Editorial

Comment: Infected Urine as a Risk Factor for Postprostatectomy Wound Infection

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Urology developed as an extraperitoneal, extraplural specialty. Prior to availability of antimicrobial therapy, exposure of the plural or peritoneal contents to infected urine was associated with development of infections and high mortality. Operating surgeons devised ways to stay out of the body cavities to limit the potential for spread of infections to intra-abdominal and intraplural viscera. Thus, finding that infected urine is a risk factor for postoperative morbidity is in keeping with the long history of urology. The real question addressed in this study is whether infected urine remains a risk factor for postoperative morbidity in the age of effective antimicrobial therapy.

There are a number of interesting and unusual aspects of the authors' experience. First, their series of 150 consecutive open prostatectomies is unusual by current standards of practice in the United States. In our institution, for example, more than 95% of prostatectomies are done transurethrally (TURP). Although urinary retention is an important and well-accepted indication for prostatectomy, the majority of prostatectomies in the United States are done for other indications, most commonly for symptoms of bladder outflow obstruction. Thus, I can think of no institution in the United States where a series of 150 consecutive open prostatectomies could be done within a reasonable period. Recently, it has been suggested, based on epidemiological findings, that TURP may be less effective in overcoming urinary obstruction than open operation, requiring an increased incidence of reoperation, and that TURP may be associated with higher long-term mortality than open operation.[1] Although these findings are the subject of considerable controversy in the urologic community about the potential for confounding effects, there well may be an increased interest in open prostatectomy in this country. Thus, this study is of interest for both historical reasons and because we soon may be doing more open prostatectomies in the United States.

Two-thirds of the patients in this series had indwelling catheters, presumably placed for urinary retention. The duration of catheterization was notably long, with a mean of 50 days of preoperative catheterization (range 25 to 80 days). Data on three additional points would be of interest. First, what was the incidence of unsuspected cancer in their patients, and did this finding influence the incidence of postoperative wound infection? Second, were there differences in the prostatectomy procedures among the infected and uninfected patients (such as use of retropubic versus suprapubic technique)? Third, it would be important to document that use of postoperative drainage tubes, such as suprapubic tubes and drains, was balanced between the various groups.

The authors provide evidence that infected urine was a risk factor for development of postprostatectomy wound infection in their overall group of patients. The rates were 10 of 81 (24%) for

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patients with infected urine and 6 of 69 (9%) for men with sterile urine preoperatively ($p<.03$). Of the 19 patients with wound infections, the authors documented the same organism based on genus, species, and antibiogram, in 16 of 19 cases in both the wound and the incision. This is consistent with previous studies showing that the urinary tract may be an important source of organisms causing postoperative wound infection. Since all patients with preoperative urinary infections received "appropriate" antimicrobial therapy, it would be interesting to comment on the potential relationship of the antimicrobial susceptibility of the organisms causing postoperative wound sepsis to the antimicrobial agents prescribed to prevent this complication. The authors recommend that, "elective prostatectomy should be deferred until the urine becomes sterile."

From my perspective as an American urologist, I would suggest an alternative interpretation of the data. It may be very difficult, if not impossible, to "sterilize" the urine in patients with an indwelling catheter, which is, after all, the major risk factor for urinary tract infection in this series. Ideally, one should do as much as possible to prevent preoperative urinary tract infection in the first place.[2] In this regard, it would be important to avoid preoperative instrumentation prior to prostatectomy. Specifically, this means avoiding catheterization to determine residual urine or urinary sterility and, perhaps, avoiding cystoscopy as a separate procedure before definitive treatment. My own practice is to check residual urine using ultrasound and to carry out cystoscopy at the time of definitive treatment. If the patient requires catheterization for urinary retention, it would be an excellent idea, based on the data presented in this study, to proceed with surgery expeditiously, rather than waiting for a prolonged period. There remains a high incidence of wound infection, even among patients with sterile urine (9%). It is entirely possible to have sterile urine in the presence of a prostatic focus of infection. Such a prostatic focus may be very difficult to treat, even with the use of "appropriate antimicrobial agents," especially in the presence of a chronic indwelling catheter. Thus, sterilizing the urine, although it is desirable, may not be equivalent to sterilizing the tissue at the operative site. Finally, the transurethral approach may be desirable in patients with a history of recent urinary infection, or presence of major risk factors for infection. By doing a TURF: one could avoid an operative incision and limit the risk of postoperative wound sepsis.

In summary, this is a very interesting study clearly documenting the importance of infected urine as a risk factor for postprostatectomy wound infection. This study would be exceptionally difficult to duplicate in the United States, given our current standards of practice, but it has considerable clinical meaning for preventing hospital infections in patients on urology services.

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