Int J Clin Exp Med 2020;13(8):5975-5982
www.ijcem.com /ISSN:1940-5901/IJCEM0113495

Original Article

Effects of fast-track surgery nursing in treating female stress incontinence by tension free vaginal tape

Hua Chen[1], Haiquan Luo[2], Jian Mou[1], Sixiang Chen[1], Zhuling Dai[1], Jianhua Lan[1], Ning Yang[2]

[1]Department of Urology, Guang'an People's Hospital, Guang'an 638000, Sichuan, China; [2]Guang'an People's Hospital, Guang'an 638000, Sichuan, China

Received April 28, 2020; Accepted June 2, 2020; Epub August 15, 2020; Published August 30, 2020

Abstract: Objective: This study was designed to explore the effects of FTS (fast-track surgery) nursing in treating female stress incontinence by TVT. Methods: The clinical data of 99 female patients with stress incontinence at our hospital from March 2017 to June 2018 were retrospectively collected. These patients were treated by TVT, and divided into Group A (GA, n=49, conventional perioperative nursing) and Group B (GB, n=50, FTS-based perioperative nursing). Operation time, length of stay (LOS), medical expense, incidence of complications, degree of comfort and nursing adherence were compared between the two groups. The recovery effects of the two groups were compared and analyzed by the I-QOL (Incontinence-Quality of Life) and the ICIQ-SF (Incontinence Questionnaire-Short Form). Results: Compared with GA, GB had shorter LOS, lower medical expense, higher degree of comfort in terms of perioperative environment, social culture, psychology and physiology, higher total nursing adherence rate (96.00% vs 71.43%) and I-QOL score, lower ICIQ-SF score and incidence of complications (10.00 vs 34.69) (P<0.05). Conclusion: Applied in perioperative nursing of female patients with stress incontinence after TVT, FTS can shorten the LOS, reduce medical expense and incidence of complications; as well as improve the nursing adherence, QOL and urinary incontinence symptoms.

Keywords: FTS, TVT, female stress incontinence, nursing effects

Introduction

Stress incontinence is defined as unconscious urine discharge from the external urethral orifice when the abdominal pressure exceeds the maximum urethral pressure and the bladder detrusor doesn't contract. It usually occurs when the abdominal pressure suddenly increases during lifting heavy objects, sneezing, laughing, and coughing [1, 2]. Its development is related to urethral insufficiency caused by weakness of the urethral sphincter, changes of the anatomical structure of the vesicourethral orifice, and relaxation of pelvic floor muscle [3]. Due to the long-term leakage of urine, female patients with stress incontinence are prone to not only urinary tract infections, skin infections, eczema and other diseases, but also depression, anxiety, feelings of inferiority and other adverse psychologies, which significantly affect their QOL and physical health [4, 5].

Generally speaking, for patients with mild to moderate stress incontinence, conservative treatment is usually adopted in the clinic, and for patients with severe stress incontinence or who do not find improvement with conservative treatments, an operation can be considered [6]. TVT-O (Tension Free Vaginal Tape Obturator) and TOT (Transobturator Tape) are two kinds of tension-free vaginal tapes frequently applied in the clinic, currently [7, 8]. There are also minimally invasive operations with similar efficacy but higher safety, developed in foreign countries, namely the STMS (single-incision tension-free vaginal suspension system) [9]. The concept of FTS (fast-track surgery) nursing was first put forward in 2001 and now has been widely used and recognized in clinical practice [10]. However, to speed up the combined application of FTS and specific operations, unified processes and standards in clinical practice are not available [11].

This study innovatively applied FTS in the perioperative nursing management of VTV at the mid uterus, in order to reduce the adverse factors, standardize the measures of perioperative nursing and improve patients' satisfaction.

Materials and methods

Materials

The clinical materials of 99 female patients with stress incontinence in our hospital from March 2017 to June 2018 were retrospectively collected. All patients were treated by TVT and divided into GA (n=49, conventional perioperative nursing) and GB (n=50, FTS-based perioperative nursing). (1) Inclusion criteria: patients aged between 40 and 55 and diagnosed with stress incontinence according to the diagnosis criteria established by the ISC [12] were included and provided informed consent. The study was approved by the Medical Ethics Committee. (2) Exclusion criteria: patients who were unwilling to participate in the study or who had moderate to severe cognitive dysfunction, severe heart, liver and kidney diseases, pelvic prolapse, urinary tract infection or bladder detrusor instability or who had no bladder detrusor contraction were excluded.

