

Xun-bo Jin et al¹⁷ reported that their modified BNI could be useful in long-term follow-up. However, we consider their procedure tedious for the surgeon and the patient because of the need for long-term urethral dilation after the BNI because of the fear of reobstructions. Of our 84 patients, 3 developed a VVF after we cut the bladder neck at the 5- and 7-o'clock positions, but none of the 3 patients developed reobstruction after VVF repair. None of the patients in the second group (21 patients) developed a VVF, although we cut the bladder neck to the same depth as in the first group of patients. A sufficiently deep incision would be favorable for preventing reobstruction of the bladder neck.

In our study, the most frequent complication was reobstruction of the bladder neck. In all patients, we performed the BNI to the same depth. The circular fiber was cut to the fat layer outside the bladder neck, and no surrounding fiber was present after the operation. However, 6 of 84 patients still required further BNI procedures to relieve bladder neck contractures from postoperative scarring. The average $P_{det,Qmax}$ of these 6 patients before the first operation was 97.2 cm H₂O, which was much higher than the average $P_{det,Qmax}$ of the overall group (69.61 cm H₂O), indicating that a more severe PBNO before the surgery may be a predictor of reobstruction.

Blaivas et al¹⁶ believed that it is important to remember that a failure to relieve obstruction is generally correctable by repeat resections, whereas the incontinence that might result from overzealous therapy requires more extensive treatment. The external urethral sphincter must be identified when making the incision. Injury to the external urethral sphincter is a major cause of urinary incontinence. The length of the incision was limited to the proximal third of the urethra at the most. Of our patients, 3 developed SUI, although none of these patients had signs of injury to the external urethral sphincter on cystoscopy after the procedure, which confirmed its normal functioning. These 3 patients received transvaginal tension-free vaginal tape-obturator 6 months after BNI, and the SUI symptoms were treated successfully without a repeat of the difficult voiding symptoms. Careful follow-up and a subsequent transvaginal tension-free vaginal tape-obturator procedure could ameliorate the difficult problem of SUI.

CONCLUSION

PBNO is an exceedingly rare condition that is easily treatable when properly diagnosed by VUDS, and BNI has a high success rate. Careful incision to a sufficient depth at the 2- and 10-o'clock positions and further interventions for VVF or SUI after the surgery were the key factors ensuring the success of the BNI.

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EDITORIAL COMMENT

The authors are to be congratulated for compiling the largest series in the world of bladder neck obstruction in women in just 6 short years. And with large numbers come more complications. But are they preventable? What can be done to minimize them? Vesicovaginal fistula occurred in approximately 5% of the first 63 women who underwent bladder neck incision at the 5- and 7-o'clock position, but in none of the remaining patients who had incisions at the 2- and 10-o'clock position. In both techniques, "the circular fiber was cut from the bladder neck to the fat layer outside of the bladder." Four additional women developed sphincteric incontinence (5%). In our judgment, both these complications are due, not to the orientation of the incisions, but rather to their depth and length. We routinely use the 5- and 7-o'clock incisions and have not encountered either complication. We do not believe that it is necessary to cut through to the fat to achieve a successful outcome. In contrast, we think it is best to incise or resect "just enough" to relieve the obstruction, but not enough to cause sphincteric incontinence. Of course, doing "just enough" is a touchy-feely thing that

comes from experience and that is impossible to reduce to words. When doing these surgeries, we go in with the mind-set that we will do “as much as we dare,” without the risk of causing a fistula or incontinence, knowing that the operation can be safely redone if the patient is still obstructed.

Recurrent bladder neck obstruction (7%) requiring further surgery is uncommon in our experience with primary bladder neck obstruction (but not in patients with pre-existing contractures) and also might be related to the technique of cutting through to fat, but that is purely conjecture on our part.

Twelve patients in this series had “obvious bladder neck contractures;” We have never encountered a bladder neck contracture in women who had not had previous urethral surgery or radiation and can only speculate about the etiology.

Six women (7%) “underwent multiple bladder neck incisions because of recurrent bladder neck obstruction;” 3 additional (4%) had urethral strictures that were managed by urethral dilation. A word of caution here—in our published experience, urethral dilation is rarely effective in the long term for managing urethral strictures in women, and recurrent strictures are likely and can occur as long as a decade later—even after urethroplasty, so careful long-term follow-up is advised.¹

In summary, primary bladder obstruction is uncommon in women and is best diagnosed with videourodynamics. A successful outcome can be achieved in the vast majority of patients with judicious transurethral incision.

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<http://dx.doi.org/10.1016/j.urology.2013.10.085>

UROLOGY 83: 766–767, 2014. © 2014 Elsevier Inc.

REPLY

We very much hope to express our thanks to the editor, who provided many ideas, suggestions, and recommendations for our work. In the past decades, our team has obtained some

experience in the medical treatment of female primary bladder obstruction. This condition is uncommon in women and can, at present, best be diagnosed through videourodynamics. We believe that the most effective control of the disease depends on judicious transurethral incision.

In China, a suboptimal number of hospitals can afford to perform videourodynamics for female patients with primary bladder obstruction, providing us with a good opportunity to meet female bladder outlet obstruction (FBOO) patients and try bladder neck incisions (BNIs) on them.

As is known, the female bladder neck is composed of fiber and muscle, and bladder neck obstruction can lead to fiber hyperplasia. The most important purpose of our investigation was to identify possible complications of the procedure and to explore medical strategies to prevent its worsening. When BNIs were performed, although the circular fiber was cut from the inside of bladder neck to the outside fat layer, bladder neck reobstruction and repeat BNIs (7%) other than stress urinary incontinence (SUI) and vesicovaginal fistula remained the most commonly observed postoperative complications. In clinical practice, our team chose 2- and 10-o'clock incision sites instead of the 5- and 7-o'clock positions, but they did not change the depth or length of the incision, significantly reducing the risk of SUI and vesicovaginal fistula. Furthermore, those patients who did develop SUI and vesicovaginal fistula never experienced bladder neck reobstruction after BNIs. Therefore, we strongly recommend deeper cutting depths of the bladder neck and 2- and 10-o'clock incision sites.

Three of our patients had postoperative urethral strictures, and they all received intermittent urethral “over” dilatation (35-40F) for at least 3 months. We have accumulated much experience with urethral “over” dilatation among such patients and know how to avoid stricture recurrence. As Dr. J.G. Blaivas suggested, we had recommended that the patients test their free uroflow rate every 3 months after possible recovery.

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<http://dx.doi.org/10.1016/j.urology.2013.10.086>

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