# Injection of a bulking agent to combat urinary incontinence after unsuccessful sling therapy in a patient with post prostatectomy urinary incontinence

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**Case Report** 

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## Injection of a bulking agent to combat urinary incontinence after unsuccessful sling therapy in a patient with post prostatectomy urinary incontinence

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Keywords: Incontinence; Sling; Bulking agent; Therapy; Post-prostatectomy

#### Introduction

We report a case of a successful treatment of post prostatectomy urinary stress incontinence with bulk injections after failed primary treatment with a sling.

#### **Case presentation**

A 70 year-old man was referred to the *Urologen Kliniek Vleuten*, with complaints of persistent stress urinary incontinence (SUI). His past medical history includes an open radical prostatectomy for a pT2cNxMx Gleason 6 adenocarcinoma of the prostate, with an initial PSA of 6.6 July 2011. Two years after prostatectomy the patient still complained of mild SUI, despite extensive pelvic floor physiotherapy. To treat the incontinence, an Argus sling was implanted in 2013. Nevertheless, the patient still complained of stress urinary incontinence after this procedure. After referral of the patient in 2016, the workup for the SUI consisted of 24 hours voiding chart and 24-hour pad test revealing a bladder capacity of ... and the use two pads a day because of the urinary incontinence. An urethroscopy showed a patent urethra and neobladder neck, circular contraction of the urinary sphincter and a bladder without abnormalities and with a good capacity. A CT scan of the pelvis showed the sling was positioned properly, with no other abnormalities (figure 1).

During the procedure the patient is positioned in lithotomy position. An urethrocystoscopy is performed with a 19 french rigid cystoscope while the patient is awake. He is instructed to contract the pelvic floor in order to identify the urinary sphincter. The location for the injection of the bulk is thus identified. This is typically just below the urinary sphincter the cystoscope is removed and the patient receives general anaesthesia. Meanwhile the Prolastic applicator **Unsuccessful sling therapy in a patient with post prostatectomy urinary incontinence after incontinence** 

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sets are attached to the cystoscope and the position of the needles with relation to the tip of the cystoscope is decided upon. The tips of the needles are situated at 5 and 7 o'clock in relation to the top of the cystoscope (figure 2).

The cystoscope is again introduced in the urethra and the needles are advanced through the perineum. Despite the deposition of 1,6 cc of bulking agent Prolastic, at 5 and 7 o'clock at 1 cm below the neobladder neck to increase the intra-urethral closing pressure, the patient did not experience any improvement. A second procedure followed three months after the initial procedure. 12 months after therapy the patient still is fully continent, and pads are no longer necessary.



**Figure 1:** Positioning of the sling and prolastic after the second procedure.



**Figure 2:** Illustrating cystoscope attached to Prolastic<sup>®</sup> applicator support and prolastic pistole [10].

#### Discussion

Stress urinary incontinence is defined as the complaint of involuntary leakage on effort on exertion, or on sneezing or coughing [1]. Postprostatectomy stress incontinence is a result of different factors, including dysfunction of the internal sphincter, caused by the surgery. Physical examination and a bladder diary are used to objectify the diagnosis, whereas the pad-test can be used to quantify the degree of incontinence [2]. The prevalence of postprostatectomy incontinence is widely reported, varying from 1-40% [3]. As a consequence, 6% of post-prostatectomy patients undergo at least one surgical treatment for stress urinary incontinence [4]. The surgical treatment consists of the three following options; the injection of a bulking agent, implementation of a sling or an artificial urinary sphincter (AUS). [5] The choice depends on the severity of the incontinence.

Sling application is indicated in cases of mildto-moderate post prostatectomy incontinence. There are two theories that try to explain the effect of a sling. First, slings reposition the bulb of the urethra, second slings restore the urethral compression, like the Argus<sup>®</sup> [5]. The success rate of the Argus sling has been reported to be up to 66% after three years of implantation [6]. According to the EAU guidelines a bulking agency is an optional therapy for men with mild post-prostatectomy incontinence with a desire of temporary relief of the symptoms [7]. Though the results of bulking agents are less than slings or AUS, the injection of bulking agents, is considered the least invasive option of the surgical treatments for male SUI.

During this treatment bulk is injected at the dorso-lateral sides of the urethra (at 5 and 7 o'clock) to increase coaptation at the level of the internal sphincter. Prolastic<sup>®</sup> is a non-resorbable bulking agent consisting of vinyldimethyl terminated polydimethylsiloxane (PDMS) polymer, which

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is injected para-urethral during a cystourethroscopy. The advantage above other bulking agents could be successful long-term outcomes because of this non-resorbable material. Success rate of Prolastic<sup>®</sup> is unknown, success rate of other bulk materials has been reported to be up to 46% [8].

Data of Urolastic bulking agents also made from PDMS by the same manufacturer as Prolastic, used for female patients with stress urinary incontinence showed good functional results with moderate adverse complications [9]. In this case we showed that a bulking agent could be used as a supplementary therapy for stress urinary post prostatectomy incontinence after a sling procedure was inadequate.

### Conclusion

The use of a bulking agent can be considered in cases of persistent stress urinary incontinence after a sling procedure for post-prostatectomy incontinence proved insufficient.

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