Methods

Conventional perioperative nursing for GA: in addition to strengthened health education upon admission, patients received preoperative guidance. All questions put forward by patients or their families were patiently and carefully answered, and the nursing was performed in strict accordance with the routines of TVT.

FTS-based perioperative nursing for GB: Preoperative nursing: being admitted to the hospital, patients received health education and were also instructed to carry out pelvic floor muscle exercise, strict control of basic diseases, and eat healthfully and reasonably, so as to control the weight within a reasonable range. At 1 day before the operation, the medical staff carefully introduced the FTS nursing measures to the patients and their families, and gave them knowledge related to stress incontinence and TVT. According to the preoperative psychological characteristics and state of the patients, the targeted psychological intervention and counseling were performed to reduce their psychological burden to the greatest extent so that they would be cooperative during the operation and healing time; based on the requirements of TVT, the patients were prohibited from water and food before the operation. Preparations were made in terms of the intestine and skin, and the practice of operation position was enhanced.

Intraoperative care: during the operation, attention was paid to strengthen the skin care of the perineum. Patients were placed in the lithotomy position with the whole body completely bent and the lower extremities outwardly expanding. Heat preservation was emphasized to maintain the patients' body temperature at about 37°C.

Postoperative nursing: (1) Closely monitor the changes in patients' conditions: after the operation, the pillow was removed to allow the patients lie down flatly. The ECG monitor was turned on to closely monitor the changes in patients' vital signs; patients were also subject to close monitoring of consciousness changes, vaginal bleeding, status of the surgical incision and the skin around the vagina. The analgesia pump dose was adjusted according to the postoperative pain intensity. If necessary, tramadol, lornoxicam and other drugs were used in strict accordance with the doctor's advice to reduce the operation stress, improve the degree of comfort and effectively promote postoperative recovery. The patients were instructed to exercise their bladder functions as early as possible after the operation. During the catheter indwelling period, the volume and property of urine, and the fixation of catheter were carefully observed. The catheter was cared for every day and removed1d after the operation if the patient's condition allows. (2) Control the amount of liquid input: the amount of liquid infusion was controlled between 1.0-1.5 l/d. (3) Patients were instructed to take activities as soon as possible after the operation: patients were guided to take activities as early as possible as long as their conditions permit. These activities included exercise of major joints and extremity massage at 2 h after the operation, assisted position changes and turnover, or sitting upright at 6 h after the operation, sitting and standing at 1 d after the operation or walking in the corridor or mild autonomic activities

as the case maybe. (4) Patients were guided to eat as soon as possible after operation: at 2 h after patients woke up from anesthesia, they were given 50 ml warm boiled water. In case of no gastrointestinal discomfort symptoms such as vomiting and nausea, they were allowed to orally taken in 200 ml of 10% glucose at 4 h after operation. Liquid diet was permitted at 6 h after operation provided that their conditions stabilized. Transition from semi-liquid diets to solid food diet was based on the actual situation of the patients 1 d after the operation. The intake amount was gradually increased as long as patients could normally take in food. Having many small and frequent meals was the principle. Drinking a lot was also suggested to increase the amount of urine and reduce the incidence of postoperative urinary tract infection to the greatest extent.

Observation indices

(1) Surgical indicators: The two groups were compared for operation time, LOS and medical expense.

(2) Degree of comfort: The simplified comfort scale was used to evaluate both groups' degree of comfort in the peroperative period from four dimensions of: environment, social culture, psychology and physiology. The score is positively correlated with the degree of comfort [13, 14].

(3) Nursing adherence: The nursing adherence of both groups during the peroperative period was evaluated. The results were complete adherence if patients cooperate with all nursing operations in strict accordance with the doctor's advices, or partial adherence if their cooperation is limited, or non-adherence if they don't cooperate [15]. The total adherence rate = Complete adherence rate + partial adherence rate.

(4) ICIQ-SF: ICIQ-SF was used to evaluate both groups upon admission and at 1 month after intervention. The form mainly covers the severity of urinary incontinence and the impact on patients. The content includes times, volume and duration of urine leakage, and its impact on patients' daily life. The total score is positively correlated to the severity of incontinence [16].

