Aims of course/workshop

Urinary incontinence post radical prostatectomy has a negative impact on the Quality of Life and the treatment is a challenge. The aim of the workshop is not only to give a comprehensive overview of the current aspects of male urinary incontinence, but also sets out to clarify the approach to treatment of PPI in order to reduce both duration of incontinence periods for patients and costs of therapy caused by wrong decision making in a multidisciplinary fashion. As certain diagnostic findings allow for different approaches the focus will not only be on new options, but even more on limitations of different methods in order to avoid of failures. Physical therapists and urologists will therefore discuss the current options for an optimal couns

Learning Objectives

After this workshop participants should be able to:

- Understand function of Implants for male incontinence
- Make decisions on necessary diagnostics
- Differential indications based upon knowledge of contraindications
- Update on latest developments

Target Audience

Urologist, physiotherapist, physiatrists, nurse, continence advisors interested in male urinary incontinence

Advanced/Basic

Advanced

Suggested Reading


Wilhelm A. Huebner

Urinary incontinence post radical prostatectomy has a negative impact on the Quality of Life. The treatment of urinary incontinence in men is a challenge. With the increase of diagnosis and surgical treatments of prostatic cancer, the number of patients with urinary incontinence will increase.

A comprehensive overview of the current diagnostic techniques will be presented, an experienced physical therapist will provide a basic non surgical management and also will give her expertise in identifying those patients, that most likely will not respond to physical therapy. The Physical Therapist will also present different techniques to preserve urinary continence after RRP, with rehabilitation exercises that acts on the entire circumferential rhabdosphincter musculature and the fascial tissues, and innervation of both the rhabdosphincter and the mucosal and smooth muscle.

Various surgical treatments have been introduced recently for the treatment of post-prostatectomy incontinence, such as, slings, ProACT, Bulking agent and artificial sphincter. The purpose of this workshop is to discuss in detail the evaluation and management of patients with urinary incontinence. Case discussions will give practical views of the problems.

The Physical Therapist will present different techniques to preserve urinary continence after RRP, with rehabilitation exercises that acts on the entire circumferential rhabdosphincter musculature and the fascial tissues, and innervation of both the rhabdosphincter and the mucosal and smooth muscle.

Beside the gold standard in the surgical management, the Artificial Urinary sphincter there are several other options for mild and moderate incontinence.

Male slings are supposed to reestablish the baseline continence provided by the smooth muscle system. It is the goal to support this function by a minimal increase of the urethral resistance. Adjustable male slings support the bulb urethra thereby also using the bulb venous tissue as a continence factor. The sling is placed under the bulb urethra and passed through the retropubic space up to the suprapubic region, where it is fixed. The theory behind the transobturator male sling is that by repositioning and anchoring of the proximal urethra the sphincteric function could be restored. The surgery includes mobilisation of the bulbous urethra and transection of the centrum tendineum. The bulb is fixed to the sling and the ends are guided through the obturator foramen in a typical outside-in fashion. The bulb is lifted up, however compression of the urethra should be avoided.

The Pro-Act involves two silicone balloons which are placed bilaterally above the pelvic floor using a perineal approach. Special instruments are used for placement, fluoroscopy or transrectal ultrasound is applied for exact positioning. Pro-Act can be considered an absolute minimally invasive procedure that has stood the test of time and will remain as a treatment option in the field of male incontinence.

In the last decade the artificial urinary sphincter has become definitive management for urinary incontinence in men, particularly after radical prostatectomy. In the majority of cases the rather high patient expectations can be realized. Placement of an artificial urinary sphincter via a scrotal approach is a natural extension of the penoscrotal technique for implantation of an inflatable penile prosthesis. The AMS 800 sphincter prosthesis is still mainstay of treatment for moderate to severe stress incontinence in men.

However, other hydraulic systems like the Zephyre, Flowsecure and Arroyo sphincters seem to offer similar qualities adding the possibility of postoperative adjustment. Differences of these systems will be discussed. Post-operative failure to achieve urinary continence can be secondary to local complications, device problems and/or limitations of the method. The long-term durability and functional outcome of these procedures remain unclear.
Established and new hydraulic systems, what they can and what they can not

For more than 30 years the AMS 800 has been the gold standard of hydraulic sphincters. In spite revision rates of 10-41% (depending on FU) and social continence rates of 79% most patients would have had their sphincter put in again 94,4%). Still certain points of improvement have been raised repeatedly.

A possibility to change the intra-device pressure postoperatively without changing the whole balloon in a second operation, a ready made implant to avoid connecting all components of the AMS 800 during the operation, a pump less challenging to use for patients with impaired dexterity, and the possibility of increasing the intra-device pressure during maneuvers with high intraabdominal pressure.

Three alternative commercially available hydraulic implants are on the market today and will be discussed addressing these points - the ZSI375 artificial urinary sphincter, the AROYO device and the FlowSecure sphincter.

ZSI 375 artificial urinary sphincter:
The ZSI 375 consists of a cuff and a pump, which covers both the function of a pressure regulating reservoir as well as the opening activation. The regulation unit involves two hydraulic compartments, one to fill the cuff and a second one regulating the pressure in the system. Implantation can be performed through a trans scrotal approach or via two incisions (perineal and inguinal).

Differences to AMS 800:
The ZSI 375 provides adjustability by percutaneous filling any time after implantation. It is a „one piece implant“, thereby facilitating implantation. Improvement concerning challenges for dexterity over the AMS 800 are minimal. A possibility of increasing the intra-device pressure during maneuvers with high intraabdominal pressure is not given.

Data:
Early results (15mts) of a single center study are showing social continence in 78% at 3 months and 73% at 6 months after device activation. In this series 12,5% of the implants had to be removed. In a second multicenter study social continence rates were significantly lower and 61% of the devices had to be removed. For that reason the system has undergone a two-step modification in the meantime.

The AROYO sphincter:
The AROYO sphincter consists of a cuff, a control unit as well as a pressure compensator positioned in the lower abdomen to be activated manually whenever higher pressures to the bladder may be expected (cough, exercise etc). Implantation is performed through a trans scrotal approach or perineal incision.

Differences to AMS 800:
The AROYO provides adjustability by percutaneous filling at the time of implantation using a pressure monitoring electronic device. Adjustment is also possible postoperatively. It is a „one piece implant“, thereby facilitating implantation. Manipulating the control unit ist described as not challenging for dexterity, however, the scrotal unit ist heavy and my be disturbing in the scrotum. The possibility of increasing the intra-device pressure during maneuvers with high intraabdominal pressure is definitely a interesting feature.
Little data are available at this time for the AROYO sphincter. The first presentation at the ICS meeting 2015 showed a series of 9 patients, one lost for FU for internal reason. Two devices had to be explanted (one erosion, one malfunction). Of 7 pts followed for one year 71% had more than 50% reduction in 24h pad weight.

