

RECONSTRUCTIVE UROLOGY

Complex Posterior Urethral Disruptions: Management by Combined Abdominal Transpubic Perineal Urethroplasty

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Purpose: We present our short-term results of abdominal transpubic perineal urethroplasty for complex posterior urethral disruption.

Materials and Methods: From January 2000 to March 2005, 21 patients with complex posterior urethral disruption underwent abdominal transpubic perineal urethroplasty. Complex disruption was defined as stricture gap exceeding 3 cm or associated perineal fistulas, rectourethral fistulas, periurethral cavities, false passages, an open bladder neck or previous failed repair. Preoperative voiding cystourethrogram with retrograde urethrogram and cystourethroscopy were done to evaluate the stricture and bladder neck. Followup consisted of symptomatic assessment and voiding cystourethrogram.

Results: There were 11 adults and 10 prepubescent boys with an average age of 26 years (range 6 to 62). Mean followup +/- SD was 28 months (range 9 to 40). Mean stricture length was 5.2 +/- 1.4 cm. Of the 21 patients 12 had previously undergone failed urethroplasty. The mean period between original trauma/failed repair and definitive repair was 10.2 +/- 4.3 months. Urethroplasty was achieved through the subpubic route in 16 patients, while 5 required supracrural rerouting. In 20 of 21 patients (95%) postoperative cystourethrography showed a wide, patent anastomosis. Postoperative incontinence developed in 2 of 21 patients (9.5%). Seven of the 21 patients (33%) were impotent after the primary injury, while 3 of 14 (21.4%) had impotence postoperatively. There were no complications related to pubic resection, bowel herniation or periurethral cavity recurrence.

Conclusions: Combined abdominal transpubic perineal urethroplasty is a safe procedure in children and adults. It allows wide exposure to create a tension-free urethral anastomosis without significantly affecting continence or potency. Complications of pubic resection are now rarely seen.

A Comparison of One-Stage Procedures for Post-Traumatic Urethral Stricture Repair

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Objective: To compare the results and complication rates of various one-stage treatments for repairing a post-traumatic urethral stricture.

Patients and Methods: The medical records of 153 patients who had a post-traumatic urethral stricture repaired between 1977 and 2003 were evaluated retrospectively, and analysed for the different types of urethral reconstruction.

Results: The procedures included direct end-to-end anastomosis in 86 (56%) patients, free dorsal onlay graft urethroplasty using preputial or inguinal skin in 40 (26%), ventral onlay urethroplasty using buccal mucosa in seven (5%) and ventral fasciocutaneous flaps on a vascular pedicle in 20 (13%). At a mean (median, range) follow-up of 75.2 (38, 12-322) months, 121 (79%) patients had no evidence of recurrent stricture, while in 32

men (21%) they were detected at a mean follow-up of 30.47 (1-96) months. Patients having a dorsal onlay urethroplasty had the longest strictures. The re-stricture rate was lowest after a dorsal onlay urethroplasty (5% vs 27% when treated with end-to-end anastomosis, 15% after fasciocutaneous flaps and 57% after a ventral buccal mucosal graft). The surgical technique used had no effect on postoperative incontinence or erectile dysfunction rates.

Conclusion: In patients with strictures which are too long to be excised and re-anastomosed, tension-free dorsal onlay urethroplasty is better than ventral graft or flap techniques. In patients with short urethral strictures direct end-to-end anastomosis remains an option for the one-stage repair of urethral stricture.

Editorial Comment

Certain cases of urethral disruption early surgical the re-alignment is immediately indicated (e.g. involvement of the rectum, wide separation of bladder and urethra, bladder or bladder neck injury). All other cases late intervention can be performed after immediate supply with a suprapubic catheterization after 3 – 6 months allowing the resorption of the retropubic hematoma, if no surgeon with extensive experience of the various techniques of primary open realignment is available. As an attractive option the early endoscopic realignment might be the best solution, using suprapubic and transurethral approach, on the one hand resulting in prevent the dislocation of the urethral stumps and the rapid transurethral drainage, on the other hand avoiding common complications of an early open approach (e.g. bleeding, higher stricture and impotence rate). The very disadvantage of this endoscopic technique is its dependence on especially skilled surgeons and their equipment. A prospective study would help to facilitate the final decision-making between early open, endoscopic and late reconstruction in the future, but barely possible because if the small incidents, until then the classification of the posterior urethral injuries might help (1,2).