(5) I-QOL: I-QOL was used to evaluate the QOL of both groups upon admission and at 1 month after intervention. Consisting of 22 items, the scale covers social embarrassment, psychological impact and restrictions on behavior. The Likert 5-point system was employed. The results were converted according to the centesimal system, and positively correlated to the QOL [17, 18].

(6) Complications: dysuresia, inguinal pain, new urgent urinary incontinence and urinary tract infection.

Statistical analysis

Statistical analysis was performed with SPSS 22.0. In case of numerical data expressed as Mean ± Standard Deviation, comparison studies were carried out through *t* test for data which were normally distributed, and Mann-Whitney U test for data which were not normally distributed. In case of nominal data expressed as [n (%)], comparison studies were carried out through chi-squared test for intergroup comparison. For all statistical comparisons, significance was defined as $P<0.05$.

Results

Intergroup comparison of general materials

For patients in GA, the age range was 40 to 55, an average of (48.63±5.63) years, the course of disease was 2 to 22 months, an average of (15.86±2.28) months, the gravidity was 1 to 6 times, an average of (4.25±0.22) times, and the parity was 1 to 4 times, an average of (2.25±0.28) times. For patients in GB, the data accordingly were 41-54, (48.22±5.72) years, 3 to 20 months, (15.82±2.22) months, 1 to 5 times, (4.22±0.21) times, 1-3 times, and (2.22±0.15) times. In terms of degree of education, it was classified into elementary school, junior middle school, polytechnic school or senior high school, college and university, the distribution was 15 (30.61%), 10 (20.41%), 19 (38.78%) and 5 (10.20%) respectively in GA; 16 (32.00%), 11 (22.00%), 17 (34.00%) and 6 (12.00%) respectively in GB. Patients with respiratory diseases, angiocardiopathy or other diseases were 18 (36.73%), 19 (38.76%) and 8 (16.33%) respectively in GA; 16 (32.00%), 17 (34.00%) and 10 (20.00%) respectively in GB. The two groups were not statistically different

Table 1. Intergroup comparison of general materials [n (%)]/($\bar{x}$ ± s)

Materials	GA (n=49)	GB (n=50)	t/X^2	*P*
Age (y)	48.63±5.63	48.22±5.72	0.359	0.720
Course of disease (month)	15.86±2.28	15.82±2.22	0.088	0.929
Gravidity (time)	4.25±0.22	4.22±0.21	0.694	0.489
Parity (time)	2.25±0.28	2.15±0.15	0.666	0.507
Educational background (n)				
Elementary school	15 (30.61)	16 (32.00)	0.012	0.885
Junior middle school	10 (20.41)	11 (22.00)		
Polytechnic school or senior high school	19 (38.78)	17 (34.00)		
College and university	5 (10.20)	6 (12.00)		
Complications (n)				
Respiratory diseases	18 (36.73)	16 (32.00)	0.258	0.962
Angiocardiopathy	19 (38.76)	17 (34.00)		
Other diseases	8 (16.33)	10 (20.00)		

Table 2. Intergroup comparison of surgical indicators ($\bar{x}$ ± s)

n	Operation time (min)	LOS (d)	Medical expense (RMB 10,000)
GA (n=49)	98.52±2.36	9.86±0.25	1.25±0.12
GB (n=50)	98.19±2.42	5.22±0.18*	0.92±0.09*
t	0.687	106.139	15.499
P	0.494	0.000	0.000

Note: *P<0.05 vs GA.

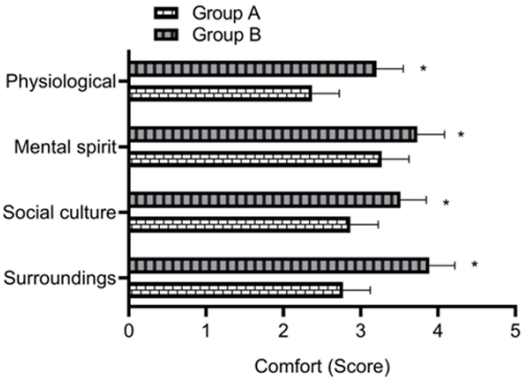

Figure 1. Intergroup comparison of degree of comfort. GB yielded higher scores of perioperative environment, social culture, psychology and physiology than GA (P<0.05). *P<0.05 vs GA.

in general materials such as age, course of disease, gravidity, parity, educational background and complications (P>0.05) (**Table 1**).

Intergroup comparison of surgical indicators

There was no significant difference in operation time between the two groups (P>0.05). The two groups were significantly different in LOS and medical expenses, which were (9.86± 0.25) d and RMB (12,500±1,200) in GA; and (5.22±0.18) d and RMB (9,200±900) in GB (P<0.05) (**Table 2**).

Intergroup comparison of degree of comfort

The scores for perioperative environment, social culture, psychology and physiology, the four elements used to judge the degree of comfort, were (2.52±0.12), (2.61±0.09), (3.02±0.08) and (2.12±0.11) respectively in GA; (3.65±0.25), (3.28±0.18), (3.48±0.16) and (2.96±0.19) respectively in GB (P<0.05) (**Figure 1**).

Intergroup comparison of nursing adherence

Patients who completely, partially or never complied with the nursing were 25, 10 and 14 respectively in GA (71.43%); and 36, 12 and 2 respectively in GB (96.00%) (P<0.05) (**Table 3**).

Intergroup comparison of ICIQ-SF score

No significant difference was found between the two groups in terms of ICIQ-SF upon admission (P>0.05). Nursing resulted in a sharp reduction of ICIQ-SF in both groups (P<0.05), and the ICIQ-SF score was far lower in GB (P<0.05) (**Table 4**).

Intergroup comparison of I-QOL score

The two groups were not statistically different in the I-QOL score upon admission (P>0.05),

Table 3. Intergroup comparison of nursing adherence [n (%)]

Group	Complete compliance	Partial compliance	Disobey	Total compliance
GA (n=49)	25 (51.02)	10 (20.41)	14 (28.57)	35 (71.43)
GB (n=50)	36 (72.00)	12 (24.00)	2 (4.00)	48 (96.00)*
X^2				11.027
P				0.000

Note: *P<0.05 vs GA.

Table 4. Intergroup comparison of ICIQ-SF score ($\bar{x} \pm s$, score)

Group	Upon admission	After intervention
GA (n=49)	27.02±1.25	23.12±0.88#
GB (n=50)	27.08±1.22	16.28±0.29#,*
t	0.242	52.152
P	0.809	0.000

Note: #P<0.05 vs conditions upon admission; *P<0.05 vs GA.

Table 5. Intergroup comparison of I-QOL score ($\bar{x} \pm s$, score)

Group	Upon admission	After intervention
GA (n=49)	59.86±2.58	68.12±3.28#
GB (n=50)	59.92±2.49	85.12±2.36#,*
t	0.118	29.647
P	0.907	0.000

Note: #P<0.05 vs conditions upon admission; *P<0.05 vs GA.

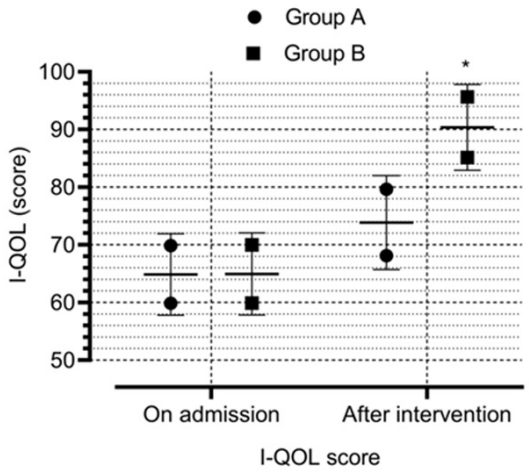

Figure 2. Intergroup comparison of I-QOL score. Upon admission, the two groups were not significantly different in the I-QOL score (P>0.05); after intervention, the I-QOL score of the GB was higher than that of the GA (P<0.05). *P<0.05 vs GA.

but demonstrated a significant rise after nursing (P<0.05). As a result, the I-QOL score was far higher in GB (P<0.05) (**Table 5** and **Figure 2**).

Intergroup comparison of incidence of complications

Patients with dysuresia, inguinal pain, new urgent urinary incontinence and urinary tract infection were 3, 5, 3 and 6 respectively in GA (34.69%); and 2, 1, 1 and 1 respectively in GB (10.00%) (P<0.05) (**Table 6**).

