of bladder cancer during the COVID-19 pandemic. (A) Work-up for gross hematuria. * Elective gross hematuria work-up (ie, not requiring emergency interventions or immediate hospitalization). (B) Work-up for non–muscle-invasive bladder cancer (NMIBC) candidate for Re-TURBT. * Except for Ta low-grade/G1 tumors and primary carcinoma in situ. (C) Work-up for muscle-invasive bladder cancer (MIBC). * Except for Ta low-grade/G1 tumors and primary carcinoma in situ. CT = computed tomography; MRI = magnetic resonance imaging; VI-RADS = Vesical Imaging-Reporting and Data System; TURBT = transurethral resection of bladder tumor; EUA = European Association of Urology; BCG = bacillus Calmette-Guérin; Re-TURBT = repeat TURBT; RC = radical cystectomy; NAC = neoadjuvant systemic chemotherapy; HG = high grade; AACCI = age-adjusted Charlson comorbidity index.

Conflicts of interest: The authors have nothing to disclose.

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