

THE COMPLICATION OF MINIMAL INVASIVE TREATMENT IN STRESS INCONTINENCE URINARY IN WOMEN

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Keywords: stress urinary incontinence, minim invasive treatment, TOT, TVT, intraoperative complications, perioperative complications, later complications

Abstract: Prospective evaluation of the intra- and post-operative complications after TVT (transvaginal tape) și TOT (transobturator tape) and their treatment. 156 female patients (p) suffering from stress urinary incontinence (SUI) were referred for corrective surgery in Urology Department Sibiu between 2005-2010, using TVT technique for 34 p and TOT technique for 122 p. Surgical treatment was established after analyzing physiological and pathological history. Surgical technique was TVT in-out and TOT out-in, both performed under spinal anaesthesia. Intravaginal swab was removed 1 day after the operation and the urethro-vesical catheter, 2 days after the operation. The follow-up of the patients consisted in clinical examination, echography, urine analyses, at 1, 3, 6, 12 months and then annually. The intraoperative complications were different in the two groups: they affected 4 p (11,76%) in TVT technique and 2 p (1,63%) in TOT technique. Perioperative complications (first 48 hours) affected 8 p (23,52%) in TVT group and 5 p (3,27%) in the TOT group. The mean follow-up time was 49,5 months, on average 56 ± 12 months (media \pm standard deviation) for TVT and 43 ± 15 months for TOT. Later postoperative complications were evaluated during follow-up visits and they affected 3 p (8,82%) in TVT group and 4 p (3,27%) in TOT. Both TVT and TOT are effective and safe methods for the surgical treatment of SUI. However, TOT has a shorter operative time and a lower overall complication rate. Following the operative algorithm is the key in obtaining good anatomic and functional results. Obstetrical and gynaecologic history increase the risk of complications during the operation. Recognition of intraoperative lesion and its treatment "per prima" is essential in order to prevent other complications.

Cuvinte cheie: incontinență urinară de efort, tratament minim invaziv, TOT, TVT, complicații intraoperatorii, complicații perioperatorii, complicații tardive.

Rezumat: Lucrarea își propune o evaluare a complicațiilor intra și postoperatorii apărute după TVT (tension free vaginal tape) retropubiană și TOT (transobturatorie), precum și modalitatea lor de tratament. În perioada 2005-2010 în Clinica de Urologie au fost operate 156 paciente (p) pentru incontinență urinară de efort, în maniera TVT (34 p) și TOT (122 p). Indicația operatorie s-a stabilit în urma examenului clinic complet cu analiza antecedentelor fiziologice și patologice în sfera urogenitală. Tehnica chirurgicală a constat în TVT dinăuntru -înafară și în TOT dinafară-înăuntru, efectuată sub anestezie rahidiană. Postoperator meșa vaginală s-a mobilizat în prima zi și sonda uretrovezicală la două zile postoperator. Postoperator pacientele au fost evaluate clinic, ecografic, bioumoral (urocultură) la 1, 3, 6, 12 luni, apoi anual. Complicațiile apărute intraoperator au fost diferite în cele două grupuri: 4 p din lotul TVT (11,76%) și la 2 p (1,63%) în lotul TOT. Complicațiile postoperatorii imediate (în primele 48 de ore) au apărut la 8 p în lotul TVT (23,52%) și 5 p (4,09%) în lotul TOT. Timpul mediu de urmărire postoperatorie a fost de 49,5 luni, în medie 56 ± 12 luni pentru lotul TVT și de 43 ± 15 luni pentru lotul TOT. Complicațiile postoperatorii tardive au fost evaluate în cadrul vizitelor de evaluare periodică și au apărut la 3 paciente din lotul TVT (8,82%) și la 4 paciente din lotul TOT (3,27%). TVT și TOT sunt metode eficiente și sigure în tratamentul IUE. Tehnica TOT are un timp operator mai scurt și o rată a complicațiilor mai mică. Respectarea tehnicii operatorii constituie un element esențial pentru un rezultat anatomic și funcțional bun. Recunoașterea leziunii intraoperatorii și rezolvarea per primam este o condiție importantă pentru a preveni alte complicații.

INTRODUCTION

Although in the last decade the treatment of Stress Urinary Incontinence (SUI) using TVT (transvaginal tape) și TOT (transobturator tape) has become more and more accepted, we still have to face the possible complications.