The FlowSecure device consists of a cuff, a pump and an additional intraabdominal balloon for conditional occlusion. The pressure within the system can be adjusted any time after implantation. Implantation is performed through a perineal and inguinal incision.

Differences to AMS 800:
The FlowSecure device provides adjustability through the self sealing port in the pump, sudden pressure rises are covered by pressure transfer from the intraabdominal balloon to the cuff. This self acting system allows decreasing the resting pressure in the cuff to a minimum. The pump is similar to the AMS 800, however, softer and easier to use. The FlowSecure comes as a one piece implant.

The FlowSecure was described by Craggs et al. in 2006, in a study by Rodriguez et al 100 pts were implanted resulting in social continence for 89%. 28% had to be removed due to infection, pump perforation at adjustment or mechanical failure. The product has undergone several improvements since that time.

Concluding the new devices address certain points of possible improvement over the AMS 800, however, they have not stood the test of time yet.

Pathophysiology of Post Prostatectomy Urinary Incontinence (PPI)

PPI may result from bladder dysfunction, incompetence of the sphincter mechanism or both. More rarely it can be caused by an obstructive process leading to overflow incontinence.

Bladder disorders are frequent in patients before and after radical prostatectomy. Chronic obstructive processes from prostate or urethral obstruction are common in localized prostate cancer patients. The presence of chronic obstruction caused urethrovaseal anastomotic stenosis may lead to change in collagen and elastic fibers leading to decreased bladder compliance (Kim, J.C. et al, 2000). Many patients undergoing radical prostatectomy are located in older age groups, where it is common the presence of degenerative bladder changes leading to detrusor overactivity (Weiss, B. D., 1983; Kleinhans, B. et al, 1999). Additionally, elderly patients present a greater number of associated pathologies (co morbidity), including neurological diseases such as Parkinson’s, multiple sclerosis, stroke and diabetes, many of which may cause or aggravate urinary incontinence (Schuch, B., 2000).

The existence of vesicourethral sphincter dysfunction preoperative such as incontinence or severe bladder dysfunction, confer worse prognosis for maintaining urinary continence after performing radical prostatectomy. However, few patients presenting for surgery with such disorders. Thus, most cases of PPI arises from surgical sphincter injury as well as its innervation or
supporting structures. After removal of the prostate continence depends on the remaining external urinary sphincter. The degree of its injury will determine the severity of incontinence. This can be reversible over time. In a small number of patients, bladder dysfunction resulting from surgical injury can cause IUPPR or aggravate incontinence resulting from sphincter injury.

Several studies have looked through pre and postoperative urodynamic studies trying to predict urinary incontinence. Several changes were observed in the sphincter mechanism due to surgery, such as: a reduction of the functional sphincter length (Rudy, DC et al, 1984; Coakley et al, 2002; Philippe Paparel et al, 2009; Antonio Tienza et al, 2015), decrease in urethral closure pressure (Kleinhans, B. et al, 1999a) or both (Presti, JC Jr. et al, 1990). Less frequently, changes were described in bladder compliance as well as the emergence of detrusor overactivity (Tomschi, W. et al, 1998). More rarely, obstructive processes, usually located in urethrovesical anastomosis may lead to urinary retention and paradoxical incontinence (Desautel, MG et al, 1997) or lead to the emergence of secondary detrusor overactivity (Chao, R. Mayo and, ME, 1995). The coexistence of stenosis of the urethrovesical anastomosis and urinary incontinence by sphincter injury is a relatively common condition and with implications for assessment and treatment of patients.

Although several studies have shown a high incidence of bladder dysfunction in patients undergoing radical prostatectomy, most of them are not accompanied by significant symptoms. Recent studies have shown that the sphincter deficiency is the determining factor of the IUPPR onset in most patients (Gudziak, MR et al, 1996b; Desautel, MG et al, 1997; Ficazzola, MA and Nitti,).

Risk factors for the emergence of IUPPR
Preoperative: several authors attempted to identify risk factors for the development of IUPPR. Among the factors determined preoperatively, the presence of severe voiding dysfunction and most advanced stage of the disease lead to a higher incidence of urinary incontinence (Van Kampen, M. et al, 1998; Bono, A. A. et al, 2001). Similarly, older patients have higher incidence of atrophy of the external sphincter (Burnett, AL and Mostwin, JL 1998) and neural degeneration with commitment of its innervation (Narayan, P. et al, 1995), which provides greater IUPPR incidence (Zincke, H. et al, 1994; Catalona, WJ et al, 1999b; Stanford JL et al, 2000).

Intraoperative: nerve preservation, the surgeon’s experience and the number of radical prostatectomies of the institution appear to favorably influence the rates of urinary continence (Walsh, P.C., 1998a). Technical details of the surgery and the recognition of conformation and careful dissection of the prostatic apex (Myers, R. P., 1991b) leading to a preservation greater extension of the external sphincter, resulting in improved rates of continence (Walsh, P.C., 1998b). The joint ligature of puboprostatic ligament with dorsal vein complex results in better early continence rates. However, after one year, continence rates are similar to those obtained with the previous section thereof (Begg, C. B. et al, 2002; Jarow, J.P. 2000). The retropubic or the perineal access roads have long term urinary continence rates quite similar (Gray, M. et al, 1999; Ruiz-Deya, G. et al, 2001). Studies analyzing large series of radical prostatectomies using laparoscopic show similar continence rates to those observed with open access roads (Olsson, L. E. et al, 2001).

Predictors: Recent studies using magnetic resonance imaging (MRI) as urinary incontinence predictor after laparoscopic prostatectomy retroperitoneal surgical showed lower rates of UI when it was possible to leave a larger membranous urethra (Coakley et al, 2002; Philippe Paparel et al, 2009; Antonio Tienza et al, 2015). Other authors concluded that the volume of the prostate would be a predictor of recovery UI, and a volume above 50 cc would be associated with lower recovery rates of continence one year after surgery as a result of changes that a prostate above that volume would promote the bladder (Abrams P., et al, 2002; Kupelian V., et al, 2006; Br Konety, et al., 2007, Tienza Antonio et al, 2015). Tienza et al, 2015 using MRI in the preoperative evaluation of pelvic anatomy also found that the wall thickness of the urethra and the length of the membranous urethra and the thickness of internal obturator muscle would impact on the control of continence. Tienza et al concluded in their study that MRI may be useful as a predictor of UI alone or with other diagnostic tools.

