

## W4: Current Treatment of Post-Prostatectomy Incontinence

Workshop Chair: Wilhelm A. Huebner, Austria

06 October 2015 09:00 - 10:30

Start	End	Topic	Speakers
09:00	09:10	Pathophysiology and diagnostic approach to PPI	Fernando García Montes
09:10	09:20	Physical therapy, indications, possibilities and limits	Heather Lynn Moky
09:20	09:25	Discussion	All
09:25	09:40	Classic surgical therapy: AUS and retrourethral slings, trouble shooting	Ricarda Bauer
09:40	09:55	Adjustable systems (Pro-Act, slings, flowsecure, zephyre), trouble shooting	Wilhelm A. Huebner
09:55	10:10	Discussion	All
10:10	10:30	Decision making, questions and answers, cases	Wilhelm A. Huebner

### **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 to give a comprehensive overview of the current aspects of male urinary incontinence in a multidisciplinary fashion. Physical therapists and urologists will discuss the current possible options for an optimal counselling and treatment of male urinary incontinence. At the end of the session the participants will be able to perform specific diagnostic steps, be familiarised with the most frequently performed physical therapy and other rehabilitation options; achieve the basic knowledge of different surgical options, management of difficult cases and complications.

### **Learning Objectives**

1. Differentiate between failure of striated and smooth muscle sphincter component
2. Perform proper evaluation prior to therapy of male incontinence
3. Understand differential indication between male slings (adjustable/non adjustable), Pro Act balloons and artificial urinary sphincter

## Differential indication for surgical treatment of male post-prostatectomy incontinence

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Today a variety of surgical treatment options for male incontinence are available. Although they differ in therapeutic potential, complexity, price, limits and long-term experience, some methods can be used as alternative for each other, in case of treatment failure [1-8]. Hence, today many patients can be offered several treatment options. The choice of the most appropriate procedure should still be done with extraordinary diligence, which requires understanding of the pathophysiology of post-prostatectomy incontinence as well as an open mind concerning the entirety of the patient in regard to cognitive, manual and physical attributes.

### Post-prostatectomy incontinence

The notion of Dorschner et. Al. [9] distinguishing between the interior bladder neck sphincter and an external urethral sphincter (raptussphincter urethrae) can be seen as foundation for diagnostics and treatment of post-prostatectomy incontinence. The external sphincter, which is mostly responsible for continence is also divided into a smooth (musculus sphincter urethrae glaber) and a striated (musculus sphincter urethrae transversostriatus) muscle component. Following this approach the smooth muscle component is responsible for baseline continence, and does not suffer from fatigue. Yet during surgery the innervating structures can be damaged, leading to impaired baseline continence [10]. The striated muscle component, together with the (also striated) pelvic floor muscles, has a much stronger contraction and can provide sufficient closing of the urethra during short periods of elevated abdominal pressure, ensuring stress continence. The innervation of the striated muscle component through the pudendal nerve is usually not compromised by the radical prostatectomy, thus allowing even severely incontinent patients to interrupt their urinary stream, also visible as a short closing of the urethra in cystoscopy after the patient is prompted to clench [11,12]. The clinical presentation of most post-prostatectomy incontinent patients also supports this claim, where the urinary stream can be interrupted and coughing does not prompt any loss, while suffering from a substantial baseline incontinence, especially during the second half of the day, caused by fatigue of the striated sphincter. With understanding of these mechanisms, targeted and reasonable diagnostics can be done, leading to a successful and individually adjusted therapy.

## Outline of the current options for surgical treatment of post-prostatectomy incontinence

### Hydraulic sphincter:

AMS-800 (Scott-sphincter), bulbar – infradiaphragmal target location, long-term experience, very reliable outcome, usable in patients with detrusor contractility (open-close mechanism), limited through manual and/or cognitive impairments, expensive.

### Retrourethral sling:

Advance, retrourethral – diaphragmal target location, sphincter repositioning, preoperative elevation test necessary, postoperative retention 10-20%, limited in patients with radiation, neobladder and severe incontinence.

### Adjustable slings:

Argus, Remmex, Atoms, Phorbas, suburethral – diaphragmal target location, possible intra/postoperative adjustment of the urethral pressure, verification of stream-interruption advised, limited in patients with neobladder.

### Adjustable balloons:

Pro-ACT, bladder neck – supradiaphragmal target location, over 10 years of experience, minimally invasive, low dry rates, prolonged start-up phase till adjustment, contraindicated in patients with radiation, limited in patients with previous surgery around the bladder neck.

### Bulking agents:

Numerous products, target location mostly right at the anastomosis, very restricted effect in male incontinence.

## Differential indication

Basically all methods mentioned above can potentially provide very positive outcome. Therefore differential indication is mostly done through contraindications and limits of the possible treatments (**differential indication through exclusion!**). Secondly the decision is influenced by such factors surgical expertise and personal preference of the patient. Table 1 shows which method should be indicated positive, neutral or only with great caution in patients with certain medical findings.

Although the choice of surgery should not be solely based on the extent of incontinence, suburethral devices (adjustable slings, AMS-800) with comparable success rates seem to achieve higher dry rates than retrourethral slings. Pro-ACT shows similar success in patients with different grades of incontinence, yet overall those are a little lower than those of suburethral procedures [1-3, 13-21]. Bladder voiding dysfunction (detrusor insufficiency/neobladder) presents a contraindication for slings (of any kind). Here, only treatment with an AMS-800 or the easily adjustable pro-ACT implants should be used. If this is not possible

due to radiation or manual restriction the necessity of self-catheterization should be expected.

Cerebral and manual limits should be considered contraindications of the AMS-800, yet even this surgery is considered to only expose the patient to a low level of stress.

If the proximal urethra was damaged (through incision or radiation) or otherwise compromised, the conditions for implantation of Pro-ACT or retrourethral slings are unfavorable. In these cases more distal (suburethral) devices are recommended (scott-sphincter, suburethral slings).

The psychological situation must also be considered, as (e.g.) the idea of using a pump can be a personal obstacle for many patients. If a patients circumstances have already brought him to the edge of his coping capacity (e.g. insufficient/untreatable erectile dysfunction), we still prefer the AMS-800, since it has the lowest rate of treatment failure.

The time between surgeries does not factor in to the indication. Even years after prostatectomy, a surgery can lead to complete success. However the possibility of a high micturition frequency due to decrease in bladder capacity should be discussed.

**Table 1**

	AMS-800	Advance	Adj. slings	Pro-ACT
High level incontinence	+	-	+	o
Prev. surgery	+	o	+	+/-
Radiation	+/o	o	+	-
Residual sphincter	+	o	o	o
Mental capability	-	+	+	+
Manual capability	-	+	+	+
Detr. Insuff/neobladder	+	-	-	+
Invasive	o	o	o	+
Pat. Attitude	o	+	+	+
Psych. factors	+	o	o	-

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## Notes