THE AIM OF STUDY

This paper's objective is the prospective evaluation of the intra- and post-operative complications after TVT and TOT

and their treatment.

MATERIAL AND METHODS

156 female patients (p) suffering from stress urinary incontinence (SUI) were referred for corrective surgery in Urology Department Sibiu between 2005-2010, using TVT technique for 34 p and TOT technique for 122 p. Surgical treatment was established after analyzing physiological and pathological history. Surgical technique was TVT in-out and

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TOT out-in, both performed under spinal anaesthesia. Intravaginal swab was removed 1 day after the operation and the urethro-vesical catheter - 2 days after the operation. The follow-up of the patients consisted of clinical examination, echography, urine analyses, at 1, 3, 6, 12 months and then annually.

RESULTS

The intraoperative complications were different in the two groups: they affected 4 p (11,76%) in TVT technique and 2 p (1,63%) in TOT technique (table I). Statistic correlation was found between the two groups (Table I). Bladder lesions that occurred during TVT procedure (2p) were discovered using intraoperative cystoscopy. Surgical revision was required: extraction and reinsertion of the tape and the extension of the maintaining period of urethro-vesical catheter up to 7 days. Bladder lesion that occurred during TOT procedure (1p) was discovered due to haematuria and was surgically solved using monoplane suture with separate absorbable 2.0 vicryl thread. Bladder lesion occurred during TOT procedure while passing the guiding device through the obturator fossa, its head perforating the vaginal mucosa on the lateral vaginal wall level.

Table no. 1. The intra-surgery complications in the study lot

Complications intra-surgery	Lote TVT (34 p)	Lote TOT(122 p)	P test
No. patients, p	4 (11,76%)	2(1,63%)	< 0,001
Vesical lesions	2 (5,88%)	1(0,83%)	< 0,001
Vaginal lesion	0	1(0,83%)	ns
Retropubic hematoma	2(5,88%)	0	ns
p= patients, Average values \pm standard deviation ,ns = non-significant			

This incident led to a reinsertion of the vaginal tape, the vaginal breech being sutured per primam with an absorbable 2.0 vicryl thread.

Retropubic haematoma that affected 2p in the TVT group was solved using conservatory techniques: haemostatic, analgesic and antibiotic treatment.

We notice that the incidence of intraoperative complications was higher in the case of patients with urogynaecologic history (table II). Out of 6 patients affected by intraoperative lesions, only 2p (33,33%) had no urogynaecologic history. 5p (66,67%) underwent different surgical procedures on the urogenital level: out of 3p that had bladder lesions, 1p was in the past subject to anterior colporrhaphy, 1p underwent a Burch procedure for SUI; the patient with vagina lesion underwent

anterior colporrhaphy; out of 2p affected by retropubic haematoma, 1p had an earlier vaginal hysterectomy, the other an anterior colporrhaphy.

Perioperative complications (first 48 hours) affected 8 p (23,52%) in TVT group and 5 p (3,2%) in the TOT group (table III).

Acute urine retention affected 3p in the TVT group and 1p in the TOT group. Acute urine retention which occurred after urethro-vesical catheter ablation 48 hours post operative time was initially solved reinserting the catheter for a 5-day period. After urethro-vesical catheter ablation 7 days post operation, 2 p went back on spontaneous miction and 2p in the TVT group still suffered from acute urine retention which required loosening the tape with a Benique tool under spinal anaesthesia.

Chronic urine retention post urethro-vesical catheter ablation occurred in the case of 2p in the TVT group and 1p in the TOT group. The treatment consisted of alpha blocker medication (tamsulosin, 0,4 mg tablets, 1 tablet in the evening) and cholinomimetics (neostigmine, 15 mg tablets, 3 tablets/day) over a 30-day period.

Moderate fever affected postsurgery 1p in the TVT group, who also had retropubic haematoma. The patient received antithermic, analgesic and antibiotic treatment over a 7-day period.

Post operative urinary infection affected 2p in the TVT group. They received specific 7-day antibiotic treatment according to uroculture results. Sustained urinary incontinence was diagnosed in 3p in the TOT group, who required another anti-incontinence operation and tension of the tape.

The mean follow-up time was 49,5 months, on average 56 ± 12 months (media \pm standard deviation) for TVT and 43 ± 15 months for TOT.

Later postoperative complications were evaluated during follow-up visits and they affected 3 p (8,82%) in TVT group and 4 p (3,27%) in TOT (table IV).

Vaginal erosion affected 1p in the TVT group and 1p in the TOT group. Both cases were solved under local anaesthesia by vagina secondary suture.

Recurrence of urinary incontinence was diagnosed in 3p in the TVT group. They required reoperation using TVT procedure performed under spinal anaesthesia. Post operative and at the follow-up visits the patients were dry.

De novo urgency affected 2p in the TVT group. The treatment consisted of antimuscarinic medication (solifenacin, 5mg tablets, 1tablets/day).

Table no. 2. Intraoperative complications according to urogynaecologic history

Urogynaecologic history	P	Bladder lesion		Vaginal lesion		Retropubic haematoma		P TEST
		TVT 2	TOT 1	TVT 0	TOT 1	TVT 2	TOT 0	
Hysterectomy	32	-	-	-	-	1	-	
Anterior colporrhaphy	9	-	-	-	1	1	-	<0,005
Posterior colporrhaphy	6	-	-	-	-	-	-	-
Burch	3	-	1	-	-	-	-	<0,005
No history	106	2	-	-	-	-	-	-
P.patients								

Table no. 3. Postoperative complications in study group

Postoperative complications	TVT(34 patients)	TOT (122 patients)	P
No. patients, p	8(23,52%)	5 (4,09%)	Ns
Acute retention of urine	3 (8,82%)	1(0,81%)	Ns
Chronic retention of urine	2(5,88%)	1(0,81%)	Ns
Fever	1(2,94%)	0	Ns
Urinary infections	2(5,88%)	0	Ns

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Table no. 4. Later postoperative complications in study group

Later postoperative complications	TVT (34 patients)	TOT (122 patients)	p
No. patients, p	3 (8,82%)	4 (3,27%)	ns
Vaginal erosion	1(2,94)	1(0,81%)	ns
Recurrence of urinary incontinence	0	3(2,46%)	ns
De novo urgency	2(5,88%)	0	ns

DISCUSSIONS

Transobturator route is associated with a lower risk rate of bladder lesions. Dargent and co. reported no bladder lesions during TOT in the first 71 patients (1). However, only a few cases of bladder lesions (0,5%) have been reported in the past literature(2,3) frequently in patients with an associated cystocele (3,4). Cystoscopy is not recommended during TOT procedure when it is performed in normal conditions (5). Concerning intraoperative complications Liapis and co. reported 3 cases (6,5%) of bladder lesions during TVT procedure and no lesions during TOT procedure (6).

The low rate of intraoperative complications in the case of TOT was explained by Bonnet and co. in their anatomic studies (7). They observed that pelvic region is completely outside the dissection field. The device passes in a virtual space located in the most anterior part of the ischiorectal fossa. In our study group 3 p were affected by bladder lesions: 2 p (5,88%) in TVT group and 1 p in TOT group. The patient in TOT group had undergone anterior colporrhaphy. The two patients in TVT group had no urogynaecologic history. Thus we can say that TVT technique is associated with a higher risk rate of bladder lesion and urogynaecologic history increase the risk of intraoperative bladder lesions regardless the technique used.

Some author showed that the TVT technique is an efficient and safe method in the treatment of SUI with a good rate of postoperative urinary continence (8-10). The complications associated with TVT include bladder lesion (2,7%-13,8%), intraoperative bleeding (4%), retropubic haematoma (0,6%-3,4%), persistent urine retention(0,5-20%), urinary infections (0,7%-22%) and the novo urgency (2,5%-25%). The studies also showed that the rate of intraoperative bleeding, infections, and postoperative urinary voiding difficulties is lower in the case of TOT technique than in TVT procedure (11-14).

CONCLUSIONS

Both TVT and TOT are effective and safe methods for the surgical treatment of SUI. However, TOT has a shorter operative time and a lower overall complication rate. Following the operative algorithm is the key in obtaining good anatomic and functional results. Obstetrical and gynaecologic history increase the risk of complications during the operation.

Recognition of intraoperative lesion and its treatment "per prima" is essential in order to prevent other complications

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