Reviewer's report

Title: The natural history of secondary muscle-invasive bladder cancer

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Reviewer: Donald L Lamm

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The authors present a retrospective review of 760 patients treated for bladder cancer between 1998 and 2008 in the cancer registry. Mean follow-up was 44 months. The objective was to determine the relative survival of patients presenting with muscle invasive disease compared to those who develop muscle invasive disease while treated conservatively and followed closely. Primary muscle-invasive (>=T2) tumors were diagnosed in 114 patients, and 41 developed muscle invasion. Contrary to previous reports, when all patients are included, the authors report no decrease in survival in patients who develop muscle invasion. Though not stressed by the authors, their data suggest that cystectomy would be overtreatment for more than 80% of T1 patients, and in those for whom it would eventually be necessary, it could safely be postponed for 2 years.

I offer for the authors’ consideration the following comments and suggestions for revision:

1. The statement regarding the significant difference in T0 and T3 disease in the two groups should be deleted from the abstract (unless it turns out to be important, which is not now apparent) and clarified in the text by including the numbers and percents listed in Table 2. Is the difference in T0 statistically significant? Is the difference in T3? The statement as presented is unclear.

2. The difference in survival at 2 and 5 years between the two groups calculated from initial diagnosis and onset of muscle invasion needs to be more clearly stated (for example, by repeating the primary survival figures and not requiring the reader to remember or re-read them).

3. Is it true that neoadjuvant chemotherapy was not used? If so, it should be stated. If it was used, the percent use in the two groups should be specified.

4. Were all patients with T1 disease high grade? Grade should be clarified for T1.

5. A few typographic and/or English errors should be corrected: “from” rather than “form” under statistics on page 8, the statements “muscle invasion disease,” and “may allocate muscle invasion.”