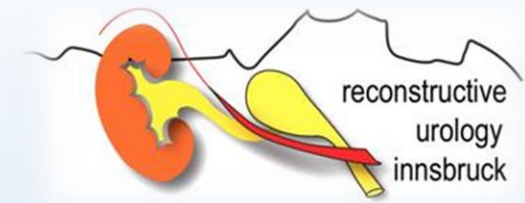


Urethral elongation by bladder wrapping and placement of an artificial urinary sphincter (AUS)

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INTRODUCTION AND OBJECTIVE

The loss of the urethra with subsequent urinary incontinence is a challenge. Urinary diversion is one option. We investigated the possibility of urethral “reconstruction” by distal bladder wrapping, followed by artificial urinary sphincter (AUS= AMS 800) placement.

METHODS

In this pilot study five patients (4 female ♀, 1 male ♂) were included that lost their urethral function either through severe pelvic trauma (n=4 ♀) or previous cuff erosion in a patient with AUS and paraplegia/ myelomeningocele (n=1 ♂). As the urethra was either absent or severely scarred, an AUS cuff could not be placed in the standard fashion at the bladder neck. The urethra was lengthened by wrapping the trigonal area into a tube. The AUS cuff was then placed around healthy and non-scarred tissue. Ureteroneostomies were performed as necessary. Post operatively after 6-8 weeks the AUS was activated.

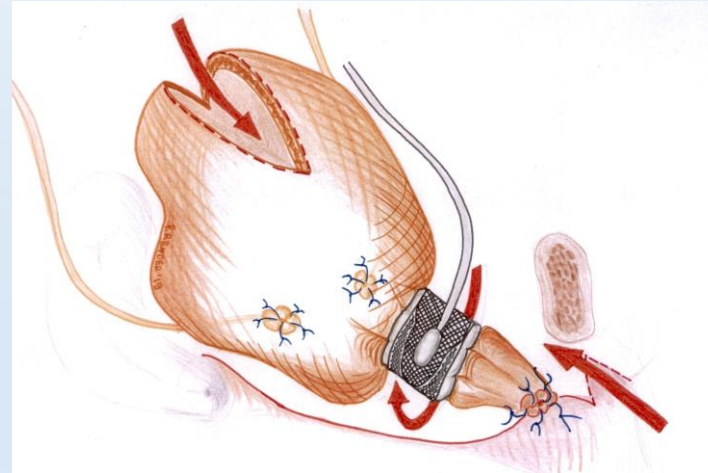


Figure 2:
AUS cuff placement around neo-urethra reconstructed from distal bladder outlet +/- ureteroneostomies. Planes of operative access from suprapubic extravesical, extraperitoneal and retroperic. Open bladder to control going around trigone. Infrapubic dissection to prepare urethral neostomy. Cuff placed around healthy and non-scarred tissues.

RESULTS

All patients were continent after AUS activation. The average age was 33 years at the time of surgery, and the mean follow-up was 6,9 years. Cuff sizes used: 4.5, 6.5, 8, 8 (all ♀) and 10 cm (♂). Three patients with myelomeningocele needed intermittent clean self-catheterization (CICS) to void. One patient needed an ureteroneostomy for a single ureter in a single duplex kidney. The two patients after severe pelvic trauma could void spontaneously. One female patient needed a urethral neomeatus dilatation for post-operative meatal stenosis. During follow-up two patients became pregnant and delivered healthy babies (one spontaneous transvaginal birth, one cesarean section in a patient with myelomeningocele). The only male patient (myelomeningocele and paraplegia) developed an infection and needed AUS explantation, in due course a cystoprostatectomy and an ileum conduit.



Figure 1:
The absence of the urethra necessitates wrapping of the trigone to effectively create a neo-urethra with placement of a cuff around it.

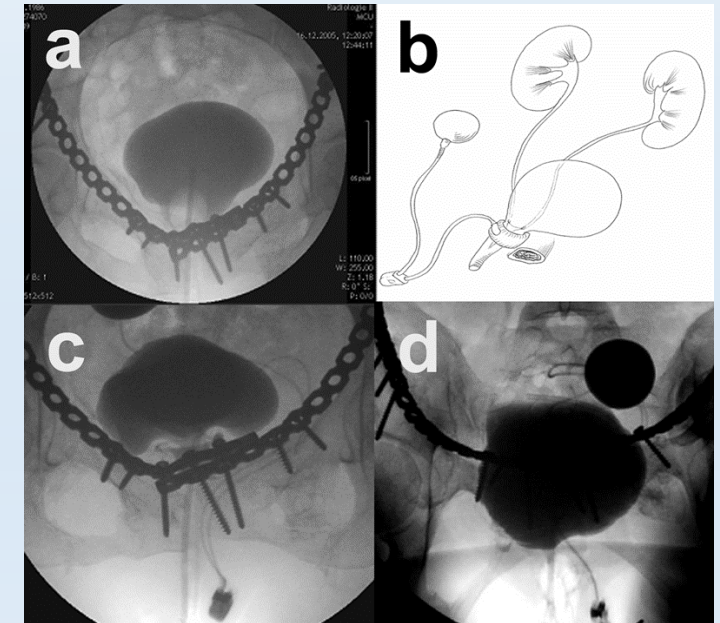


Figure 3:
A: Pre-operative situation with balloon obstructing bladder neck.
B: Very proximal position of AMS 800 cuff.
C: Cuff well above symphysis with bladder “overlapping” over sides.
D: Spontaneous voiding after opening cuff by operating/ pressing labial pump.

CONCLUSIONS

- 1) With a follow-up of close to seven years the circumtrigonal cuff placement seems to be a useful alternative in female patients that lost urethral function.
- 2) Wrapping of the bladder outlet, proximal to the bladder neck to configurate a neo-urethra, seems promising in select complex cases of total urinary incontinence with an absent urethra, especially in young females.