Some authors have studied the possibility of identifying, through urodynamic preoperative evaluation, patients at higher risk for developing IUPPR. Although identified bladder changes as detrusor instability in a number of patients and several changes of urodynamic parameters from surgery, was not possible to establish predictors insurance IUPPR (Golomb, J. et al, 1999; Kleinhans, B. et al, 1999).

References:


Wilhelm A. Hübner

Affiliations to disclose:

† Astellas speaker
† Promedon speaker
† AMS speaker

Funding for speaker to attend:

☐ Self-funded
☒ Institution (non-industry) funded
☒ Sponsored by: Promedon

Incidence of PPI: 3–63% (7)

First line treatment:
PFT as routine care or treatment for persisting PPI

Placebo – controlled randomized studies:
Van Kampen et al. Lancet 355, 98 – 102, (2000): 88% vs 56% full continence at 3 mts pRPE


Earlier recovery, 3-8% with persisting PPI will receive surgical intervention

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of Sling</th>
<th>Success Rates</th>
<th>Follow-up</th>
</tr>
</thead>
</table>
| 1970 | Scott sphincter AMS 721, Kaufman – Prosthesis I-III | 72% (0 pads: 42%) | 4 yrs. followup
| 1982 | AMS 800 | 43% (0 pads: 14%) |
| 1982-2000 | AMS 800, Bulking agents | | |
| 2002 | InVance (BAMS), Schaeffer sling | | |

1970 Scott sphincter AMS 721, Kaufman – Prosthesis I-III
1982 AMS 800
1982–2000 AMS 800, Bulking agents
2002 InVance (BAMS), Schaeffer sling

Retightening procedures: 22%

Castle et. al. J. Urol. 2005
(Mayo Clinic)

Bone anchored male slings, n=38

Success rate after 6-18 mts: 67% > 39%
Success rate after 6-18 mts: 47% > 15%
Success rate after XRT: 12.5% success

Relevant factors: incontinence grade, XRT

Table 4: Results of Quality of life questionnaire (I-QoL):

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Baseline</th>
<th>3 months</th>
<th>6 months</th>
<th>12 months</th>
<th>24 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>117</td>
<td>117</td>
<td>117</td>
<td>117</td>
<td>117</td>
</tr>
<tr>
<td>Mean</td>
<td>36.7</td>
<td>60.3</td>
<td>64.9</td>
<td>64.9</td>
<td>66.3</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>22.6</td>
<td>23.2</td>
<td>23.9</td>
<td>25.9</td>
<td>27.3</td>
</tr>
<tr>
<td>p-value</td>
<td>-</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Limits:
Urethral changes/scars
RTX = contraindication

Oppikofer WA, Schlap OM.

1970 Scott sphincter AMS 721, Kaufman – Prosthesis I-III
1982 AMS 800
1982 – 2000 AMS 800, Bulking agents
2002 InVance (BAMS), Schaeffer sling
2002 CE – mark ProAct (1st adj. System)

OP Methods developed 2002 - 2016

Zephyr
Argus
Phorbas
Flowsecure
InVance

Remeex
Pro Act
Atoms
I Stop

Adjustability, a key factor?

Future Aspects next generation. flowsecure

ZSI 375

Aroyo
Postprostatectomy Incontinence
latest considerations and current approach

W. Hübner

Disclosures Wilhelm A. Hübner

Speaker for:
Promedon
AMS
Astellas

Shares:
Uromedica

Wilhelm A. Hübner, MD
1974 – 1986 Med studies & Res. in Vienna
Wilhelm A. Hübner, MD

1974 – 1986 Med studies & Res. in Vienna
1992-1997 attd. Phys. /Vice Chair Lainz Hospital Vienna (Prof. Pflüger)
1998 Chairman Korneuburg Hospital

1999 first Pro Act Operation worldwide
Since 2001 focus on male incontinence, ProAct, Remeex, AMS 800, Flowsecure, InVance, Atoms, ARGUS and others
ca 100 cases/year

Functional differentiation of sphincteric components

Stress continence -> striated muscle sphincter (N. Pudendus)

Baseline continence -> smooth muscle sphincter (Pl. Hypogastricus)

Tanagho, Trigo-Rocha, Hübner et al
UCSF 1991

Wilhelm A. Hübner, MD

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1999 first Pro Act Operation worldwide
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ca 100 cases/year
Pathophysiology of Male Incontinence

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Coordinator of Continence Center – Hospital Sírio Libanés
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Prostate Cancer

USA: The chance of a newborn to develop prostate cancer (PC) varies from 9% to 16.5%. In patients with diagnose the chance to die from this disease is about 3%.

The USA National Cancer Institute estimated 241,740 new cases and 28,170 deaths due to prostate cancer in 2012.


In Brazil, according to National Cancer Institute (INCA), PC is the most common male cancer. According to INCA there were 60,180 new cases in 2012. They estimates 62.54 cases/ 100,000 habitants.


PC and age

The Sting 1973

PC and age

The Sting 1973

PC and age

The Sting 1973

Radical Prostatectomy

Almost 100 years since the first cases
Initially accompanied by unacceptable morbidity
Better anatomic studies led to improvements in surgical technique reducing morbidity dramatically

Modern Radical Prostatectomy

Walsh, P., 1979 – 843 citações
Walsh, P., 1981 – 541 citações
Brody Institute – Johns Hopkins

Anatomic and neurological modifications after radical prostatectomy

- Lost of continuity of vesicourethral muscle
- Changes in bladder neck
- Rupture of fascias and ligaments
- Lesion of bladder basis and membranous urethral innervations
- Changes in blood supply
- Reduction of the functional length of membranous urethra
- Traumatic fibrosis

Radical Prostatectomy Urinary Incontinence (PRPUI): Urodynamics

Preoperative urodynamics vs continence

Urodynamics in 66 pts before and after radical prostatectomy

- No correlation between preoperative urodynamic evaluation and incontinence (1/44 pts!!)

Preoperative parameters vs continence

DO PELVIC FLOOR MUSCLES STRENGTH AND URODYNAMIC PARAMETERS PREDICT EARLY INCONTINENCE OUTCOMES AFTER RADICAL RETROPUBIC PROSTATECTOMY?

Older patient and pelvic floor muscles weakness were associated with UI 1 month after radical prostatectomy. There were no correlation between Urodynamic parameters and UI one month after surgery.

