USING STRESS-RELIEF CUFF TO IMPROVE URINE LEAKAGE AFTER ARTIFICIAL URINARY SPHINCTER IMPLANTATION

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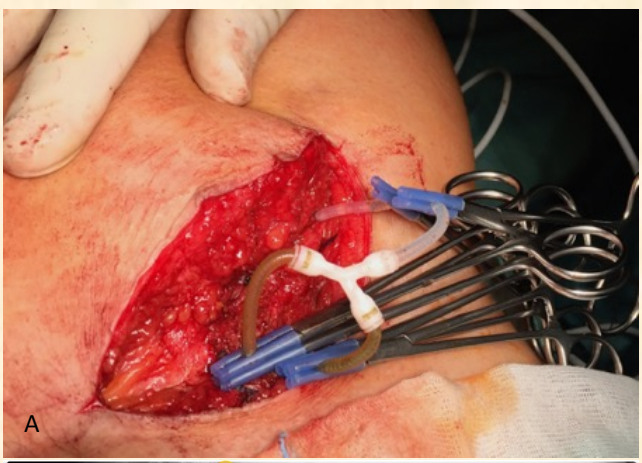
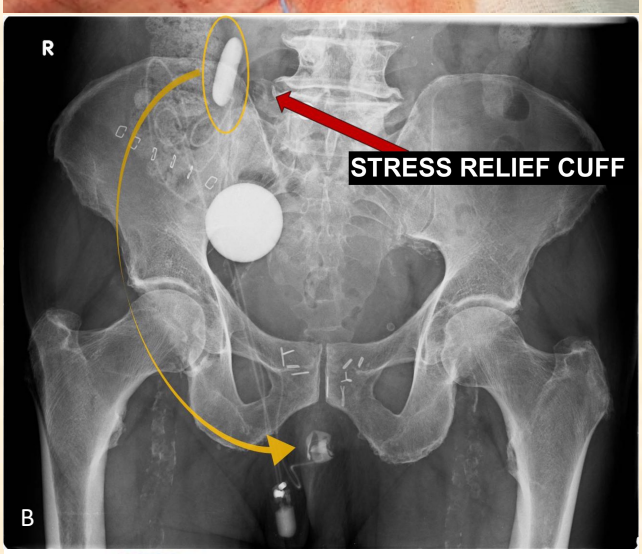
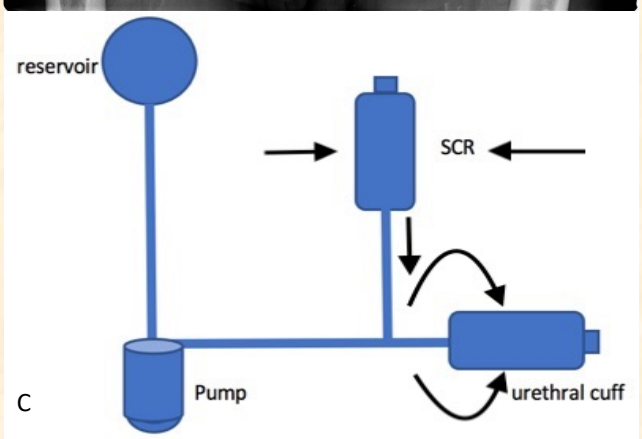
ABSTRACT 104

Figures: A- Additional stress- relief cuff is connected to the AMS 800 via Y conector and implanted into the abdominal cavity. The cuff is filled with 2ml of saline solution; **B-** Plain scan of the abdomen postoperatively. **C-** During the intra-abdominal pressure increase, the pressure acting on SRC is spontaneously transmitted directly to the cuff around the urethra.







HYPOTHESIS / AIM OF THE STUDY

Men undergoing radical prostatectomy for prostate cancer frequently report the troublesome symptom of stress urinary incontinence (SUI). Prevalence estimates vary widely between 5% and 57% depending on definition, timing of assessment after surgery, and population characteristics. The rate of recovery of continence plateaus at around 12 months after surgery. The artificial urinary spincter (AUS) AMS 800 (American Medical Systems, Minnetonka, MN) has been proven and achieved the gold standard status for the treatment of stress urinary incontinence in men with regard to the long term follow up outcomes [1].

However, some patients report about urine leakage during higher Intra-abdominal pressure after AUS-placement. To address this issue, in order to improve the continence results of these patients, we placed a stress-relief cuff (SRC) in addition to the standard occluding cuff (OC) and the pressure regulating balloon. This manouver was part of a second procedure, where SRC was implanted extra-peritoneally in the lower abdomen, to provide additional pressure to the OC.

As the SRC we used a standard cuff from (AMS 800) which was connected to the system between OC and the pump via Y connector.

To the best of our knowledge, we are the first referral center for the male SUI, who investigated placing a stress-relief cuff after AUS.

METHODS

In total 211 AUS were placed in the time between 1/2008 and 12/2017. SRC was indicated in 9 (4,3%) patients with persistence involuntary leakage of urine that occurs when intra-abdominal pressure rises. We used a telephone questionnaire to collect postoperative data as daily pad use and satisfaction rate. Average age at time of the SRC-placement was 70.7 (9.6) months. The device was placed at an average time of 18.2 months (M = 18.5) after the AUS-implantation and the mean follow-up time was 21 (M= 6) months (range 2 to 80 months).

Routinely 2 ml (sterile saline solution) in the first 6 cases and later 4 ml for the remaining cases were instilled in the SRC. In that way , intra-abdominal pressure peaks are transferred to the OC, thereby increasing the occlusive pressure for the limited time.

RESULTS

In all 9 cases the device was easily implanted and there were no intraoperative complications. Pad use per day (p/d) after placing the SRC improved from 3.1 (±1,3) to 2.0 (±1,4); p/d (p = .001). 2 patients with neurogenic bladder disorder and multiple previous abdominal surgeries used an equal number of pads after SRC, however an improvement when sneezing and during physical exertion was reported. Continence was rated as "good" or "satisfactory" by 6 patients (66.7%) and the satisfaction rate was 88.9% (n =8). 7 patients (77.8%) would undergo the procedure again and 8 (88.9%) would recommend it to others.

INTEPRETATION OF THE RESULTS

Our objective findings can be explained as follows: a) in almost 1/4 of patients we did not observe any significant improvement, because of the selection bias and the fact that patients with neurogenic voiding disorders are not ideal candidates; b) secondly patient's after multiple abdominal surgeries were non-responders. This concept appears to be satisfactory and may be improved when adding 4ml to the system.

CONCLUSIONS

The persistence of urinary incontinence after AUS-implantation is a challenging topic. Implantation of a stress-relief cuff in well selected patients suffering from urine leakage during higher intra-abdominal pressure is safe, minimally invasive and offers new options to improve the proven long-term record of AUS. Certainly, more investigations are needed to determine the clinical relevance of this approach.

REFERENCES

1. **Van der Aa F, Drake MJ, Kasyan GR, Petrolekas A, Cornu JN; Young Academic Urologists Functional Urology Group.** The artificial urinary sphincter after a quarter of a century: a critical systematic review of its use in malenon-neurogenic incontinence. Eur Urol. 2013 Apr;63(4):681-9.