

## DOUBLE CUFF AMS 800 ARTIFICIAL URINARY SPHINCTER AND SACRAL NEUROMODULATION IN COMPLEX SITUATION OF MALE INCONTINENCE

### Hypothesis / aims of study

The AMS 800 artificial urinary sphincter (AUS) has become the standard treatment in incontinence after radical prostatectomy.

Success rate reported by different authors is around 85 % but in patients submitted to radiotherapy or previous urethral surgery the percentage of complications increases.

After the introduction of the initial model by Scott in 1972 the AUS has undergone to improvements arriving to the gold standard model AMS 800. Main complications of AUS are infection, erosion and mechanical failure.

During the time different proposals were reported to decrease complication and to use a less invasive approach for implant. Brito reported in 1993 the use of double cuff to treat patients with persistent incontinence after the normal implant (1)

Other series of patients with double cuff were reported by other authors (2-3).

We report the follow up of 16 patients with complex situation of incontinence submitted to double cuff implant starting from 2001 with mean follow up of 36 months.

### Study design, materials and methods

Sixteen male patients, age 51-82, mean 63 years, 11 after radical prostatectomy (2 perineal procedures), 2 with ileal reservoir after cystectomy for bladder cancer (Paduan Ileal Bladder) 1 with incontinence due to Spina Bifida and 2 after prostate transurethral resection, were evaluated for severe urinary incontinence. Nine patients had previous radiotherapy.

Five patients had a previous AMS 800 single cuff implant with erosion, the patient with spina bifida was submitted to 3 previous implants with cuff at bladder neck with failure.

One patient had a previous sacral neuromodulation implant to treat detrusor overactivity. Bulking agents to treat incontinence were used previously in 5 patients without consistent results.

All patients were submitted to double cuff AMS 800 implant, in patients after erosion the procedure was performed after more than six months from the event and after a retrograde urethrography to ensure restoration of the urethral lumen.

Fourteen patients received two 4.5 cm. cuff, one patient two 4.0 cm. cuff and one patient a proximal cuff 4.5 cm and a distal 4.0 cm. All patients received 61-70 cm. H<sub>2</sub>O reservoir.

In four patients the transverse scrotal approach described by Wilson was used, two implants were performed in local anaesthesia.

### Results

Eleven patients are completely dry after the activation of the system, mean follow up is 36 months (10-52 months) ; the two patients with bladder reservoir use self catheterization after sphincter activation, the same in spina bifida patient. Four patients maintained incontinence due to "de novo" bladder overactivity. In these cases, after treatment with antimuscarinic drugs without results, we performed a percutaneous staged sacral neuromodulation implant restoring complete continence in one and satisfactory continence with use of one pad in the other patient.

In one patient we had again cuff erosion after 3 months from the implant with explant of the system and one patient is still incontinent due to neurogenic overactive bladder for cervical myelopathy and the system is actually deactivated.

### Interpretation of results

In male severe stress urinary incontinence AMS 800 urinary sphincter is the gold standard.

The change in urethral tissue due to radiotherapy has been for a long period a situation at high risk for cuff erosion. No useful results are obtained with bulking agents in these patients.

The introduction of the possibility to use double cuff permits to decrease pressure at urethral level, increasing the surface of closure, obtaining continence.

In patients after explant of the system for erosion this procedure has been a good solution to manage again incontinence with artificial urinary sphincter.

In some patients after radical prostatectomy coexists incontinence due to overactive bladder and the associated implant of sacral nerve stimulator has been a good solution in non responder to antimuscarinic therapy.

Upper transverse scrotal incision is an interesting new option for the implant and in selected patients can be performed in local anaesthesia.

### Concluding message

The use of prosthetic device carries the possibility of problems such as erosion especially in patients after radiotherapy.

Introduction of the double cuff system in controlling urinary leakage permits to manage patients after erosion o a single cuff. Ancillary treatments to control detrusor overactivity are usefull in presence of AUS.

Our experience confirm the success rate of this method and suggest to use it as first option in patients with high risk of erosion.

#### References

Brito C ,J Urol 149,283-285,1993

Kowalczyc J Urol 156,1300-1301,1996

Kabalin J J Urol 156, 1302-1304,1996

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