Journal of Pediatric Urology (2014) 10, 850—853

Journal of Pediatric urology

Buccal grafts for urethroplasty in pre-pubertal boys: What happens to the neourethra after puberty?

V. Figueroa, L.E. de Jesus, R.L.P. Romao, W.A. Farhat, A.J. Lorenzo, J. Pippi Salle*

Division of Urology, The Hospital for Sick Children, Main Floor Black Wing Rm M299, 555 University Avenue, Toronto, ON M5G 1X8, Canada

Received 19 February 2014; accepted 19 March 2014
Available online 1 April 2014

KEYWORDS
Hypospadias;
Buccal mucosa;
Urethroplasty;
Follow up;
Puberty

Abstract *Objective:* Buccal mucosa grafts (BMG) are often used in complex urethral reconstruction. Following pubertal endogenous androgen stimulation (EAS) in prepubertal boys, there are concerns that the neourethra may not grow proportionally to the phallus. To address the paucity of literature on the topic, this article reports on data for post-pubertal follow up after pre-pubertal BMG urethroplasties (BMGU).
Patients and methods: Retrospective chart review of boys who underwent staged BMGU before the age of 12 years at a single referral center between 2000 and 2010 and who were followed up until after puberty. Demographic information, initial meatal location, quality of graft before tubularization, flow rate parameters (FRP) and complications were captured.
Results: Of the 137 patients who underwent staged BMGU during the study period, 10 satisfied the inclusion criteria. Mean patient age at first stage BMGU was eight years (range five to eleven years). The mean follow-up was 40.6 months (9—66 months). The grafts were harvested from the cheek and lower lip in seven and three cases, respectively. The mean interval between the first and second stage was 15.8 months (6—87 months). Complications included one urethro-cutaneous fistula and two cases of glanular dehiscence. The final position of the meatus was glanular in nine boys and coronal in one. Importantly, no recurrent ventral curvature (VC) was found during the second stage BMGU or reported after puberty. All patients demonstrated normal maximum flow after puberty (mean 25.7 ml/s).
Conclusion: Buccal mucosa grafts appear to grow proportionally to the phallus after pubertal EAS. No recurrent VC or inadequate FRP were observed in this series. Despite the small number of subjects, the results are reassuring and support continued use of BMG in the pediatric prepubertal population.
© 2014 Journal of Pediatric Urology Company. Published by Elsevier Ltd. All rights reserved.

* Corresponding author. Tel.: +1 416 813 6460; fax: +1 416 813 6461.
E-mail address: pippi.salle@sickkids.ca (J. Pippi Salle).

http://dx.doi.org/10.1016/j.jpurol.2014.03.005
1477-5131/© 2014 Journal of Pediatric Urology Company. Published by Elsevier Ltd. All rights reserved.

Abbreviations

BMG	buccal mucosa grafts
EAS	endogenous androgen stimulation
BMGU	buccal mucosa graft urethroplasties
FRP	flow rate parameters
VC	ventral curvature
BXO	balanitis xerotica obliterans
SBMGU	staged buccal mucosa graft urethroplasties

Introduction

Buccal mucosa grafts (BMG) have been increasingly used for genitourinary tract reconstruction since first being described by Humby in 1941, who proposed using lower lip grafts to treat cases of hypospadias repair failure [1]. Bracka and Duckett [2,3] later popularized the procedure by mainly using it for attempts at addressing surgical complications from previous hypospadias reconstruction. It was also used for when the use of preputial skin for urethral reconstruction was contraindicated, such as in presence of *balanitis xerotica obliterans* (*liquen sclerosus*, BXO) [2,4—8]. Its use is well supported by clinical and experimental studies that demonstrate suitability for BMG in urethral reconstruction, particularly in comparison to skin and bladder mucosal grafts, due to its favorable angiogenic activity [9].

BMG have been routinely used for the aforementioned purposes in pre-pubertal boys. There are rightful concerns when dealing with long-term follow-up of this group, as following pubertal endogenous androgen stimulation (EAS) a reconstructed neourethra may not grow proportionally to the phallus. Unfortunately, current literature fails to provide a basis for this concern. In order to address the paucity of data on this topic, an observational study was conducted on pre-pubertal boys who underwent staged buccal mucosa urethroplasty (SBMGU) and were followed through puberty. Indirect signs of inadequate BMG growth, such as recurrent ventral penile curvature (VC) and abnormal uroflowmetries, were focused on. It was hypothesized that the grafted tissue would grow in proportion to the rest of the phallus and not lead to the aforementioned complications.

Materials and methods

Following approval by the institutional research ethics board, the medical records of all patients who underwent SBMGU between 2000 and 2010 at a single referral center were retrospectively reviewed. Boys in whom the first stage SBMGU was performed before the age of 12 years and the last follow-up was recorded after puberty were further analyzed. Variables that were captured included: demographic information, initial meatal location, quality of the graft before tubularization, flow rate parameters (FRP) and any complications. The main steps of the surgical technique for SBMGU followed principles that have been previously reported [5].

Results

During the ten-year study period, 137 patients underwent SBMGU. Of these, ten cases met inclusion criteria. Mean patient age at time of first stage SBMGU was eight years (range five to eleven years), with a mean follow-up of 40.6 months (range 9—66 months). Five patients required SBMGU due to complications after tubularized incised plate urethroplasties done at the institution, and five for problems after variable hypospadias repairs done elsewhere. Grafts were harvested from the cheek and lower lip in seven and three cases, respectively. Three cases presented with VC at the first stage repair; these were corrected with ventral relaxing corporotomies and midline dorsal plication in two and one patient, respectively. One patient was re-grafted due to contraction of the original buccal graft. The mean interval between the first and second stage SBMGU was 15.8 months (range 6—87 months). Second layer coverage was possible in five cases: three with dartos and two with *tunica vaginalis* flaps. Complications included one urethrocutaneous fistula and two cases of glanular dehiscence (both after BMG harvested from the cheek). The final position of the meatus was glanular in nine boys and coronal in one. There were no cases of VC recurrence either at the time of second stage SBMGU or at the most recent follow-up. The average maximum flow was adequate for age in all patients (mean 25.7 ml/s).

Discussion

SBMGU is an established technique for urethral reconstruction in both children and adults. Buccal mucosa grafts have the advantages of easy availability and concealed donor areas, along with the presence of a hair follicle-free thick epithelium and a well-vascularized, thin *lamina propria* that improves the chances for revascularization [10]. It is also perceived that BMG are more resistant against infection when utilized for urethral reconstruction, as they are normally exposed to a wet environment [8,11]. Disadvantages of BMG include an additional surgical field and donor site-related complications, which are: transient oral pain in the first postoperative days (83—100%), perioral numbness (16—26%), alterations in saliva production (11%), oral tightness (9—32%), risk of injury to the salivary duct(s) and risk of retraction of the lower lip (if dissection extends close to the vermillion border in this area) [12,13]. Despite these drawbacks, BMG have been extensively used in post-pubertal patients and they seem to fare very well over time in adults with extended follow up [14,15]. Nevertheless, there is scarce information about post-pubertal outcomes in children who have undergone SBMGU before puberty, especially in regard to the growth of the grafts in relation to the rest of the penis. In this particular population there are theoretical concerns regarding adequacy of growth of the graft, despite the fact that androgen receptors have been described in the oral mucosa adjacent to the areas with squamous cell carcinoma of the mouth [16].

Download English Version:

https://daneshyari.com/en/article/4162352

Download Persian Version:

https://daneshyari.com/article/4162352

Daneshyari.com