

InVance® sling postopek za zdravljenje moške stresne urinske inkontinence

The InVance® sling procedure for male stress urinary incontinence

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Izvleček

Namen: Stresna inkontinenca urina je pri moških relativno redka in se pojavi kot posledica večjega operativnega posega, drugi vzroki stresne inkontinence urina se pri moških pojavljajo izjemoma. Ne glede na relativno majhno število prizadetih takšno uhajanje urina obolelim predstavlja velik medicinski in tudi socialni problem, saj se odpovejo normalnim dnevnim aktivnostim in se vse bolj omejujejo na domače okolje.

Metode: Ena izmed možnosti zdravljenja stresne urinske inkontinence pri moških je tako imenovani InVance Male Sling sistem. Gre za minimalno invazivno kirurško metodo, pri kateri se na spodnjo stran pubične kosti z vijaki pritrdi poliesterska mrežica, ki tesni sečnico. V principu gre za sling operacijo.

Rezultati: Na našem oddelku smo med letoma 2004 in 2007 z omenjeno

Abstract

Purpose: In men, stress urinary incontinence is relatively uncommon and usually follows a major surgical procedure. Other causes (neurogenic) are rare. Although uncommon, it has a big impact on the quality-of-life of affected patients because it interferes with their daily activities and social life.

Methods: One of the recently developed methods of treating this condition is the InVance® Male Sling system. The silicone-coated polyester mesh is anchored to the pubic bone and supports the urethra, pressing it against the pubic symphysis. We analyzed the mid-term results of this method.

Results: Two urologists treated 38 patients with this method between 2004 and 2007. Thirty-four subjects had urinary incontinence after radical prostatectomy and 4 cases after trans-

metodo zdravili osemindvajset bolnikov. Pri štiriintridesetih je šlo za stanje po radikalni odstranitvi prostate, pri štirih pa za stanje po transuretralni resekciji prostate. Čas spremljanja po posegu je pri vseh daljši od dveh let. Osemindvajset bolnikov navaja popolno ozdravitev (brez uporabe predlog), šest bolnikov navaja blago stresno inkontinenco (ena predloga dnevno), pri štirih bolnikih pa ni prišlo do izboljšanja. Pri nobenem bolniku nismo opažali zastoja urina ali na novo nastalih težav pri uriniranju, smo pa pri treh bolnikih srečali podaljšano gnojno izcejanje iz postoperativne rane in še pri treh kasno zavrnitev mrežice, zato smo pri teh bolnikih morali mrežico odstraniti. Imeli smo tudi bolnika z erozijo sečnice osem mesecev po posegu.

Zaključek: Glede na naše rezultate lahko zapišemo, da je InVance sling operacija uspešna metoda zdravljenja moške stresne inkontinence urina z minimalnimi pooperativnimi zapleti.

urethral resection of the prostate. All had mild-to-moderate day-time stress urinary incontinence. Patients were followed up for ≥ 2 years. Twenty-eight of them were completely dry and did not use any pads for protection. Six patients had mild residual stress urinary retention and used one pad daily. Four patients remained incontinent with no improvement. No major early complications, urinary retentions or de-novo micturition problems (urgency) were reported after the procedure.

Conclusions: The InVance Sling method is a simple way to treat male stress urinary incontinence and has good mid-term results. Larger studies are needed to confirm the safety of this method.

INTRODUCTION

Stress urinary incontinence in men is relatively uncommon and usually follows a major surgical procedure such as radical prostatectomy or cystoprostatectomy. Stress urinary incontinence is involuntary leakage of urine during use of the abdominal musculature in several situations, such as coughing, sneezing, climbing the stairs, lifting heavy objects or any similar exercise. In severe cases, even mild exercise such as walking can result in urinary leakage. It is caused by the weakness of the urinary sphincteric system which, after prostatectomy, mainly depends on the activity of pelvic floor muscles. It can also occur after suprapubic prostatectomy or transurethral resection of the prostate (TURP). Other causes (which are usually neurogenic) are very rare. Although uncommon, this condition represents a great medical, hygiene, and social problem for affected men and has a great impact on quality of life. Men with urinary incontinence slowly withdraw from their usual daily activities, confine themselves to domestic surroundings, and exclude themselves from social life (1–3).

Currently established methods of surgical treatment of this condition are implantation of artificial urinary sphincters (AUS), transurethral injections of bulking agents and sling procedures (4–6). Implantation of an AUS is considered the “gold standard” treatment for treating male stress urinary incontinence but it does not provide physiologic control of micturition. Also, the reported prevalence of success varies widely from 64% to 93%. The prevalence of long-term complete continence based on assessment with questionnaires is $\sim 20\%$. Additionally, in 36% of patients there was at least one revision necessary and according to the literature these patients require a mean 2.25 revisions in 5 years (7–9). Transurethral injection of a bulking agent is a less invasive method for treating male urinary stress incontinence, and several bulking agents can be used. However, this method is usually ineffective after radical prostatectomy because the region of vesico-urethral anastomosis is too fibrotic for an adequate amount of a bulking agent to be injected. Other minimally invasive methods have been developed, and sling procedures are becoming increasingly popular. Several sling pro-

cedures are described in the literature. Most slings are self-anchoring. Some are adjustable and some non-adjustable. All report similar short-term results that are quite promising (4, 6, 7, 10, 11).

