

VESICOSTOMY AS A PROTECTION OF THE UPPER URINARY TRACT ON LONG FOLLOW UP AND THE ASSOCIATED LIFESTYLE ADJUSTMENTS OF PATIENT'S CARETAKER

Hypothesis / aims of study

This study's purpose is to verify the results of vesicostomy on the upper urinary tract in patients affected by voiding dysfunctions. The caretaker's lifestyle adjustments were evaluated.

Study design, materials and methods

The charts of 21 children, who underwent vesicostomy between 1992 and 2007, using the technique proposed by Blockson, were analysed. The motive for using this procedure was failure in clinical treatment defined by: worsening hydronephrosis, recurrent urinary tract infections, stable high degree vesicoureteral reflux, worsening renal function and no acceptance of Clean Intermittent Cateterization (CIC) and anticholinergics. The patient's median age at the moment of surgery was 1.8 years (ranging from 0 to 13). At the last follow up, had a median age of 10.6 years (ranging from 6 to 24) and mean follow up of 6.9 years (ranging from 1 to 15). All patients were submitted to ultrasonography, voiding cystourethrography, static renal scintillography, creatinine clearance and urine cultures, each 6 months during the follow-up. Patients and their caretakers were interviewed to complete a questionnaire for self evaluate the surgical procedure. Overall avaluation were given a grade that ranged from 0 (worst) to 10 (best) based on Lickert's scale.

Results

The most frequent diagnosis was posterior urethral valves (PUV) 7 (33,3%) and myelomeningocele 5 (23,9%). Seventeen cases presented hydronephrosis on ultrasonographic evaluation before the procedure (81%). Ten (47.6%) of them showed improvement and 7 (33.4%) cure. There was no case that became worse. Static renal scintillography with DMSA registered a renal function deficit prior to surgery in 9 patients (42%) and there was no post surgery impairment in 20 children (95%). Creatinine clearance was less than 90ml/min/1.72m² for all patients before the procedure and improved in 11 (52%) reaching more than 90ml/min/1.72m². Therefore, this biochemical parameter stabilized in 9 (43%) and worsed in 1 (5%). Urinary tract infection frequency prior to surgery was greater than 1 per year in all cases. After vesicostomy 8 (38%) children demonstrated a decrease of this morbidity without suppressive antibiotic therapy. The others needed continuous antibiotic therapy because of more than 1 urinary tract infection per year. Fourteen patients (66.6%) presented vesicoureteral reflux (VUR) before surgery, 10 (47.6 %) bilateral and 4 (19%) unilateral, all grades III or IV. Complete resolution was observed in 4 unilateral cases and improvement to grades I or II in 4 bilateral cases. We observed no impairment and 6 bilateral cases maintained grade III or IV. The complications of the surgery were present in 11 (52%) cases: eight (38%) stenosis, five (23%) dermatitis and six (28%) prolapses. We did not observe bladder or upper urinary tract calculus. All complications occurred about 6 months after surgery, ranging from 4 to 10 months. Twenty caretakers answered the survey. Eighteen (90%) children were classified as dry, choosing diapers over vesicostomy, 14 (70%) caretakers considered vesicostomy to be manageable and the mean grade obtained was 8.7, ranging from 3 to 10 (DP 2.5) (Table 2). Six patients (28.5%) had their vesicostomies closed after a mean period of 2.4 years (DP 1.3). Among these, 3 (14.2%) experienced augmentation enterocystoplasty and one case required ureterovesical reimplant at the same time as vesicostomy closure. Fifteen patients have been preserved their vesicostomies until the end of this study. The reasons for this were: caretaker refuse in 5 (23.8%), or children under scholar age in 10 cases (47.6%).

Interpretation of results

Vesicostomy is considered a temporary urinary diversion, done through simple technique. Some authors suggested its use as a permanent diversion, mainly with patients not accept the CIC or those who choose an incontinent diversion. The relevant documentation shows an objective improvement of hydronephrosis ranging from 85% to 100% and stabilization of renal function, evaluated through scintillography, was found to be around 88%. These results were reproduced in our study with improving rates of 81% and 95% respectively. However, reduction in frequency of urinary tract infections and improvement of vesicoureteral reflux, showed in some studies, were lower than the ones demonstrated up to this point (38% and 58%, respectively, versus 85%). The complications described occurred in 20% to 35% of cases and the most frequent are: dermatitis, mucosal prolapse and vesicostomy stenosis. The lack of calculus formation may be a matter of length of follow-up. Our results are similar to the ones shown (between 23 and 38%) for the different complications. It is noteworthy that there were no cases of urinary tract lithiasis in our study. In the case of dermatitis, there is great variation in the incidence mainly because of difficulty in classifying its intensity. The Blockston technique is emphatic on the importance of dissecting vesical cupula after removing the urachus in tailoring the vesicostomy and lowering chances of post-surgery prolapse. There is no study comparing complication rates among different techniques. During the bibliographical review that supported this study, we were unable to identify any other study that had given credit nor evaluated guardians' opinions towards the procedure and its repercussions on the patients' quality of life. Even though we used a survey not yet generally accepted by the scientific community, we were able to observe the good receptivity by caretakers towards vesicostomy once a dry state was achieved throughout the day (despite talk about an incontinent diversion). Most importantly, they mentioned that they are adapted to the new situation even though there are specific cares related to the diversion. In general, a high score was given on the global evaluation of the procedure.

Concluding message

Vesicostomy is a simple urinary diversion, easily performed and showing encouraging results towards safeguard of renal function. Furthermore, the procedure has received rave reviews from the caretakers who appreciate the low complication rates and therefore it has become a viable choice for children with neurological or other voiding dysfunctions or those that did not respond to conservative treatment.

Specify source of funding or grant

None

Is this a clinical trial?

No

What were the subjects in the study?

HUMAN

<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Comitê de Ética em Pesquisa - UNICAMP Sistema Nacional de Ética em Pesquisa
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes