Editorial Comment

This is an interesting animal model study comparing the two most common methods of nephrostomy tract dilation in USA; Amplatz sequential fascial (ASF) dilators and balloon dilators. The study aimed to determine whether any significant differences in renal trauma were present between the two techniques both acutely (immediate to 24 hours) and chronically (at 4 to 6 weeks) in pgs. The authors chosen the best animal model for this kind of analysis, since the renal collecting system, the intrarenal arteries and the kidney morphometric parameters are very similar between pigs and humans (1,2).

The analysis was macroscopic and microscopic. The histologic examination at 24 hours showed no apparent differences, except for the degree of hemorrhage, which was slightly more in the ASF dilated tracts. However, in the specimen removed at 4 to 6 weeks after ASF dilation, slightly more inflammation with abscess formation was present in the ASF dilated tracts than in the balloon-dilated tracts.

The slight differences were not significant and the authors demonstrated that the use of either method of dilation had no difference in terms of the degree of renal parenchymal trauma. Therefore, they concluded that the method of dilation is a matter of physician preference and experience.

References

1. Sampaio FJ, Pereira-Sampaio MA, Favorito LA: The pig kidney as an endourologic model: anatomic contribution. J Endourol. 1998; 12: 45-50.
2. Pereira-Sampaio MA, Favorito LA, Sampaio FJ: Pig kidney: anatomical relationships between the intrarenal arteries and the kidney collecting system. Applied study for urological research and surgical training. J Urol. 2004; 172: 2077-81.

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RECONSTRUCTIVE UROLOGY

New Technique of Total Phalloplasty with Reinnervated Latissimus Dorsi Myocutaneous Free Flap in Female-to-Male Transsexuals

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From December 2001 to September 2005, the technique of total penile reconstruction with a reinnervated free latissimus dorsi myocutaneous flap was used in 22 patients (24-38 years old) with gender dysphoria. These patients were followed up for at least 11 months (range, 11-44 months). All flaps survived. Complications include hematoma (7 cases), vascular thrombosis (2 cases), partial necrosis (1 case), excessive swelling of the

neophallus (3 cases), and skin graft loss at the donor site (1 case). Of the 19 patients included in the final evaluation, the transplanted muscle was able to obtain contraction in 18 (95%) cases and 8 patients (42%) had sexual intercourse by contracting the muscle to stiffen and move the neopenis. The described technique of neophalloplasty proved to be a reliable technique and the muscle movement in the neophallus can be expected in almost all cases. The muscle contraction in the neophallus leads to "paradox" erection-stiffening, widening, and shortening of the neopenis, which allows for sexual intercourse in some patients. Subsequent reconstruction of the urethra is possible.

Editorial Comment

Functioning free muscle flaps have recently been shown to successfully restore volitional voiding in patients with acontractile bladders (1). Apart from the anastomosis of the flap, vasculature to suitable vessels at the recipient site function is achieved by microsurgical coaptation of the motor nerve supplying the flap muscle to a recipient motor nerve supplying an abdominal muscle. The transferred muscle starts acting as a "piggyback" muscle to the same muscle with which it shares its new innervation.

The authors of this paper have applied the same principle for phalloplasty in female-to-male transsexuals. In addition to obtaining a neophallus, the majority of patients were able to contract the muscle after a mean of 4 months. Almost half of the patients used the muscle contraction to stiffen the penis and were thus able to have intercourse.

Contrary to the sole use of latissimus dorsi muscle in detrusor, myoplasty phalloplasty needs a large portion of the overlying skin similar to musculocutaneous flaps used for breast reconstruction. Therefore, the rate of donor site morbidity was larger than previously reported (2), but according to the authors, 83 % considered donor site morbidity as acceptable.

The fact that no urethral reconstruction was done in these patients may be seen as a downfall. However, the possibility of actively stiffening the neophallus may be appealing for some patients. The mean follow-up of almost two years with some patients just followed for a year is too short. Some patients apparently had considerable shrinkage of the graft and this number might get larger with a longer follow-up. However, the concept of using a functioning muscle transfer for phalloplasty is worth to be considered and shows furthermore the possible versatility of this technique applicable in various fields of urology.

References

1. Stenzl A, Ninkovic M, Kölle D, Knapp R, Anderl H, Bartsch G: Restoration of voluntary emptying of the bladder by transplantation of innervated free skeletal muscle. Lancet. 1998; 351: 1483-5.
2. Ninkovic M, Stenzl A, Schwabegger A, Bartsch G, Prosser R, Ninkovic M: Free neurovascular transfer of latisstmus dorsi muscle for the treatment of bladder acontractility: II. Clinical results. J Urol. 2003; 169: 1379-83

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Porcine Small Intestinal Submucosa Graft for Repair of Anterior Urethral Strictures

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Objectives: We evaluated porcine small intestinal submucosa (SIS) used in the treatment of inflammatory, iatrogenic, posttraumatic, and idiopathic strictures of bulbar and penile urethra. Midterm maintenance of urethral patency was assessed.
Methods: Fifty patients aged 45-73 yr with anterior urethral stricture underwent urethroplasty using a porcine SIS collagen-based matrix for urethral reconstruction. Stricture was localized in the bulbar urethra in 10 patients, the bulbopenile area in 31 cases, and in the distal penile urethra in nine patients. All patients received a four-layered SIS patch graft in an onlay fashion. A voiding history, retrograde and antegrade urethrography, and cystoscopy were performed preoperatively and postoperatively. Failure was defined as stricture confirmed on urethrogram.
Results: After a mean follow-up of 31.2 mo (range: 24-36 mo), the clinical, radiological, and cosmetic findings were excellent in 40 (80%) patients. Restricture developed in one of 10 bulbar, five of 31 bulbopenile, and four of nine penile strictures. These all occurred in the first 6 mo postoperatively. All patients with recurrences needed further therapy, but there has been no additional recurrence observed to date. No complications such as fistula, wound infection, UTI, or rejection were observed.
Conclusions: Use of inert porcine SIS matrix appears to be beneficial for patients with bulbar and bulbopenile strictures. Midterm results are comparable to skin flaps and mucosal grafts.

Editorial Comment

Several recent reports have used porcine small intestinal submucosa (SIS) produced either commercially or by individual laboratories as a substitute for autologous flaps in urethral stricture surgery. The initial experimental results were promising (1,2), however, clinical results were mixed (3).

When using porcine acellular matrix, it might be applied either alone functioning as a scaffold for the ingrowths of the neighboring healthy urethra or together with cultivated urothelial cells as urethral wall substitute.

The authors of this contribution used commercially available porcine SIS in an onlay fashion for bulbar, bulbopenile, and distal penile urethral defects after careful excision of strictured urethral segments. The results were acceptable for bulbar strictures but clearly unsatisfactory for penile and bulbopenile strictures. One should be cautious with the interpretation of the results in bulbar strictures: one of ten patients with bulbar stricture surgery recurred after 24 – 36 months. Considering the small number in this subgroup and the possibility of further recurrences with longer follow-up one has to question the use of xenogenic acellular matrices over autologous free flaps such as buccal mucosa. Recent experimental studies have shown that at least in commercial products there are nuclear remnants identifiable within the matrix of the presumably acellular small intestinal submucosa suggesting possible remnant donor DNA (4). Under in vitro conditions, it was also seen that human urothelial cell growths was grossly impaired. Furthermore, SIS so far did not yield any other obvious benefit for patients nor does it help to reduce any surgical costs. We therefore have to continue our search for suitable biomaterials in urethral reconstructive surgery. Until we succeed to find something current standard techniques such as buccal mucosa are the best and safest choice.

References

1. Kropp BP, Ludlow JK, Spicer D, Rippy MK, Badylak SF, Adams MC, et al.: Rabbit urethral regeneration using small intestinal submucosa onlay grafts. Urology. 1998; 52: 138-142.

2. Sievert KD, Bakircioglu ME, Nunes L, Tu R, Dahiya R, Tanagho EA: Homologous acellular matrix graft for urethral reconstruction in the rabbit: histological and functional evaluation. J Urol. 2000; 163: 1958-1965.
3. Santucci RA, Barber TD: Resorbable extracellular matrix grafts in urologic reconstruction. Int Braz J Urol. 2005; 31: 192-203.
4. Feil G, Christ-Adler M, Maurer S, Corvin S, Rennekampff HO, Krug J, et al.: Investigations of urothelial cells seeded on commercially available small intestine submucosa. Eur Urol. 2006; 50: 1330-7.

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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 detrimental effects of delaying radical therapy in bladder cancer too long, the effect in prostate cancer treatment is different. Here, the window is open for a longer time, but still begins to close