Opposite to the presented data, probably most of the pelvic floor urethral distraction defects can be managed by a one-stage perineal anastomotic urethroplasty in the exaggerated or high lithotomy position. Webster suggested certain maneuvers to achieve to shorten the distance of the defect: a) further circumferential mobilization of the distal urethra (2-3 cm), b) separation of the corporal bodies (1-2 cm), c) inferior pubectomy (1-2 cm), d) supra-crural re-routing after creating a tunnel in the bone beneath the corporal bone with a pubectomy (1-2 cm). Those maneuvers might help to manage defects up to 9 cm (3).

The abdominal-perineal approach as used by the authors should be performed to improve the visualization and to remove fistula tracts, periurethral epithelialized cavities, to excise scar tissue at the prostate and to perform a tension-free-anastomosis (4, 5). To have such a high success rate as reported by the authors an experts hand is required, particularly given the fact that approximately half were prepubescent, which is even better than the present literature (4-7). Beside the suggested use of a cremaster flap, which is an elegant approach, the gracilis muscle interposition can be suggested to manage perineal fistulas, recto-urethral fistulas or even to protect the anastomosis the support might be better and the possibility to use it to reconstruct the continence mechanism (8). The blood loss seems to be small in regard to the invasiveness of the surgical approach. Overall, the authors can be congratulated to the result of their surgical approach.

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Female Urethral Strictures: Successful Management with Long-term Clean Intermittent Catheterization after Urethral Dilatation

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Objective: To report our experience in the diagnosis and treatment of urethral stricture in women.

Patients and Methods: A retrospective review of records and video-urodynamics identified women treated for urethral stricture between 1999 and 2004 at one institution by one surgeon. Urethral stricture was defined as a fixed anatomical narrowing between the bladder neck and distal urethra of <14 F preventing catheterization, and the diagnosis was confirmed by cysto-urethroscopy, and/or video-urodynamics. Women with a history of external beam radiotherapy to the pelvis, or of gynaecological, urethral or bladder malignancy, were excluded, and the women had a urethral biopsy to exclude a malignant cause of the stricture. Initial treatment consisted of urethral dilatation to > or = 30 F. After a period of indwelling catheterization, the women were placed on clean intermittent self-catheterization (CISC) at least once daily, and monitored every 3-6 months. At each follow-up, the urethra was catheterized to exclude recurrence. American Urological Association (AUA) symptom scores were obtained at presentation and at the initial 3 month follow-up.

Results: Seven women met the criteria for urethral stricture, and were followed for a mean (range) of 21 (6-34) months. All were initially maintained on daily CISC, and some were gradually reduced to weekly CISC for the duration of follow-up. No patient had a recurrent stricture while on CISC, and none has had a urethral reconstruction to manage their condition. AUA symptom scores improved in all of the women by a mean of 10.7 points. No complications related to catheterization were noted.

Conclusion: Urethral stricture is rare in women. Long-term CISC in these women is safe and effective, and can avoid the need for major reconstructive surgery.

Technique and Results of Urethroplasty for Female Stricture Disease

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Purpose: Urethral stricture disease in females is uncommon and is often treated with repeat dilation or internal urethrotomies. Various surgical techniques to repair strictures have been described with successful results. However, these techniques are cumbersome to use. The vaginal inlay flap is simple and easy to learn. To our knowledge this is the first report of its use and clinical results in a series of patients from 2 institutions. **Materials and Methods:** Eight symptomatic women with a history of traumatic or difficult catheterization, a history of at least 1 urethral dilation or urethrotomy and difficult or a failed attempt at catheter placement underwent urethroplasty. The technique consisted of incising the posterior aspect of the stricture and advancing a vaginal inlay flap. A retrospective chart review was performed.

Results: Followup was 1 to 9 years. All patients had subjective relief of symptoms and could easily catheterize with a 14Fr catheter. Average caliber of the urethra increased from 9.25Fr to 16.5Fr and post-void residual urine decreased from 130 to 15 cc. One patient with a hypotonic bladder was in retention, which resolved during 3 months. One patient underwent repeat dilation once 3 weeks after the primary procedure with no recurrence. No patient had stress urinary incontinence. There were no immediate or delayed serious complications.

Conclusions: Urethral stricture disease in females is an uncommon entity that can cause voiding symptoms, recurrent infections, retention and renal impairment. This method of surgical repair offers a durable result and has a low incidence of complications.

Editorial Comment

Although the urethral stricture in female is uncommon recently two papers with a different therapeutic approach were published. In the first study progressively the stricture was dilated with up to a 30F sound. In the follow-up of up to 39 months the patients performed clean intermittent self-catheterization. Three of them (38%) needed additional re-dilatation (Smith et al.). Probably the dilatation up to 30F causes a rupture of the stricture and it needs to be asked if this cause new fibroses in even the former normal urethra. The re-stricture might be avoided by the regular dilatation by the clean intermittent self-catheterization.

The surgical urethroplasty performed by Swender et al. with an intraoperative urethral diameter of 22F, remains in a urethral diameter in mean 16.5F after a follow-up of up to 9 years similar to the published data of Montorsi et al. of 17 women with a follow-up of 12 months (1). Except one patient none of the women needed a further treatment. All were able to perform clean intermittent self-catheterization. On the other hand the dilatation did not cause in any of the cases urinary stress incontinence whereas after the urethroplasty two patients had had stress incontinence (see Swinder et al., Table 2).

Parameters are probably needed to decide who is suitable for dilatation and who for the urethroplasty to improve the outcome further. Perhaps, we are too conservative when contemplating surgical correction for female urethral stricture. On the other hand, although simple techniques are at hand, skilled surgical expertise is requested to protect the sphincteric mechanism (2). The videourodynamics and intraurethral ultrasound might become diagnostic tools in order to choose the best approach, but successful application of surgery calls for adequate clinical experience (3).

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UROLOGICAL ONCOLOGY

Delay of Radical Prostatectomy and Risk of Biochemical Progression in Men with Low Risk Prostate Cancer

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Purpose: Men newly diagnosed with prostate cancer are faced with multiple treatment options. Understanding these options and their associated side effects, and making a decision often requires time, resulting in a delay before receiving treatment. This is particularly pertinent in men with low risk disease who may be considered candidates for watchful waiting and, thus, may not experience strong pressure to undergo treatment promptly. Whether delays and especially prolonged delays, eg greater than 180 days, before RP negatively impact the disease outcome is unclear.

Materials and Methods: We examined the association between time from diagnosis to surgery, and pathological features of the RP specimen and risk of biochemical progression in 895 men with low risk prostate cancer (prostate specific antigen less than 10 ng/ml and biopsy Gleason sum 6 or less) treated with RP between 1988 and 2004 in the Shared-Equal Access Regional Cancer Hospital Database using logistic regression and Cox proportional hazards, respectively.

Results: Time from biopsy to surgery was not significantly related to high grade disease in the RP specimen, positive surgical margins or extraprostatic extension (all p-trend >0.05). After adjustment for multiple clinical covariates a longer time from biopsy to surgery was significantly associated with an increased risk of biochemical progression (p-trend = 0.002). However, this increased risk of progression was only apparent in men with delays greater than 180 days (median 263, vs 90 or fewer days RR 2.73, 95% CI 1.51 to 4.94).

Conclusions: Our data suggest that patients with low risk prostate cancer can be reassured that immediate treatment is not necessary. Whether long delays (greater than 180 days) decrease the likelihood of curability in some patients requires further study.

Editorial Comment

In contrast to the recent papers on surgery delay in bladder cancer a delay in radical prostatectomy for prostate cancer does not seem to be of equal consequences.