

CONTINENT CATHETERIZABLE VESICOSTOMY: AN ALTERNATIVE SURGICAL MODALITY FOR PEDIATRIC PATIENTS WITH LARGE BLADDER CAPACITY

Hypothesis / aims of study

A number of techniques for surgical creation of a continent catheterizable channel have been described, most commonly using an appendiceal flap-valve technique (Mitrofanoff procedure) or segment of ileum (Monti procedure) to create a catheterizable channel. The aim of this study is to present a modified technique and early outcomes of a continent catheterizable vesicostomy in pediatric patients with either flaccid neurogenic bladder or intractable voiding dysfunction and large capacity bladder.

Study design, materials and methods

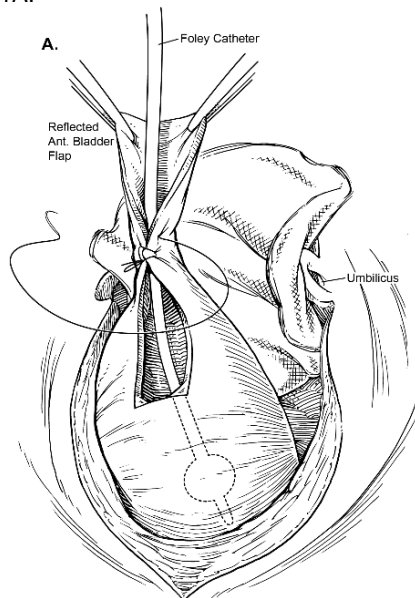
Six patients underwent the procedure from October 2014 to December 2015. A 4cm Pfannenstiel incision was made, avoiding intraperitoneal dissection. After adequate mobilization, a 2cm vertical flap at the dome of the bladder was identified and tubularized over a 12Fr catheter with 4-0 vicryl suture (Figure 1A). The tubularized flap was then intussuscepted into the bladder with four 4-0 PDS sutures (Figure 1B), creating a continent mechanism. The catheterizable channel was then tunnelled to the umbilicus (Figure 1C), the channel ostomy matured, and the cystostomy closed in two layers.

Results

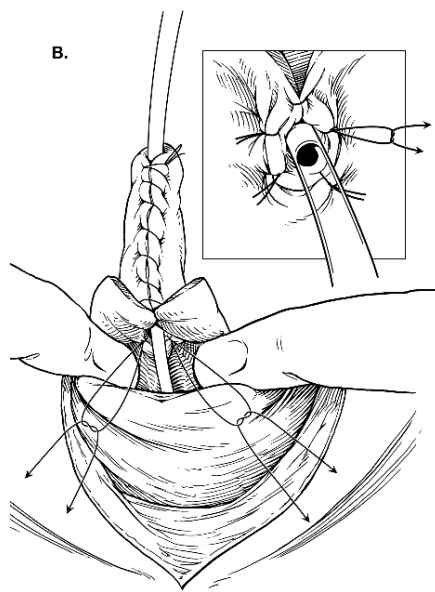
The median patient age was 8 (IQR 12) years. All patients had urinary dysfunction requiring drainage from etiologies that included Eagle-Barrett syndrome (n=2), Noonan syndrome (n=1), Lennox-Gastaut syndrome (n=1) and Spina bifida (n=2). Median hospital length of stay was 8 (IQR 3) days. One patient had a superficial wound infection treated with antibiotics, and one patient required balloon dilation of the catheterizable channel at 3 months postoperatively secondary to difficulty self-catheterizing. Five patients were successfully self-catheterizing at last follow-up. Median follow-up was 6 (IQR 5) months and there were no intra- or perioperative complications.

Figures

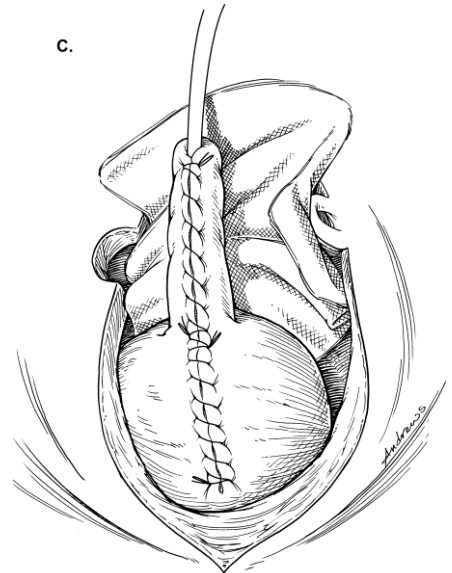
1A:



1B:



1C:



Interpretation of results

This study describing the continent catheterizable vesicostomy, using solely native bladder tissue, offers an additional surgical modality to the myriad of approaches that bypass the urethra for long-term bladder drainage. With modest follow-up, our initial case series demonstrates that the procedure is safe, feasible, and without episodes of channel incontinence between catheterizations. The indications for continent catheterizable vesicostomy are similar to other modalities (ie. Mitrofanoff or Monti procedure) in that the patients or caregivers should be capable and willing to perform catheterization 4-6 times per day via the umbilical stoma. Secondly, the patient's bladder capacity should be large enough to facilitate tubularization of a bladder flap cephalad to the umbilicus without compromising remaining bladder capacity. In our initial experience, cephalad traction at the dome of the bladder to delineate the length of tubularized flap necessary to reach the level of the umbilicus has demonstrated sufficient capability to perform a continent catheterizable vesicostomy. Finally, for patient's who require use of the appendix for a MACE procedure, continent catheterizable vesicostomy avoids the necessity of using a segment of bowel (ie. for a Monti procedure).

Concluding message

Continent catheterizable vesicostomy is a novel technique for urinary drainage in patients with large bladder capacity that spares use of the appendix or ileum. Early results are encouraging, providing a catheterizable channel through the umbilicus without urinary leakage between catheterization.

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Medical College of Georgia - Internal Review Board
Helsinki: Yes **Informed Consent:** Yes