Radical Prostatectomy Urinary Incontinence (PRPUI): causes

- Detrusor HD
- Obstruction/hypocontractility
- Sphincter
Sphincter mechanism

- Mucosal seal
- Fibroelastic tissue
- Smooth muscle
- Striated muscle
- Pelvic muscle

SUPORT
- Pubo-prostatic ligaments
- Elevator anus fascia
- Perineal tendineum center

Blood supply

Innervation

RP: Improvements in surgical technique

Neurovascular bundles preservation

Apex dissection

Rabdosphincter preservation
  
  Steiner, Morton e Walsh, J Urol, 1991

Patients with neurovascular bundle preservation have better continence results
  
  O’Donnell e Finan, J Urol, 1989
  
  Steiner et al, J Urol, 1991

Preservation of NVB or less traumatic technique?
### Urethral length and continence

<table>
<thead>
<tr>
<th></th>
<th>Pre-op</th>
<th>Pos-op (2 meses)</th>
<th>Pos-op (6 meses)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethral functional length</td>
<td>61 mm</td>
<td>25.9 mm</td>
<td>29.5 mm (21.4)</td>
</tr>
<tr>
<td>Maximum urethral pressure</td>
<td>89.6 cmH₂O</td>
<td>65.2 cmH₂O</td>
<td>78 cmH₂O (54.6)</td>
</tr>
<tr>
<td>Bladder capacity</td>
<td>396 ml</td>
<td>332 ml</td>
<td>258 ml (239)</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>17%</td>
<td>41%</td>
<td>44% (55)</td>
</tr>
</tbody>
</table>

Hammerer P e Huland H, J Urol, 1997

### Time to recover continence after RRP

![Graph showing time to recover continence after RRP](image)

Walsh PC, J Urol, 2000

### Temporal evolution of PRPUl

- Neurologic reflex adaptation
- Neuronal regeneration
- Sphincter adaptation
- Bladder adaptation

### Regeneration of urethral aference

![Graph showing regeneration of urethral aference](image)

O'Donnell et al, Urology, 1990
Caine e Edwards, Br J Urol, 1958

### Urethral seal

Sphincter is 1 cm below anastomosis but there is no contrastation in proximal segment => urethral coaptation

O'Donnell et al, Urology, 1990
Caine e Edwards, Br J Urol, 1958
Reduction in urethral compliance after prostatectomy

83 pts with PRPUI (sphincter: 88%)
- Free Q max and Qmax with 7 Fr catheter
- Reduced urethral compliance:
  - Reduction in Q max > 10 ml/sec
    - Groutz, Blaivas, Chaikin et al, J Urol, 2000

Reduction in urethral compliance

Surgical trauma/schemia

Urethral fibrosis

Reduced urethral coaptation

Incontinence

Reduction in urethral compliance

In a normal urethra a 7 Fr catheter does not affect Qmax

- Reynard et al, J Urol, 1996

Q max reduction by catheter
- Obstruction
- Sphincter not relaxing

Obstruction by the 7Fr catheter

Reduced urethral compliance

Stenosis/fibrosis

Reduction in urethral compliance

Urethral fibrosis

Chao e Mayo, 1995 26%
Desautel et al, 1997 67%
Ficcazola e Nitti, 1998 27%
Groutz et al, 2000 30%*
Postprostatectomy incontinence: Conclusions

- Sphincter deficiency is the main cause
- Sphincter muscle preservation as well as preservation of its irrigation, inervation and support minimizes the problem
- Detrusor dysfunction and obstruction may contribute for incontinence in some cases
Physical Therapy in Male Incontinence - approaches and limitations

ICS 2016 Tokyo
46th Annual Meeting
By: Heather L. Moky Cordova PT, DPT
University of Illinois Hospital

Pelvic Floor Physical Therapist

Common Treatment approaches for Incontinence

Pelvic floor muscle training with functional integration
Posture, Body mechanics and lifting
Lifestyle modifications
Core Stabilization
Electrical stimulation
Many Other techniques

What if physical therapy is not working?

You have to figure out the Why?
Compliance Issue?
Not interested?
Not understanding?
Is there a motor learning problem?

Case 1 - Richard

64 year old male - Works as a janitor – lifting 10 to 20 lbs.
SX: Prostatectomy April 7, 2016
Evaled on June 16, 2016
Reports being able to achieve an erection 100% of the time
Withholds water to decrease urinary leakage - uses about 6 pads a day soaked
Strength 4-5
Very motivated.
Attended 4 physical therapy TX session at 1 time a week with little to no change
Compliant – almost over complaint
Case 1 – Richard

Re-evalued on 7/22

6 shields a day
Still withholding water

Objective Findings
Hamstrings: R 48 degrees  L 46 degrees
Pelvic floor Strength: 3-5
Bearing down, Holding breath
DRA: 2 fingers above umbilicus
Can't isolate or activate his Transverse Abdominal

Discussion
Tell me what you are doing at home
Show me what you are doing at home
(Everything – really have them show you)
Are they holding their breath?
Look for Compensations

Case 1 - Richard

Pt reported little to no benefit after 4 weekly visits

We should be asking ourselves why?

After reassessing - What are the underlying problems?
• Improper pelvic floor contraction
  • Instead of a lift and compress it was a lift and push
  • Push ultimately bearing down
• Subconsciously holding breath
• Valsalva with lifting techniques
• Lack of integrating the abdominals
• Overall muscle fatigue

Treatment:
Diaphragmatic Breathing
Avoiding Bracing and Valsalva – changing that pattern
Pelvic floor muscle isolation
  • with constant verbal cues to breath
  • different position
  • 25 % effort
Simulate work and retraining of breathing to avoid Valsalva
Abdominal Activation and isolation
Hamstring stretching

Case 1 - Richard

5 weeks later- pt. reports being 65 to 70 % improved

6 pads a day to
  2 pads a day when not working
  3-4 a day when working

Less leakage on the pad
Drinking fluid normally

Pelvic floor muscle training

• Able to contract?
• Breathing - are they holding their breath?
• Effort?
  • Use 50 % effort
  • Use 25 % effort
• Hypertonic muscles or hypotonic muscles
• Posture
• Co-activation of other muscles and muscle compensations

• Able to relax?
• Bearing down to compensate?
• Quality of contraction
  • Strength and Endurance
  • Timing of contraction

• Effort?
  • Use 50 % effort
  • Use 25 % effort
• Hypertonic muscles or hypotonic muscles
• Posture
• Co-activation of other muscles and muscle compensations
Effects of Prostatectomy

Physical
- Surgical Approach
- Removal of prostate
- Loss of smooth muscle - loss of tonic support for continence
- Potential Damage striated urethral sphincter
- Possible loss of the sphincter muscle
- Damage or irritation to nerve supply

Mental and Emotional
- Other referrals
- Support Group
- Emotional
  - I had cancer
  - Loss of manhood

Different Cues for activating pelvic floor

- Tighten the around the anus – commonly used in research - not effective
- **Use different cues** - Stafford et al., 2016
  - Try to pretend to stop the flow of urine
  - Try to prevent from passing gas
  - Pretend you are a turtle, and pull your head into the shell
  - Shorten the penis
  - Others

Different muscle activation patterns

Stafford et al, 2013 found
2 different dominant muscle activation patterns found in men with pelvic floor muscle activation
- Striated urethral sphincter dominant - compresses
- Puborectalis dominant – pull up towards the pubic bone

Develop different strategies

- Striated Urethral sphincter patterns responded best to the cue “shorten the penis” (Stafford et al., 2015)
- Give patients different cues?
- Palpate and feel which cue gets more muscle recruitment.
  - What do you feel?
  - What does the patient feel?

