An alternative channel for the Mitrofanoff principle based on transverse skin flaps: An extraperitoneal minimal invasive approach (the RPM technique)

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An alternative channel for the Mitrofanoff principle based on transverse skin flaps: An extraperitoneal minimal invasive approach (the RPM technique)∗

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Objective: The Mitrofanoff principle is a well established strategy in pediatric urology, with the appendix and Yang-Monti tube being the most used channels. The search for an alternative tube with less morbidity is justified. Hence, we present a patient treated via an alternative approach in which the channel was constructed from two lower abdominal transverse skin flaps (the RPM technique).

Methods: A 17-year-old patient with posterior urethral valves, hypocontractile bladder and experiencing pain on urethral clean intermittent catheterization was selected. The procedure consisted of defining two rectangular transverse skin flaps of 5 x 1 cm opposite to each other. The flaps were rotated 90° and anastomosed to create a tube. A small extraperitoneal bladder wall incision was performed and the tube was connected to the bladder. Two rectal abdomen muscle strips were crossed in the midline as a neosphincter.

Results: The patient had an uneventful postoperative course and remains continent for intervals of 4 h. The stoma and incision have a good cosmetic aspect at 16 months follow-up.

Conclusion: The RPM technique is an alternative approach for a minimal invasive strategy according to the Mitrofanoff principle. Long-term follow-up is necessary to confirm the excellent initial results.

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Introduction

The appendix and the Yang-Monti tube are the most used techniques for urinary conduits isolated or in association with enterocystoplasty for bladder reconstruction [1,2]. Alternatively, a catheterizable channel can be produced...
from an ileal flap tube from the same segment used to create the reservoir [3]. We previously reported on the technical feasibility of a new approach for creating catheterizable channels based on two transverse skin flaps in a rabbit model [4] and others reported on tubularization of a single skin flap to create a tube [5]. The advantage of our concept is that the tube obtained from two flaps is constructed by two independent suture lines, similar to the onlay repair of hypospadias, and thus avoids a circular anastomosis, which is presumably more prone to stricture. We present herein a patient treated according to this alternative approach in which the channel was constructed from two lower abdominal transverse skin flaps (the RPM technique, named from initials of Rosito, Pires and Macedo, the original authors of the concept) [4].

**Method**

A 17-year-old patient with posterior urethral valves, hypococontractile bladder and dependent on urethral clean intermittent catheterization was selected. Laser depilation of the suprapubic area was performed previously to the surgery. The procedure consisted of defining two rectangular transverse skin flaps of 5\times1 cm opposite to each other. The vascular support of both flaps was kept intact by the inferior superficial epigastric vessels and superficial iliac circumflex, and allowed easy mobilization. The flaps were rotated 90° and anastomosed to create a tube using two running 3.0 polyglycolic acid sutures guided by a 12-Fr plastic catheter.

Supplementary video related to this article can be found at doi:10.1016/j.jpurol.2012.02.003.

The following is (depending on the number) the supplementary video related to this article.

A small extraperitoneal bladder wall incision was performed and the tube anastomosed to the bladder. Two non-detached 1.0–1.5 cm width rectal abdomen muscle strips were crossed in the mid-line to create a neosphincter. A 12-Fr silicone tube was left indwelling for 3 weeks before clean intermittent catheterization was started through the stoma. Continence was defined as a dry interval of 4 h between catheterizations.

**Results and conclusion**

The outcome was uneventful and the patient remains continent. The stoma and incision showed a good cosmetic aspect and there were no complaints after 16 months. Our technique is straight-forward, quick and safe besides being totally extraperitoneal. We often currently use this method as a first step, whenever no augmentation is requested. An interesting application of this concept is its associated use in the Montfort abdominoplasty in prune belly syndrome patients, using skin that would otherwise be discarded.

**References**