Another minimally invasive procedure was developed recently to treat men with intrinsic sphincter deficiency. With this method, a silicone-coated polyester mesh is anchored to the lower rami of the pubic bone via a transperineal approach using specially designed anchoring screws. This mesh functions as a sling, supporting the urethra and compressing it against the pubic symphysis. The advantages of male sling compared with AUS implantation are physiological micturition, a minimally invasive procedure, less expense and an immediate result (10, 11). However, there is a lack of reports on the long-term results of this method. We evaluated the results after 2 years of follow-up in patients treated at Department of Urology, Surgery Clinic, University Clinical Center Maribor.

MATERIALS AND METHODS

Between 2004 and 2007, we treated 38 patients with the InVance® male sling system. All had mild-to-moderate daily stress urinary incontinence, using up to 3 pads daily. Thirty-four subjects were incontinent after radical prostatectomies and 4 of these patients had a prior TURP. They were all dry at night. They were evaluated with detailed history-taking and physical examination.

The procedure was undertaken by two urologists. A midline perineal skin incision was made, continuing through Colle's fascia. Leaving the bulbospongiosus muscle intact, the lateral exposure was made. This enabled anchoring of the screws to the inner aspect of the pubic rami on each side. Using pre-connected polypropylene sutures, the InVance mesh was tightened under the urethra. Maximum possible tension was used while omitting the intraoperative tests for urinary leakage. After the procedure, success was evaluated by the number of pads necessary to control urinary incontinence. Patients were considered "cured" if they no longer used pads for protection. If patients

were using one pad daily and used more than one pad before the procedure, the condition was regarded as "improved". The rest of the patients were considered "unimproved".

RESULTS

All the patients in this report were followed for >2 years. The procedure was successful in 34 patients (89.5%): 28 (73.7%) were completely dry and used no pads, and 6 (15.8%) were improved and are using one pad daily. Failure of the InVance sling procedure was noted in 4 patients (10.5%) because there was no improvement in urinary incontinence. No major early postoperative complications were noted. No cases of urinary retention or de-novo micturition disorders (urgency) were noted. We observed wound infections in 3 patients and 3 more in which a granuloma at the site of the mesh had formed >6 months after the procedure. In all 6 of these instances the mesh had to be removed. We observed another late complication in a patient who experienced a sudden sharp pain in the perineal area 8 months after surgery, and this was followed by urinary retention. Cystoscopy revealed erosion of the urethra with the mesh crossing the urethra. The intraluminal part of the mesh was cut and removed by endoscopic means but the remains of the mesh had to be completely removed later because urinary retention reappeared.

Male sling procedures for treatment of stress urinary incontinence in men have produced encouraging results. Many methods have been described, among them the AdVance® non-adjustable sling, Argus® adjustable sling, and the Adjustable Transobturator Male System (ATOMS®). The prevalence of short-term success ranges between 76% and 90%. Few data are available except for long-term results (4, 10, 12, 13).

The InVance male sling system is a minimally invasive procedure that uses pre-connected bone anchoring screws for placing a mesh under the urethra. Several reports have shown good short-term results for this method and few complications. Comiter (14) reported on 45 patients with follow-up from 12 months to 42

months. Success was considered to be the use of 0–1 pad daily and the prevalence was 83%. There were no instances of erosion, infection, excessive bleeding or prolonged urinary retention in the series of Comiter. Our results matched those results in term of the prevalence of success in an even longer follow-up because all of our patients were evaluated after ≥ 24 months. However, we observed wound infection in 3 patients postoperatively and another 3 cases in which a granuloma had formed at the site of the mesh >6 months after the procedure. The wound infections were probably due to the proximity of bacteria near the anal region. After these 3 cases, special care was given to preparation of the surgical field and wound dressing. We are unsure of the reason for granuloma formation after such a prolonged period of time. One of the factors could be the nature of the mesh material; it was a silicone-coated polyester and granuloma formation could have been a tissue reaction to silicone. Authors have not reported this complication so we can not make a comparison. The only urethral erosion that we observed also occurred very late after the procedure when the scar

tissue around the mesh should already have been well formed. Hence, we can only conclude that the healing process was impaired in this patient because the procedure was done in an identical manner as in the other patients by leaving plenty of periurethral tissue between the mesh and the urethra.

CONCLUSION

The InVance male sling system is a simple, minimally invasive procedure for treating mild-to-moderate stress urinary incontinence in men. It gives good results that are observed even at mid-term follow-up. Our data confirmed such good mid-term results and are comparable with those reported by other authors. We did, however, observe some complications in the form of wound infections and mesh rejections that have not been reported in other series. We also observed one instance of urethral erosion which had also not been reported in the literature. Larger studies are needed to draw the final conclusions about the prevalence of these possible complications.

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