Central role of Boari bladder flap and downward nephropexy in upper ureteral reconstruction

Mauck RJ, Hudak SJ, Terlecki RP, Morey AF
Department of Urology, University of Texas Southwestern Medical Center, Dallas, Texas 75390-9110, USA
J Urol. 2011; 186: 1345-9

Purpose: We defined the role of the Boari bladder flap procedure with or without downward nephropexy for proximal vs distal ureteral strictures.
Materials and Methods: We retrospectively reviewed the records of all patients who underwent open ureteral reconstruction for refractory ureteral strictures, as done by a single surgeon between 2007 and 2010. Patients were grouped by stricture site into group 1--proximal third of the ureter and group 2--distal two-thirds. Operative techniques and outcomes were reviewed.

Results: During the 30-month study period a total of 29 ureteral reconstruction procedures were performed on 27 patients. A Boari bladder flap was used in 10 of the 12 patients (83%) in group 1 and 10 of the 17 (59%) in group 2. Concomitant downward nephropexy was done more commonly in group 1 (58% vs 12%, p = 0.014). At a mean followup of 11.4 months there was no difference in the overall failure rate between groups 1 and 2 (17% vs 12%). Complications developed more frequently in group 1 (75% vs 35%, p = 0.060), hospital stay was longer (mean 8.0 vs 4.4 days, p = 0.017) and mean estimated blood loss was greater (447 vs 224 ml, p = 0.008).
Conclusions: The Boari bladder flap procedure is a reliable technique to reconstruct ureteral strictures regardless of site. Renal mobilization with downward nephropexy is a useful adjunctive maneuver for proximal strictures.

Editorial Comment

The authors review their experience with reconstruction of ureteral defects. 20 of these patients underwent Boari flap reconstruction with or without downward nephropexy. The focus of the paper is on the utility of Boari flap for reconstruction of upper segment strictures not amenable to ureteroureterostomy. Many urologists avoid Boari flap in such cases due to a fear that the flap will not reach or a concern that is the flap reaches, its length:base width ratio will exceed 3:1. The authors demonstrate that with liberal use of downward nephropexy (used in 7 of 10 upper ureteral Boari flaps) good success rates can be achieved. Of note, no long-term imaging was done unless warranted by recurrent symptoms. So, the risk of long-term silent hydronephrosis due to recurrent obstruction is unclear. There are many ways to anastomose the ureter to the Boari flap. Morey anastomoses the ureter to the flap in an end-to end fashion. I have typically done an end-to-side anastomosis of the ureter into the posterior wall of the flap, typically 2 cm below the upper terminus of the flap. I do this because I feel the blood supply is better than at the tip of the flap and because. I like to reimplant far from the anterior suture line on the bladder flap. The downside of this approach is that I sacrifice a couple of centimeters in length. Based on Morey's results, the end-to-end technique appears to be a good option when the length does not allow an end-to-side anastomosis.

Dr. Sean P. Elliott
Department of Urology Surgery
University of Minnesota
Minneapolis, Minnesota, USA
E-mail: selliott@umn.edu