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ARTIFICIAL URINARY SPHINCTER PLACEMENT PRESERVING THE BULBOSPONGIOSUS MUSCLE: IS IT POSSIBLE TO DECREASE URETHRAL EROSION/ATROPHY RATE?

HYPOTHESIS / AIMS OF STUDY

Artificial urinary sphincter AMS-800 ® (AUS) is an effective treatment for male stress urinary incontinence (SUI). However, several complications, such as infection, urethral erosion (6%), urethral atrophy (9.6%), recurrent incontinence and mechanical problems have been reported.

Usually, the bulbospongiosus muscle is open in the midline and the cuff is placed on the exposed bulbous urethra. In our opinion, AUS placement preserving this muscle could decrease the risk for injury the urethra during the sharp dissection of the dorsal urethra wall (often unnoticed) and could preserve the blood flow. Otherwise, muscle atrophy during follow-up could compromise the continence.

The aim of study is to assess the long-term effectiveness and complications with this technique.

STUDY DESIGN, MATERIALS AND METHODS

From September 2003 to August 2011, fifty-nine male patients with SUI caused by intrinsic sphincter deficiency were treated with the AMS 800 ®.

Continence was evaluated with a 24-Hour Pad Weight (24h-PW) test (>400 grams were considered for AUS) and International Consultation on Incontinence-Short Form Score (ICIQ-UI SF). Pre-operative urodynamic assessment and cystoscopy was performed.

Surgical technique consisted of a perineal incision for cuff placement around the bulbous urethra (preserving the bulbospongiosus muscle) and a transverse abdominal incision for pressure regulating balloon (61 to 70 cm H₂O pressure).

Cure rate was defined as no pad use. Preoperative findings were correlated with outcome.

RESULTS

Follow-up ranged from 3 to 95 months (median 30 months). Mainly, we used a 4.5-cm cuff in 35 patients (59%) and 5 cm in 14 (24%). Twenty-two patients had surgery for anastomotic stricture, 13 patients of salvage radiotherapy and 35 patients had adverse urodynamics. Pre-operatively, median 24h-PW was 1500 grams (220-4538),

The overall cure rate was 78%. The median ICIQ-UI score improved from 17 (8-21) to 3(0-21) ($p < 0.001$). Urodynamic parameters ($p = 0.725$) and previous radiotherapy ($p = 0.135$) did not correlate with a worse surgical outcome. Two patients presented perineal haematoma, one patient presented transitory acute urinary retention and 7 reported irritative urinary symptoms.

Surgical revision rate was 14%: infection of the device (1 patient), cuff erosion (1 patient, 2%) (radiotherapy and cryotherapy, 2 months follow-up), pump relocation (2 cases) and mechanical failure (4 patients).

Nine patients lost their continence during follow-up: 4 patients (7%) due to mechanical failure and five (8%) due to urethral atrophy and/or inadequate compression (median 68 months, range 36-84).

INTERPRETATION OF RESULTS

The point of preserving the bulbospongiosus muscle is to lower the rate of urethral erosion. Basically, this would decrease the probability of damaging the posterior urethral wall, but preserving the muscle could increase the risk of atrophy/inadequate compression during the follow-up. However, with this technique continence our results are positive and similar to those obtained with the standard procedure. We did not observe a high rate of urethral atrophy/inadequate compression during followup with a low rate of cuff erosion.

CONCLUDING MESSAGE

The AMS 800 offers good long-term continence. The low number of adverse events (atrophy/urethral erosion) in the literature makes it difficult to compare results. However, our study suggests that AUS placement preserving the bulbospongiosus muscle has a urethral erosion/atrophy low rate without to compromise continence results.

Disclosures

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