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Case Report

Revisted Blocksom vesicostomy: Operative steps

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Abstract

Posterior urethral valves (PUVs) are the most common cause of infravesical outflow obstruction in boys. Vesicostomy is considered in selective cases of PUV as an initial temporary procedure. The most commonly followed procedure is the one described by Blocksom. The procedure is simple and easy to perform. We revisited this procedure and describe the operative steps.

Key words: Posterior urethral valves, temporary, vesicostomy

INTRODUCTION

Today, vesicostomy in a child with posterior urethral valves (PUVs) is reserved primarily for an infant with very low birth weight whose urethra cannot accommodate an endoscope, a child with continued impaired renal function, high bladder urine volumes, and upper tract deterioration after valve ablation or urethral catheterization.[1] The vesicostomy is known to reduce bladder storage pressures and may optimize glomerular filtration rate in some cases.[2] The argument that the vesicostomy defunctionalizes the bladder and leads to decreased compliance in the long term has been refuted, since a properly created vesicostomy allows bladder filling and preserves contractile function at a reduced leak point pressure.[3] The vesicostomy must be seen as a temporary diversion in children with PUVs because it does not alter clinical outcomes as compared to primary ablation, nor does it prevent a bladder from acting as an adequate reservoir for a renal transplant.[4]

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CASE REPORT

A 6-year-old male child was brought to pediatric urological services with complaints of recurrent urinary tract infections and urinary incontinence. On the examination, the child appeared toxic, febrile, poorly built, and nourished. Serum creatinine was 3.3 mg%. Ultrasonography and magnetic resonance urography revealed bilateral hydronephroureterosis, and a thickened distended bladder [Figure 1a]. The child was hydrated, catheterized with an infant feeding tube and started on broad-spectrum antibiotics. The catheter drained turbid urine. Over a period of a week, the urine output improved, serum creatinine reduced to 0.8 mg%.

The child was taken up for on-table voiding cystourethrogram (VCU) and cystourethroscopy. VCU revealed right-sided Grade V vesicoureteric reflux, a thickened trabeculated bladder, bladder

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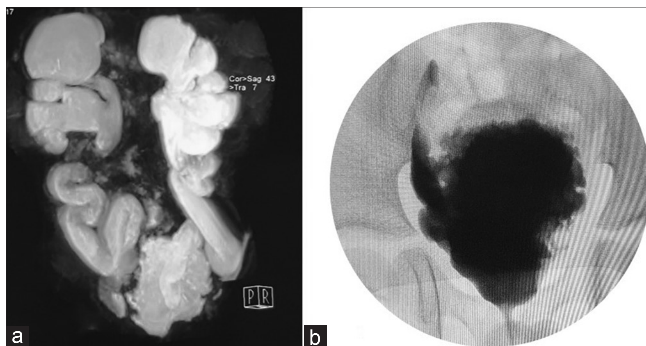

Figure 1: (a) Magnetic resonance urogram showing bilateral Grade IV vesicoureteral reflux due to posterior urethral valves, (b) voiding cystourethrogram showing posterior urethral valves with the left vesicoureteral reflux

neck hypertrophy, dilated posterior urethra, and PUVs [Figure 1b]. Cystourethroscopy confirmed the above findings. As the child had severe bilateral hydronephrosis, turbid urine, and poor nourishment, it was decided to create a temporary vesicostomy.

Operative technique

The child was put in a supine position under general anesthesia. The bladder was distended with 200 ml of normal saline. A 2-cm midline transverse incision was made midway between the pubic symphysis and the umbilicus. The rectus muscles were separated, the bladder was exposed with traction sutures [Figure 2a], and the peritoneum was mobilized cephalad and away from the posterior wall and dome of the bladder. The bladder dome was identified by isolating the urachus, which was ligated so that the dome could be exposed through the fascial incision [Figure 2b]. The key operative step in the creation of the vesicostomy was to ensure that the posterior wall of the bladder was taut-accomplished by bringing the dome of the bladder to the skin [Figure 2c] - to prevent prolapse of the back wall of the bladder through the incision [Figure 2d].[1]

DISCUSSION

PUVs, voiding dysfunction, neurogenic bladder, and many other similar conditions represent a great challenge for the treating pediatric urologist. In all these conditions, the preservation of the upper urinary tract is a priority. Other factors that need to be taken care of include reducing episodes of urinary tract infection and promotion of continence.

The use of vesicostomy to drain the bladder on a temporary basis was proposed by Michie *et al*.[5] and Duckett[6] in 1960's. It is well known that vesicostomy is technically

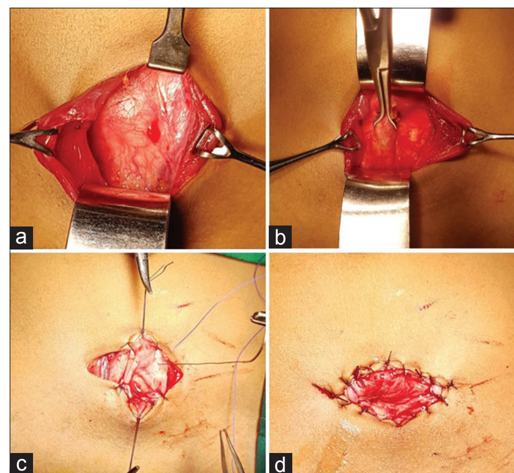

Figure 2: (a) Urinary bladder exposed after retracting rectus abdominis muscle, (b) urinary bladder brought out with Babcock's forceps, (c) fixation sutures taken from Bladder wall to muscle layer, (d) postoperative bladder stoma

a simple procedure to perform, can be easily reversed, effectively drains upper tracts, and prevents urinary sepsis.[7] Prudente *et al*.[8] reported that vesicostomy protected the upper tracts, decreased hydronephrosis, and improved kidney function. Moreover, they opined that the children and their parents adequately adjusted to the procedure and a positive global evaluation was reported by the parents and caregivers.

CONCLUSIONS

Vesicostomy is considered as a temporary urinary diversion. It can be easily performed and is known to objectively improve hydronephrosis, stabilize renal function, and protect upper tracts.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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