

PEDIATRIC UROLOGY

Lack of Usefulness of Positioned Instillation of Contrast Cystogram after Injection of Dextranomer/Hyaluronic Acid

Pinto KJ, Pugach J, Saalfeld J

Department of Pediatric Urology, Urology Associates of North Texas and Cook Children's Medical Center, Fort Worth, Texas, USA

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Purpose: Positioned instillation of contrast cystograms have been touted as possibly being more sensitive than standard cystograms for evaluation of vesicoureteral reflux. We performed positioned instillation of contrast cystograms intraoperatively, immediately after the injection of dextranomer/hyaluronic acid to treat vesicoureteral reflux, to determine whether they might be predictive of operative success and obviate the need for the standard postoperative voiding cystourethrogram, which is usually performed at 3 months.

Materials and Methods: Patients with vesicoureteral reflux and no confounding conditions were treated with dextranomer/hyaluronic acid and subsequent positioned instillation of contrast cystogram while under the same anesthesia between November 2003 and March 2005. The results of this intraoperative cystogram were compared to the results of the postoperative voiding cystourethrogram performed 3 to 4 months later.

Results: A total of 61 patients met the inclusion criteria and underwent positioned instillation of contrast cystogram after dextranomer/hyaluronic acid injection. Only 53 patients (86 ureters) completed the necessary postoperative evaluation. Positioned instillation of contrast cystogram added 4 minutes to the procedure and required about 4 seconds of fluoroscopy per ureter evaluated. The overall success rate for correcting reflux was 84% (72 of 86 ureters cured). None of the 14 ureters with persistent postoperative reflux was identified by intraoperative cystogram, and 3 patients were misidentified as having reflux despite cure confirmed postoperatively. Intraoperative positioned instillation of contrast cystogram was predictive of treatment failure 0% of the time (sensitivity 0%). There were no complications.

Conclusions: Positioned instillation of contrast cystogram performed immediately after injection of dextranomer/hyaluronic acid was not useful in predicting which patients would have persistent reflux postoperatively. Patients are best served with the extant protocol of conventional cystography 3 to 4 months postoperatively.

Editorial Comment

This study is an ingenious attempt to improve the efficacy of endoscopic Dx/HA injection for the treatment of vesicoureteral reflux. The authors proposed that by doing a "PICC" study intraoperatively they could identify those patients who were going to fail endoscopic treatment (and in theory they could re-treat them at the same setting). Furthermore, if they could predict those who would ultimately fail with certainty, they could avoid an uncomfortable postoperative cystogram. Unfortunately, their idea did not prove effective.

Despite verbal reports to the contrary, correction of reflux in patients with endoscopic Dx/HA is effective in only 70-80% of patients on the first attempt. In this paper, as in many, the results were reported in terms of % ureters corrected. In this case it was 72 of 86 (84%). But of course patients and parents are much more concerned with the individual patient being cured of their reflux. In this study, reading between the lines, 14 of 53 patients had persistent reflux (in other words, 74% of patients were cured at 3 months). I believe this is typical of the results of most centers.

The idea of finding reflux on an intraoperative test that could result in immediate correction of the problem is great. Similarly, a study that would allow avoidance of a postoperative VCUG would be great. However, the composition of Dx/HA is such that the HA is absorbed over time. Hence, the size of the implant is very likely to get smaller with time. This makes it likely that patients that do not demonstrate reflux at the

time of the procedure, may well demonstrate reflux later, as the implant shrinks. What was interesting in this case was the fact that 3 patients had reflux demonstrated with PICC studies, but these same 3 did not show reflux at the later study. In this case, PICC appeared to be overly sensitive. Of course all types of cystograms miss about 20% of patients with reflux. Perhaps more important, the clinical course of these patients is not known, hence we really do not know whether the PICC study was clinically relevant or not or most important, whether the patients successfully treated with Dx/HA did better than those who failed. Much more work needs to be done in this area.

Dr. Barry A. Kogan

*Chief and Professor of Urology and Pediatrics
Albany Medical College
Albany, New York, USA*

Preoperative Anxiety, Postoperative Pain, and Behavioral Recovery in Young Children Undergoing Surgery

Kain ZN, Mayes LC, Caldwell-Andrews AA, Karas DE, McClain BC

Center for the Advancement of Perioperative Health, Department of Anesthesiology, Yale University School of Medicine, New Haven, Connecticut, USA

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Objective: Findings from published studies suggest that the postoperative recovery process is more painful, slower, and more complicated in adult patients who had high levels of preoperative anxiety. To date, no similar investigation has ever been conducted in young children.

Methods: We recruited 241 children aged 5 to 12 years scheduled to undergo elective outpatient tonsillectomy and adenoidectomy. Before surgery, we assessed child and parental situational anxiety and temperament. After surgery, all subjects were admitted to a research unit in which postoperative pain and analgesic consumption were assessed every 3 hours. After 24 hours in the hospital, children were discharged and followed up at home for the next 14 days. Pain management at home was standardized.

Results: Parental assessment of pain in their child showed that anxious children experienced significantly more pain both during the hospital stay and over the first 3 days at home. During home recovery, anxious children also consumed, on average, significantly more codeine and acetaminophen compared with the children who were not anxious. Anxious children also had a higher incidence of emergence delirium compared with the children who were not anxious (9.7% vs 1.5%) and had a higher incidence of postoperative anxiety and sleep problems.

Conclusions: Preoperative anxiety in young children undergoing surgery is associated with a more painful postoperative recovery and a higher incidence of sleep and other problems.

Editorial Comment

The authors studied the relationship between preoperative anxiety and recovery in a large series of children undergoing tonsillectomy and adenoidectomy. They show clearly that higher levels of preoperative anxiety are associated with increased postoperative morbidity, including more pain, use of more pain medication and less sleep. The differences between the more anxious and less anxious group resolved in about 3 days.

This study is unique in that it is the only study of its kind in children. Its message is important to those of us doing surgery on children. Based on these results, it suggests the hypothesis that reducing preoperative

anxiety will lead to better outcomes in the immediate postoperative period. Hence, better preoperative preparation may yield better outcomes.

Although this result is something most pediatric urologists would support intuitively, there are some issues with the study. First, all patients had a preoperative visit to the hospital. This is not usually done for minor surgical procedures. Would this have lessened or heightened the anxiety? More important, the study design prohibited the use of preoperative sedation or parents entering the operating room with the child (except in extreme cases). Though good for the study design, this is not typical in the real world. Nearly all our patients get preoperative sedation. Would the high anxiety patients have done better if they had the benefit of preoperative sedation with an amnesic? One would guess so. Further, for purposes of the study, all patients were admitted for 24 hours postoperatively. This is not typical of the procedure that was done and might also have increased the anxiety in those patients with high anxiety to start with.

Overall, the study is fascinating and tends to agree with common perception. However, more work needs to be done to evaluate whether education and/or pharmacological interventions, which are commonly accepted as standard of care, are truly successful in improving the postoperative course of children undergoing surgery and/or whether selected populations of those most anxious would benefit even more than others.

Dr. Barry A. Kogan

Chief and Professor of Urology and Pediatrics

Albany Medical College

Albany, New York, USA