Questions to ask ourselves

- Are the correct muscle being activated?
- How do we know?
- Is the pt. overcompensating?
- When you are told to do something as hard as you can what happens to your breathing pattern?
  - People tend to hold their breath. Wrong approach.

Muscle assessment

- Palpation
- Surface/ anal EMG
- Ultrasound imaging
- Biofeedback
Real Time Ultrasound

- RTUS is a non-invasive option that is valid and reliable to assess the pelvic floor muscle function

- Sherburn et al, 2005

Real time Ultra Sound- RTUS

Novel Insight into the Dynamics of Male Pelvic Floor Contractions Through Transperineal Ultrasound Imaging

- Stafford et al, 2012

Should we train other muscle besides the pelvic floor muscles?

There are over 45 different muscles that attached in and around the pelvis.

Muscle stability

Pelvic floor muscles work in conjunction with the diaphragm. Transverse abdominal muscle works in conjunction with multifidus muscles of the spine (Sapsford et al., 2001)

Diaphragm (roof) and the Pelvic floor muscles (foundation) work together

PFM will get co-contractions with Tra and Multifidus

What if its not working?

Patience and realistic expectations

Importance of compliance

PFM contraction: Biofeedback or Estim

Use different cues

Work with different muscles to assist.

More Involved- Other PT techniques or incontinence tools

Talk with Md or send pt. back to MD

Take Home Messages

1. With incontinence, there are many valid treatment options, but pelvic floor muscle training is recommended as a first line treatment, but make sure the pt. is doing it correctly.

2. You need to Individualize a program for your patient and use different cues to get better pelvic floor muscle activation.

3. We say to treat the whole person, but treat their whole body not just the pelvic floor.

4. Resolution of muscle dysfunction is essential to improving quality of life in men with incontinence.
Slings and Balloons for Male Stress Urinary Incontinence

ERVIN KOCJANCIC
Director of Pelvic Health and Reconstructive Urology
University of Illinois at Chicago

POST PROSTATECTOMY STRESS URINARY INCONTINENCE (SUI)

The current EAU guidelines define post prostatectomy continence as the use of 0 or 1 pad ("safety pad") per day

EPIDEMIOLOGY

- 90,000 RP performed in US annually
- 4%-31% SUI for laparoscopic radical prostatectomy robotic assisted
- 7%-40% SUI for open radical prostatectomy
- 5%-34% SUI for laparoscopic radical prostatectomy

Historical Perspective

- 1927 Player & Callander - gracilis muscle flap
- 1947 Cooney & Horton - abd-perineal fascial strip
- 1972 Kaufman JJ - penile crura
- 1973 Kaufman JJ - silicone gel prosthesis
- 1974 Servadio C - fascial sling
- 1976 Pettersson & Bratt - fascial sling
- 1979 Kaufman & Raz - silicone gel prosthesis
- 1995 Janknegt et al - gracilis urethromyoplasty
- 1998 Schaeffer et al - Gore-Tex bulbar sling

Classification

- Non-Adjustable
  - Bulbo urethral slings
  - BAMS (Invance®)
  - Trans obturator slings (Advance®)
  - Quadratic sling (Virtue®)
- Adjustable
  - MR Remeex®
  - Argus®
  - Atoms®

male slings:

permanently increase the urethral resistance
use bulbar venous tissue

W. Hübner, Korneuburg
1. Bulbo-Urethral Sling

Technique:
- Perineal incision
- 3 tetrafluoroethylene bolsters placed under bulbar urethra
- Stamey needle is used to transfer sutures
- Suture ends are tied over rectus fascia
- Intra-op resting urethral pressure & ALPP measured for sling tension

Results:
- Total # patients: 71
- Mean follow up: 48 m
- 0 pads: 36%
- ≤ 2 pads: 68%
- Patient satisfaction: 69%


2. Bone Anchored Male Sling (BAMS)
Bone Anchored Male Sling (Invance®)

Shaft and Shaft Sleeve Cover
- 8cm metal shaft
- Plastic sleeve cover
  - Prevents tissue or anything else from getting wrapped up or around the shaft

Bone Anchored Male Sling

Bone Screws
- 5mm titanium bone screw with pre-attached #1 Prolene suture
- Self-tapping design allows for faster bite, quicker insertion and firmer fixation into the bone without chipping

Insertion of Bone Screws

Sling Material

- Allograft Demis
- Silicone Mesh
- Allograft Fascia
- SIS
- Composite

2. Bone Anchored Male Sling (BAMS)

10 studies between 2005 and 2011, at least 30 pts, minimum mean follow up of 12 months

- Success rate 13%-66%
- Improved 8%-39%

2. Bone Anchored Male Sling (BAMS)

- Erosion rate 0%-2%
- Urinary retention 0%
- Malfunction/displacement 0%-10%
- Pain 0%-10%
- Infection 0%-15%
- De novo detrusor overactivity 1%-14%
2. Bone Anchored Male Sling (BAMS)

- Bothersome scrotal pain or numbness affects 16%-72% of patients postoperative, but disappear in nearly all patients by 3 months
- 76% of men with postoperative mesh infections required surgical explantation of sling
- Bone screw dislodgment can happen as a late complication that cause recurrent incontinence and require a second operation

InVance® device has now been removed from the market in some countries due to the morbidity related to bone screws (infections, pubic bone osteitis, perineal pain, lack of efficacy)

Trans obturator slings

Trans-Obturator Sling (Advance®)

- Polypropylene mesh tape is placed sub-urethrally
- Tape is placed by passing helical needles through obturator foramen
- Tape is then pulled to reposition and relocate urethra

3. Trans obturator slings

5 studies between 2010 and 2012, at least 30 pts, minimum mean follow up of 12 months

- Success rate 9%-73%
- Improved 16%-45%

- Erosion rate 0%
- Urinary retention 0%-15.1%
- Malfunction/displacement 0%-0,8%
- Pain 0%-17%
- Infection 0%-2,7%
3. Trans obturator slings

- Permanent retention is rare, the need for catheterization can persist for up to 12 weeks, with rare instances of retention lasting longer than 3 months.
- Less commonly experienced is wound infection, with only rare sling infection or erosion requiring explantation.

Quadratic (4-Point) Sling (Virtue®)

- 12 months objective success rate 41.9%
- 12 months cure rate 15%

NB. Authors considered as objective success rate >50% improvement in pad weight, and as cure rate a pad weight <1.3 g.

Complications:
- 12.2% short term paresthesias
- 14.3% temporary perineal pain
- 1 case of scrotal hematoma
- 1 case of UTI
- No sling infection or erosion reported after 12 months
- No changes in mean PVR
Adjustable slings: MR Reemex®

24-48h after the intervention the system is adjusted to give the exact urethral support level needed.
If at any moment, during patient's lifetime, he is incontinent again, surgeon can adjust the sling urethral support easily. This re-adjustment can be performed whenever needed, every time it is necessary.

Dynamic pressure transmission system
When coughing, the patient advances the rectus muscle, advancing the vartensor, and increasing the sling urethral support while it's needed.

Table 1. Patient demographic with success and failure

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Success (n= 20)</th>
<th>Failure (n= 23)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (yrs) (IQ)</td>
<td>70.5 (58.77)</td>
<td>73 (66.77)</td>
<td>.75</td>
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<tr>
<td>Median BMI (IQ)</td>
<td>20 (28.32)</td>
<td>28 (27.52)</td>
<td>.56</td>
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<tr>
<td>Preoperative obstruction (%)</td>
<td>0</td>
<td>39</td>
<td>.02</td>
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<tr>
<td>Diabetes (%)</td>
<td>70</td>
<td>60</td>
<td>.25</td>
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<tr>
<td>Hypertension (%)</td>
<td>70</td>
<td>62</td>
<td>.25</td>
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<tr>
<td>Cardiac disease (%)</td>
<td>10</td>
<td>29</td>
<td>.11</td>
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</table>

CONCLUSION
This study demonstrated a significant procedure failure and complication rate with the VQ sling. As a result, we do not recommend the use of the VQ sling and have abandoned all further implantation of the device.
CONCLUSION

At the midterm follow-up, the MRS using the REMEX system was effective in treating FPI, with a success rate of 72% and an acceptably low complication rate. Success rates were similar between the 2 uncontrolled centers included in this study. The MRS could be an attractive surgical option for treating radiation-naive patients with a mild degree of FPI.

Adjustable slings: Argus®

- The Argus Adjustable Male Sling system is specially designed for the retropubic approach and is indicated for treating moderate to severe SUI cases. Five years of experience backs up the standardized, reproducible Argus retropubic technique.

- The Argus T Adjustable Male Sling system is specifically designed for the transobturator approach. It is indicated for patients with mild to moderate SUI. It involves a less invasive surgical technique, minimizing the risk of bladder perforation.

Adjustable slings: Argus®

- Cure rate 66%-79.2%
- Improved 12.8%
- Erosion rate 12.7%
- Urinary retention 8.5%-38.6%
- Malfunction/displacement 0%
- Infection 4%-6.4%

Adjustable slings: Atoms®

- Long-term, adjustable implant
- Hydraulic system with no mechanical parts
- Anatomical 4-point fixation
- Scrotal Port
Adjustable slings: Atoms®

Original article

Adjustable transobturateur male system – ATOMS – for the treatment of post-prostatectomy urinary incontinence: The surgical technique

WILHELM BAUER, CLEMENS BROISSNER
Krankenhaus Großherzogin Elisabeth, Department of Urology, Vienna, Austria

Adjustable slings: Atoms®

• Series of 120 patients
• Non intraoperative and perioperative complications reported
• Temporary perineal/scrotal dysesthesia or pain in 62% of patients (controlled with non-opiate painkiller)
• 4 port infection

Authors suggest to avoid infection:

change of the port only, or to a complete explantation (port and silicone components). Successful implantation of the ATOMS system in all patients followed after a healing phase of three months. Having observed no further infections since, we can draw the following considerations: i) the implant should not be removed from the packaging until we have finished preparing the site, ii) the surgical implantation should be completed before we move to the port area, iii) the port should be positioned subcutaneously as deep as possible, and iv) the port should not end up being directly under the skin incision (the edge of the port should be at least 1 cm away from the skin incision). On average, our patients are discharged on the third post-operative day (range 2–7), which is standard practice in the Austrian healthcare system. An earlier discharge is certainly possible from a medical point of view, however is not advisable before removal of the permanent catheter.

Conclusion

• The complications of newer male slings are uncommon.
• The bulbourethral sling had the highest incidence of complications
• Perineal pain is the most frequent complications with all types of male sling

Guidelines on Urinary Incontinence

Evidence summary LE
There is limited short-term evidence that fixed male slings cure or improve post-prostatectomy incontinence in patients with mild-to-moderate incontinence. 3
Men with severe incontinence, previous radiotherapy or urethral stricture surgery may have less benefit from fixed male slings. 3
There is no evidence that one type of male sling is better than another. 3

ProACT™
Overview of All Published ProACT™ Series

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<th>Author</th>
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</tbody>
</table>

Conclusions

Are male slings for post-prostatectomy incontinence a valid option?

Male slings are a valid option for treating male stress incontinence, and do offer several advantages over the artificial urinary sphincter. However, long-term data and multicenter series are needed in order to compare directly with the artificial urinary sphincter.

Wilhelm A. Hübner

Affiliations to disclose:

Astellas speaker
Promedon speaker
AMS speaker

Funding for speaker to attend:

- Self-funded
- Institution (non-industry) funded
- Sponsored by: Promedon

Established and new hydraulic systems, what they can and what they can not

W. Huebner

AMS 800 results, Qs and As
Zephyr
Flowsecure
Aroyo

Artificial hydraulic sphincter

First described 1974

Current version: AMS 800 since 1982

Worldwide <100,000 implantations

Open – close mechanism!
AMS 800 - options for implantation

Classical two incisions/scrotal approach

Henry GD et al, multicenter study n=158
Higher dry rates (44 vs 27%)
Less sec. tandems (5 vs 11%)
Outcome favours classic (no prosp. rd. trials)

AMS 800 - options for implantation

Classical two incisions/scrotal approach

Kretschmer et al. (European DOMINIO study) n=467
Higher early explantation rate with scrotal approach
(19.2 vs 8.6%)
Complication rate favours classic (no prosp. rd. trials)

AMS 800 - options for implantation

More vulnerable (distal) part of the urethra

(Henry et al: smaller cuffs in the transc. cohort)

**Recommendation for transcorporal approach cannot be given**

Inadequate angles of tubes => erosion/device dislocation
(Kretschmer et al: erosion, dislocation)

AMS 800 - options for implantation

Single cuff / tandem cuff

Theoretic advantages: increasing urethral resistance with equal pressure => higher LPP

Initially => favourable results (1993-1996)


AMS 800 - options for implantation

AMS 800 - options for implantation

Single cuff / tandem cuff

Higher complication rates with tandem cuffs

**Tandem cuff only recommended for Trouble shooting (failed single cuff, subcuff – atrophy)**

Van der Aa et al., Eur Urol 2013; O’ Conner et al. Urology. 2008
Kretschmer A et al., . Results from a Large Middle European Multi-Institutional Case Series, Urol Int. 2016 Jun 17.

AMS 800 - options for implantation

Transcorporal cuff placement – concerns/facts

Bleeding => insignificant
ED => majority maintains!* Special appearance at X-Ray (compr. at 12h position)

AMS 800 - options for implantation

Transcorporal cuff placement - indications

for re-do
when distal placement needed
difficult preparation of urethra
additional bulk with small urethras

Artificial Urinary Sphincter

Perineal and scrotal approach

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Results (n=1082)</th>
<th>No. of included participants (n=1082)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>43 (31-74%)</td>
<td>562 (10)</td>
</tr>
<tr>
<td>Mechanical failure</td>
<td>62 (20-158%)</td>
<td>562 (10)</td>
</tr>
<tr>
<td>Urethral anatomy</td>
<td>72 (0-256)</td>
<td>450 (8)</td>
</tr>
<tr>
<td>Recommission (for any reason)</td>
<td>100 (0-480)</td>
<td>549 (10)</td>
</tr>
<tr>
<td>No. of patients voiding 1/2 pad/24 h</td>
<td>200 (10-200)</td>
<td>242 (7)</td>
</tr>
<tr>
<td>No. of patients completely dry 1 pad/24 h</td>
<td>453 (43-857)</td>
<td>336 (7)</td>
</tr>
</tbody>
</table>

- High revision rates (20-30%)
- Satisfaction rate correlates with continence, not dependent of revision rate!

PD49-02 LONG-TERM OUTCOMES FOLLOWING ARTIFICIAL URINARY SPHINCTER PLACEMENT: AN ANALYSIS OF 1082 CASES AT MAYO CLINIC (n=1082)
Brian Lindsey, Marcelino Rivera, Matthew Ziegelmann, Daniel Elliott
Secondary surgery-free survival: 90% at 1 year, 74% at 5 years, 57% at 10 years, and 41% at 15 years.

S.K., 12.05.1947
X/2006rad Cystoprostatektomy, (PT4, GS9, R+)
ileum Neobladder => PSA = 0,3ng
=> rez. Anastomotic stricture

III/2009 Memotherm Stent + AMS 800
voiding volume 700ml, RU = 0, nycturia: 0

M.R., st p RPPE and EBRT, AMS 800 for severe incontinence
Continues leaking only at stress due to rigid urethra

W.Hübner, Korneuburg
Telephone-delivered quality of life after 365 male stress urinary incontinence operations.
AMS 800: 92% recommendation
Limitations: dexterity, mental status
**ARTIFICIAL URINARY SPHINCTER**

For male severe incontinence

**ZSI 375**

**FUNCTIONING OF THE ZSI 375**

The ZSI 375 is filled with normal saline solution. There are two compartments separated by the piston (3).

The two circuits are separated by a piston (3).

The piston can move up and down in the tank.

The saline solution of the hydraulic circuit is never in contact with the saline solution of the compensation pouch.

**FILLING OF THE COMPENSATION POUCH**

Inject 4.5 ml of saline solution

**RESULTS**


n=36 patients

FU: 15.4 (6-28) months

Social continence at 6 mts: 73%

Removal in 4/36 patients (12.5%)

Infection 3x, erosion 1x

Zephyre

Aroyo

Magnetic and electronic sphincters
RESULTS

Changes have been made, now prefilled implant, new data needed

Differences to AMS 800:
- adjustability any time after implantation
- „one piece implant”
- Improvement concerning dexterity?

Flowsecure

Knight SL, Susser J, Greenwell T, Mundy AR, Craggs MD
2006
- first adjustable AUS

Continence of patients with AUS depends on two factors:
1) the pressure exerted by the cuff on bulbar urethra, and 2) preservation of blood flux to the urethral mucosa and submucosa. For a given range of pressures in the cuff, the most important factor is urethral blood flux. Patients with a good flux will remain continent, while patients in whom ischemia prevents the sealing effect of the mucosa and submucosa will develop incontinence.
RESULTS

n=100 patients    FU: 15.4 (6-28) months

Social continence :  89%
Removal in 28/100 patients (28%)
   pump problems (accidental penetration, malfunction)

Similar to AMS 800
Long evolution period

Differences to AMS 800:
Self acting smart pressure adjustment
adjustability any time after implantation
„one piece implant“
Improvement concerning dexterity
AROYO TM


RESULTS


n=9 patients FU: 12 months

7/9 pts: “more than 50% reduction in pad weight
2/9 pts removal (erosion, malfunction)

Interesting concept „young” product, results not yet conclusive wait for final Releif II results

n=48 patients

Differences to AMS 800:
Open/close control unit in the scrotum adjustability „one piece implant” Pressure compensator for manual activation

Future Aspects
Future Aspects

ZSI 375 new generation. flowsecure

new devices adress certain points of possible improvement over the AMS 800, however, they have not stood the test of time yet.

Aroyo
Case Presentations

Case presentation
- 64 y.o. 2 m. post ERPE, pT2b, N0,R-
- Post op PSA 0.01 ng/ml
- 24h Pad test = 150 g
- Pad count 3
- Evaluation?

Case presentation
- 64 y.o. 2 m. post ERPE, pT2b, N0,R-
- Post op PSA 0.01 ng/ml
- 24h Pad test = 150 g
- Pad count 3
- Evaluation?
- Pad count had been 4-5 initially

Case presentation
- 64 y.o. 2 m. post ERPE, pT2b, N0,R-
- Post op PSA 0.01 ng/ml
- 24h Pad test = 150 g
- Pad count 3
- Evaluation?
- 1st option? => physical therapy
Case presentation

- 66 y.o. 3a. after RRPE, pT3a, N0,R-,
- used 2 pads/day
- underwent EBRT, now 3-4 pads per day
- Evaluation?

