

Stress urinary incontinence in patients treated for cervical cancer: is TVT-Secur a valuable treatment option?

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Abstract We present two patients with bothersome stress urinary incontinence (SUI) following radical hysterectomy and pelvic lymphadenectomy for early stage cervical cancer. One patient underwent adjuvant radiotherapy. We selected, after extensive counseling, TVT-Secur in these two patients as we aimed to avoid the pelvic cavity, expecting altered anatomy due to major pelvic surgery, and counting on low risk of developing bladder retention, given results of a case series. Both patients were continent post-operatively. One patient presented with a small tape erosion that was successfully corrected using local analgesics. The other patient developed urgency symptoms that disappeared after treatment with solifenacine. Both patients had detrusor hypo-activity at pre-operative urodynamics, but no bladder retention occurred following surgery. In patients with a history of radical hysterectomy who present with SUI, we would advise to counsel that satisfying results can be expected of TVT-Secur, although it is likely that additional care after surgery is needed.

Keywords Cervical cancer · Stress urinary incontinence · TVT-Secur

Abbreviations

SUI stress urinary incontinence
RH radical hysterectomy
FIGO International Federation of Gynecology and Obstetrics
PRV post-voiding residual bladder volume
UDI urogenital distress inventory

IIQ Incontinence Impact Questionnaire
TVT tension-free vaginal tape

Introduction

Radical hysterectomy is a known risk factor for the development of stress urinary incontinence [1]. There is limited evidence about managing SUI optimally in patients treated for cervical cancer. The standard regimen of prescribing supervised pelvic floor muscle training and proposing a mid-urethral sling procedure if this fails, may not work in this group of patients due to their unique characteristics: (1) during radical hysterectomy autonomic nerve damage results in hypo-activity of the detrusor muscle, therefore, having increased risk of bladder retention following surgery [1]; (2) adjuvant radiotherapy worsens the quality of the vaginal mucosa due to fibrosis and decreased vascularisation, resulting in increased erosion risk [2]; (3) radiotherapy for cervical cancer can cause detrusor overactivity.

Since the introduction of the TVT, it has been attempted to reduce the morbidity of the procedure. The trans-obturator technique offers an approach that avoids the bladder region, resulting in less bladder lesions. Recently, TVT-Secur has been introduced allowing vaginal introduction of a mid-urethral sling without passing the retro-pubic space nor the obturator foramen and its related nerves and vessels [3].

We selected TVT-Secur in the following two cases as we aimed to avoid the pelvic cavity, expecting altered anatomy due to extensive pelvic surgery, and counting on low risk of developing bladder retention, given the first results of a case series reporting low risk on bladder retention [3].

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Case reports

Patient A, a 52-year-old woman visited the uro-gynaecology outpatient clinic with bothersome stress urinary incontinence (SUI) and overactive bladder symptoms. Eight months before, she underwent radical hysterectomy (RH) with pelvic lymphadenectomy for cervical adenocarcinoma FIGO stage IB-I. SUI was present before this treatment but had become more severe afterwards. She reported no defecation or sexual symptoms. She had two spontaneous deliveries and was postmenopausal.

Pelvic examination revealed mild atrophy of the vaginal mucosa. Pelvic organ prolapse was not observed. Urodynamic investigation confirmed the presence of SUI and, additionally, showed hypo-activity of the detrusor.

Pelvic physiotherapy failed after which the patient opted for a mid-urethral sling procedure. She was counseled about the increased risk on bladder retention, self-catheterization and worsening of urgency. It was decided to perform TVT-Secur, after a vaginal estrogen therapy of 4 weeks. The procedure was performed with local analgesics and sedation without complications.

Six hours after the procedure, the patient could not empty the bladder. An indwelling bladder catheter was replaced for 24 h, after which, the post-voiding residual bladder volume (PRV) was 50 ml and the patient was discharged.

A follow-up 6 weeks post-operatively showed large reduction of SUI, but slight increase of urgency and frequency. During pelvic examination, the tape appeared to be localized at the level of the mid-urethra. There was a PRV of 60 ml, no erosion and no urinary tract infection.

Three months after surgery, treatment with solifenacin 5 mg per day was started because of persistent urgency symptoms. Six months post-operative, the patient had no SUI and no overactive bladder symptoms.

Patient A completed the Urogenital Distress Inventory (UDI) and Incontinence Impact Questionnaire (IIQ) before surgery and 6 months after surgery [4]. Domain scores of these questionnaires vary from 0 (minimal bother) to 100 (maximal bother). The score of the UDI incontinence domain before and 6 months after surgery was 66 and 0, respectively; of the UDI overactive bladder domain, 66 and 0, respectively; of the IIQ mobility domain, 89 and 44, respectively; and of the IIQ emotional domain, 55 and 11, respectively.

Patient B, a 44-year-old woman presented at the uro-gynaecology outpatient clinic with progressive stress urinary incontinence (SUI). Five years before, she underwent radical hysterectomy and pelvic lymphadenectomy because of cervical squamous cell carcinoma FIGO stage IB-I. Adjuvant radiotherapy was administered because of tumour invasion in the right parametrium. During a 5-

year follow-up, there had been no evidence of recurrent disease.

Apart from bothersome SUI, she complained about frequency. There were no urgency or urge-incontinence symptoms. She did not report defecation symptoms. Her sexual activity was limited due to decreased sexual arousal since treatment of her malignancy. She had an obstetric history of one uncomplicated delivery.

During pelvic examination, there was no sign of pelvic organ prolapse or vaginal atrophy. During Valsalva manoeuvre, urethral hyper-mobility and SUI were observed. Urodynamic investigation confirmed the presence of SUI. Bladder capacity was 690 ml and PVR was less than 50 ml. There was hypo-activity of the detrusor muscle.

After extensive counseling, an uncomplicated TVT-Secur procedure was performed. The patient was discharged the same day after the PVR was confirmed to be less than 100 ml.

At the first follow-up visit 6 weeks after surgery, SUI was no longer present. Examination revealed a mid-urethral erosion of 10 by 10 ml. Initially vaginal estrogen therapy was commenced resulting in reduction of the erosion but not in complete closure. Then the erosion was surgically closed using local analgesics after which vaginal estrogen therapy was continued. A small erosion of 3 mm para-urethral was observed 4 weeks after this second procedure. This was cut away at the outpatient clinic and not observed at follow-up visits afterwards.

Before surgery, the score of the UDI incontinence domain was 66, of the UDI overactive bladder domain 33, of the IIQ mobility domain 66 and of the IIQ emotional domain 33. Six months after surgery, all these domain scores were 0.

Discussion

The overactive bladder symptoms in patient A may be related to previous radical hysterectomy, but could also be the result of post-operative cystitis that could have occurred in any patient [5]. The erosion in patient B can be explained by poor tissue quality due to previous radiotherapy as, after closure, a second erosion occurred.

Both patients were satisfied with the result of TVT-Secur despite the fact that additional treatment was needed for unwanted side effects.

Conclusion

This case report shows that TVT-Secur is a valuable treatment option in patients treated for cervical cancer who present with bothersome SUI. We advise to counsel patients that a satisfying result can be expected but that it is also likely that additional care after surgery is needed.

Conflicts of interests None.

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