A SIMPLE WAY TO ACHIEVE TEMPORARY CONTINENCE IN THE MITROFANOFF CONDUIT

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ABSTRACT

Introduction: We describe a simple mechanism for achieving temporary continence when there is failure of the conduit/reservoir valvar system. A device (plug), originally produced for genuine stress urinary incontinence in women, was used into the conduit stoma between catheterizations.

Case Report: A 6-year-old girl with neurogenic bladder due to myelomeningocele underwent bladder augmentation with a continent suprapubic stoma. Two months after surgery, the patient complained of mild urinary leakage through the stoma, starting 1.5 to 2 hours after the last conduit intermittent catheterization. For achieving continence, the device (plug) was successfully used during 4 months until absence of leakage was noticed even at a 5-hour interval. During a 15-month follow-up, the patient was dry with no further need for plug usage or any additional procedure for obtaining continence.

Conclusion: The plug is a simple practical method for achieving continence while the surgery is being scheduled or while awaiting possible spontaneous resolution of the leakage. We emphasize that urodynamic study is mandatory before the plug placement.

Key words: urinary diversion; catheterization; incontinence; Mitrofanoff principle; neurogenic bladder

INTRODUCTION

The main cause of surgical revision in cases of continent cutaneous urinary diversion is failure of the continent mechanism in the conduit/reservoir (1). When there is a failure in the conduit/reservoir valvar system, that is, when a disproportion between the conduit diameter and the length of the reservoir tunnel is observed, surgical revision is the only therapeutic alternative. Another cause of incontinence in the Mitrofanoff conduit is the increased pressure into the reservoir, exceeding the conduit resistance. In this case, urinary continence may be acquired spontaneously, as the reservoir compliance increases, there is spontaneous urinary continence. In cases of valvar incompetence, when awaiting spontaneous resolution, when a patient is waiting for the surgery, in patients with high surgical risk, or when there is urinary leakage secondary to the low reservoir capacity, a more conservative approach would be advised. We describe a simple mechanism to achieve urinary continence in the Mitrofanoff conduit by using a device (plug), originally used in cases of urinary incontinence in women (2).

CASE REPORT

A 6-year-old girl underwent a bladder augmentation with a continent abdominal stoma as previously described (3). No problems were observed in the post-surgical period. Intermittent bladder catheterization through the stoma started three weeks after the surgery. Urinary leakage through the stoma was observed since the beginning of the catheterizations, and started about two hours after the catheterization.
The urodynamic study showed urinary leakage through the stoma in the early stage of vesical filling, but with normal compliance. A mono-spherical device ("plug") used for stress urinary incontinence (Avina, Denmark) was placed to stop the leak from the stoma in the period between the catheterizations (Figures-1 and 2). It was easily placed and removed, with no trauma, pain or bleeding.

The device was successfully used for 4 months, when lack of urinary leakage was observed even 5 hours after the previous catheterization. After a 20-month period without the device, the patient remained continent, with no need of additional procedures.

COMMENTS

Urethral devices ("plugs") have been used as a no-surgical treatment for stress urinary incontinence (2). We report a case of urinary incontinence through the Mitrofanoff conduit treated with a mono-spherical silicone “plug”. The use of this plug is a simple and practical method for achieving continence, while the surgical procedure is being scheduled or while awaiting possible spontaneous resolution of the leakage. This method seems to be safe, although it is necessary to analyse a higher number of cases. In our case report, the patient became continent spontaneously within four months of device usage. This seems to be related to the improvement in the vesical capacity, because the continence occurred spontaneously. It can be stated that the capacity of the reservoir would be rapidly increased if we prevent urinary leakage, as a higher quantity of urine would be stored. However, the device should not be used in children with high leak point pressure, as it may harm the renal function. Consequently, a urodynamic study is necessary before using the device.

REFERENCES


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