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Authors
Graves, Claire
Hsi, Ryan
Masic, Selma
et al.

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V12-01

TRANSURETHRAL VENTRAL BUCCAL MUCOSA GRAFT (BMG) INLAY URETHROPLASTY FOR DISTAL URETHRAL STRICTURES

Mourad Abouelleil, Michael Daneshvar, Dmitriy Nikolavsky, Syracuse, NY*

INTRODUCTION AND OBJECTIVES: Traditional options for distal urethral stricture repair involve penile skin incision to achieve access to urethra for various forms of external urethrotomy and subsequent repair with flaps or grafts. These incisions then require meticulous closure and are at risks of fistula formation, glans dehiscence and poor cosmetic outcomes. We introduce a novel surgical technique to repair fossa navicularis stricture without a need for skin incision. Our approach, a modified Naude technique, employs a ventral internal urethrotomy and precise transurethral delivery and fixation of BMG to the surface of the urethrotomy.

METHODS: Surgical technique: a ventral urethrotomy is performed transurethrally and a shallow wedge of the obstructive tissue is removed to achieve access to a proximal patent lumen. Appropriate size BMG is then harvested and prepared for delivery. A double arm 6-0 polydioxanone suture is used: each arm of the suture is passed through the proximal apex of the graft then through the urethra at the proximal apex of the urethrotomy and externalized through the skin. By pulling on the arms of the suture externally the graft is delivered precisely into its place in the urethra. Additional 6-0 double armed sutures are used to quilt the graft at its mid portion and their knots tied externally. The distal edge of the graft is sutured to the edge of the meatotomy with absorbable sutures. A retrospective chart review was conducted of all the patients after a fossa navicularis/ distal urethral stricture repair since March 2014 by a single surgeon (DN). Surgical and functional outcomes including complications were reviewed. Uroflow and SHIM scores were evaluated pre- and post-operatively.

RESULTS: This surgery was performed for 7 patients including 3 circumcised males, 2 uncircumcised males with lichen sclerosus (LS) and 2 transgender patients with neophallus. Mean patient age was 39 years (25-55), mean stricture length 2.6 cm (1-4). At a mean follow up of 8.8 month (4-18), there were no stricture recurrences, fistula, penile chordee or adverse effects on sexual function. Mean uroflow pre-op was 5.5 (0-13), post-op 22 (16-37). SHIM score pre-op 19 (23-25), post-op 23 (22-25).

CONCLUSIONS: We demonstrated the feasibility of incisionless distal urethral/fossa navicularis stricture repair with ventral inlay BMG. This single stage technique allows avoiding skin incision or urethral mobilization. It prevents glans dehiscence or fistula formation. It avoids the use of genital skin flaps in patients affected with LS and is a viable option for patients with distal strictures in a neophallus.

Source of Funding: none

V12-02

MAGNETIC BOWEL ANASTOMOSIS: FIRST-IN-HUMAN MAGNAMOSIS APPLICATION

Claire Graves, Ryan Hsi, Selma Masic, Jill Imamura-Ching, Michael Harrison, Marshall Stoller, San Francisco, CA*

INTRODUCTION AND OBJECTIVES: Bowel anastomosis is a critical component of the development and performance of many complex urologic procedures. Traditional anastomoses are hand-sewn, but staplers have become more commonplace, shortening procedure time and increasing uniformity. However, both methods leave foreign bodies at the site, which can interfere with healing and cause inflammation and stricture. Staplers increase procedure cost, suffer from device malfunction, and are limited in usage due to device size. Magnamosis is a novel device for the creation of compression anastomosis consisting of two self-aligning, symmetric magnetic rings covered in a polycarbonate casing. The device's unique geometry creates a gradient of compression, which promotes necrosis and lumen formation centrally, while allowing for tissue remodeling and healing at the periphery. We have studied the device in over 70 pigs and 10 monkeys, all with excellent results, including burst pressures that were similar to or better than hand-sewn or stapled techniques. We have obtained an FDA Investigational Device Exemption to perform magnetic anastomosis in 10 human subjects to ensure safety and efficacy of the device, and we now report our experience with our first procedure.

METHODS: We performed the first-in-human Magnamosis in a 28 year-old male with neurogenic bladder undergoing creation of a continent catheterizable ileal channel. The 23mm magnets were placed through small ileal enterotomies and arranged in parallel for a side-to-side, functional end-to-end, isoperistaltic configuration. Our technique is further demonstrated in the accompanying video.

RESULTS: The patient tolerated the procedure well with no adverse events. He was restarted on his home bowel regimen postoperatively and resumed bowel function on post-op day 3. The progress of the magnets was followed with serial abdominal x-rays until their uneventful evacuation.

CONCLUSIONS: We report the first-in-human application of the Magnamosis device for magnetic compression anastomosis. Though demonstrated here in open bowel anastomosis, the device has the ability to be deployed using laparoscopic, endoscopic, radiographic, or hybrid techniques in a variety of sizes. This scalable technology can be adapted to a variety of luminal anastomoses, with wide-reaching implications for the future of reconstructive surgery.

Source of Funding: FDA Pediatric Device Consortia Program

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UCSF Department of Surgery

V12-03

A NEW LAPAROSCOPIC MINIMALLY INVASIVE TECHNIQUE OF TRANSPOSING OMENTUM TO PERINEUM FOR RECTO URETHRAL FISTULA.

Sanjay Kulkarni, Pune, India; Guido Barbagli, Arezzo, Italy; Pankaj Joshi, Sandesh Surana, Atef Homuda, Jyotsna Kulkarni, Pune, India*

INTRODUCTION AND OBJECTIVES: Rectourethral fistula is a morbid complication that can occur post trauma, radical prostatectomy, radiation, or after pelvic surgery. The management of these cases can be challenging and might require multiple procedures to achieve a cure. The use of omentum flap between the rectum and the urethra is recommended for its potential benefits in prevention of fistula recurrence. We aim to illustrate the feasibility and safety of a new laparoscopic surgical technique for interposition of omentum in patients with rectourethral fistula (RUF).

METHODS: We performed a prospective case series of 3 patients who presented to our center with PFUI and RUF from September 2014 till October 2014. These patients underwent laparoscopic omentoplasty combined with progressive perineal approach for urethroplasty. The primary study outcome was the success rate of the surgical technique and the secondary outcome was to evaluate feasibility and safety of the procedure. The clinical outcome was considered a failure when any postoperative instrumentation was needed or the recurrence of RUF.

RESULTS: Median age is 30 years old (28-33). All 3 patients had complex PFUI with RUF. They all had an attempt of perineal