Options?
PFT? ProAct?
Fixed sling?
Adjustable sling?
AUS?

case

IV/2005 63 a WM, Dg PC, PSA: 12,4 ng/ml

RPE aborted for N+ LHRH Therapy

IX/2005 „IC“, conservative Th., Botox, total incontinence,
The patient was told that there are no other options for him!
presents with SP tube, still pain and incontinence => pre suicidal
case
IV/2005 63 a WM, Dg PC, PSA: 12,4 ng/ml
RPE aborted for N+ ➔ LHRH Therapy
IX/2005 „IC‟, conservative Th., Botox, total incontinence,
The patient was told that there are no other options for him!
presents with SP tube, still pain and incontinence ➔ pre suicidal!
X/2006 rad. Cystoprostatectomy, Histology: PT4, GS9, R+
ileal neobladder

Cystoscopy

case
IV/2005 63 a WM, Dg PC, PSA: 12,4 ng/ml
RPE aborted for N+ ➔ LHRH Therapy
IX/2005 „IC‟, conservative Th., Botox, total incontinence,
The patient was told that there are no other options for him!
presents with SP tube, still pain and incontinence ➔ pre suicidal!
X/2006 rad. Cystoprostatectomy, Histology: PT4, GS9, R+
ileal neobladder ➔ rec. anastomotic stricture!

case
X/2006 rad. Cystoprostatectomy, Histology: PT4, GS9, R+
ileal neobladder, rec. anastomotic stricture, wet intervals!
Deobstruction

Memotherm Stent
Deobstruction

Continence surgery
Adi. Sling?
Retrouthv. Sling?
Pro Act?
AUS?

Memotherm Stent + AUS 800
Capacity 700ml, nykt. 0, no RU
VIII/2012: intermitt. AB, PSA 0,8 – 3,66
CASE
72 y.o. WM after RPE, initially 380ml/day, refused AUS, received Pro Act balloons 7mts postop.

After 4 adjustments still leaking 60mls/day, 2 pads filling status R: 8ml, L: 11ml, no improvement after last adjustment

Evaluation?

Options?

combine with sling or 3rd balloon

Case presentation
- 62 y.o. WM, AUS after RPE, presents with burning pain at micturition, underwent cysto the day before
- Evaluation?

Case presentation
- 62 y.o. WM, AUS after RPE, presents with burning pain at micturition, underwent cysto the day before
- Evaluation? Urine appears sterile
AMS 800
iatrogenic lesion (cysto)
mobilisation using cuff
ID of lesion
closure
protection flap
cuff left open!
• 14 fr foley 5d
• SP tube 14d
• Cuff closure after 4-6 weeks

• 14 fr foley 5d
• SP tube 14d
• Cuff closure after 4-6 weeks

• What to do if the urine was infected??

end

• What to do if the urine was infected?

- Remove AUS and wait 3 mts
- or
- remove only cuff, irrigate wound, use mushroom-plug, oral AB for one month, reimplant cuff

TAKE HOME MESSAGES

• MSUI works differently than female SUI
• establishment of Patient groups should be encouraged
• Physical therapy remains 1st line treatment
• Medical therapy mainly for OAB, little evidence for duloxetine
• With correct indications high success rates can be achieved – even in complex cases –
• Most newly developed implants are adjustable
• The last pad may be the most difficult to get rid of

Weinviertel Klinikum Korneuburg - Austria

= referral center for male incontinence
between 2001 and 2008: 558 operations for male incontinence
42,4 % re-operations.

telephone survey conducted in I-III/2009:
satisfaction rate 83,76% (all several different methods)
No difference between primary surgeries and reoperations =>
Reoperations should be looked upon positively whenever considered.
Case

- 58 years old patient RRP & EBRT.
- H/O recurrent PPI using 3-4 pads a day.
- AUS 1 Y after RRP
- infected AUS.

Patient refuses another AUS. BAMS

- Male sling removed and underwent AUS through transverse scrotal incision.

Infection

If no erosions, can salvage
- Salvage Protocol*
  - Remove AMS 800 and foreign material
  - Irrigate wound w/ 7 antiseptic solutions
  - Change gowns, gloves, surgical drapes and instruments
  - Insert new AMS 800
  - Close wounds w/ no drains or catheters
  - Treat w/ oral antibiotics for 1 month

- If erosion – remove all components and return in 3-6 months

*Mulcahy JJ. J Urol. 2000;163;481-482.

Antiseptic Irrigating Solution for Infected AMS 800

1. Antibiotic irrigation (bacitracin and gentamicin in 0.9% normal saline)
2. ½ strength hydrogen peroxide
3. ¼ strength povidine-iodine
4. Pressure irrigation w/ 1 gm. Vacomycin and 80 mg. gentamicin in 5 l. 0.9% normal saline
5. ¼ strength povidine-iodine
6. ½ strength hydrogen peroxide
7. Antibiotic irrigation (bacitracin and gentamicin in 0.9% normal saline)

*Mulcahy JJ. J Urol. 2000;163;481-482.
Remedying failed AUS

- Options
  - Down size cuff
  - Tandem Cuff
  - Transcorporeal cuff
  - Other options: Sling; proACT; Constrictor; Urinary Diversion

AMS 800 - Reasons for Revisions

- Of 554 men undergoing AUS implantation – 21% had revision
  - Mechanical (23%)
    - Cuff leak – 16 cases
    - Other leak – 8 cases
    - Pump malfunction – 3 cases
  - Non-mechanical (77%)
    - Atrophy – 63 cases
    - Cuff size – 4 cases
    - Erosion – 21 cases

- Every procedure which involves antiincontinence devices can have complications: BE PREPARED!
- The most common complications are INFECTION, EROSION, FAILURE
- The main risk factor is RADIATION THERAPY: good counseling for those patients is crucial
- Complication is detected by Symptoms: LISTEN TO THE PATIENT!
Ensure your patients and yourself that you are not alone

Case presentation

• 64 y.o. 14 m. post RRP, pT2, N0,R-
• Post op PSA o.o1 ng/ml
• 24h Pad test = 150 g
• Pad count 3

CASE

65 years old

ProACT

3 months post op.

3 adjustments; After each adjustment total continence for less than 1 week

3 days after the last adjustment T 38 C.

Case presentation

• 64 y.o. 14 m. post RRP, pT2, N0,R-
• Post op PSA o.o1 ng/ml
• 24h Pad test = 150 g
• Pad count 3

- Cystoscopy?
- Urodynamics?
- Physical therapy?
• 62 years old

• Radical retropubic prostatectomy 2 years ago

• Pad weight test 280 g/day

• Unsatisfied

• Underwent sling procedure
One week afterwards, urethral catheter

No improvement

What’s next?

67 y.o G.C. status post RRP and SUI

Underwent artificial urinary sphincter

Procedure uneventfull

Post op day 1 – incision urinary leakage

• Foley catheter

• cystoscopy

• urethrocystography

• AUS explantation

• suture the lesion

65 year old male s/p rrp and adjuvant XRT with multiple dilations of obliterative BN
Controversies

• Mild?
• Moderate?
• Severe?

- What treatment?
- When to start?
- How to manage failures?