Discussion

Studies have shown that in the world, 25%-45% of females have symptoms of urinary incontinence in varying degrees. Stress incontinence is often reported in middle-aged and elderly women [19]. The risk factors of female stress incontinence include obesity, parity, vaginal delivery, pregnancy and age. As the Chinese population is aging, stress incontinence has gradually developed into a global public health problem [20, 21].

There are many ways to treat stress incontinence. At present, the first-line treatments are either conservative or surgical. Common conservative treatment methods consist of intervention in lifestyle, bladder training, vaginal devices, physical treatment, drug treatment and injection treatments of the pelvic floor [22, 23]. The common operations include vaginal tape by suturing, SPARC, retropubic urethropexy, anterior wall colporrhaphy and TVT. TVT further falls into TVT-S, TVT-O and transpubic TVT [24]. In this study, all patients were treated with TVT. Although the ideal therapeutic effect can be achieved, it is also necessary to provide thoughtful and comprehensive perioperative nursing in order to promote the rapid recovery after operation.

Nursing intervention refers to the implementation of targeted nursing before diseases develop, so as to observe and evaluate them in advance, provide psychological guidance for patients, actively prevent and treat postoperative complications, and minimize the risk of disease [25]. In the past, conventional perioperative nursing was usually provided based on nurses' professional knowledge and patients'

Table 6. Intergroup comparison of the incidence of complications [n (%)]

Group	Dysuresia	Inguinal pain	New urgent urinary incontinence	Urinary tract infection	Total incidence
GA (n=49)	3 (6.12)	5 (10.20)	3 (6.12)	6 (12.24)	17 (34.69)
GB (n=50)	2 (4.00)	1 (2.00)	1 (2.00)	1 (2.00)	5 (10.00)*
X^2					8.731
P					0.003

Note: *P<0.05 vs GA.

medical history, in order to relieve patients from pain after TVT [26]. Although the conventional perioperative nursing mode is effective to a certain degree, with the continuous renewal of nursing concepts, surgical perioperative nursing not only focuses on the formulation and implementation of the perioperative nursing program, but also emphasizes improving the QOL and facilitating recovery after the operation. FTS (fast-track surgery) nursing is a new type of surgical nursing concept gradually gaining popularity and it is greatly upheld in European and American countries in recent years. It aims to reduce the physical and mental stress trauma tolerated by patients and achieve rapid postoperative recovery by providing patients with optimized evidence-based nursing measures [27, 28]. In this study, compared with GA, GB had shorter LOS, lower medical expenses, higher scores of degree of comfort, total nursing adherence rate and I-QOL, as well as lower I-QOL score and incidence of complications; suggesting that the application of FTS in the perioperative nursing of female patients with stress incontinence after TVT is beneficial to shorten the LOS, reduce the medical expense and the incidence of complications, improve the nursing adherence, QOL, and symptoms of urinary incontinence. The reason is that FTS puts patients at the center of importance from the aspects of health education upon admission, perioperative nursing, intraoperative and postoperative management, etc. The nursing concepts of FTS runs through the whole process of surgical treatment, and other means such as reducing surgical complications and surgical stress response, as well as early recovery exercises are adopted to accelerate the recovery and discharge processes. FTS pays attention to preoperative psychological care by implementing targeted psychological intervention and counseling based on the preoperative psychological characteristics and state of the patients, in order to reduce their psychological burden to the greatest extent and improve the nursing adherence. Perioperative hypothermia is a kind of secondary pathological change with high incidence. It will accelerate body metabolism, and then result in shivering, etc. High energy consumption will inhibit or cause damage to cardiovascular regulation functions. Therefore, FTS emphasizes strengthening the thermal insulation during the operation, and maintaining the temperature of the patient at about 37°C, which is conducive to reducing the incidence of hypothermia and shivering and ensuring a smooth operation. Early food intake, out-of-bed activity, intubation, and strict control of fluid intake are also the key points in FTS to promote postoperative recovery. Early food intake after operation is beneficial to reduce the gastrointestinal discomfort, especially for patients with gastrointestinal ulcers, in whom the effects improve conditions. In addition, early food intake can also reduce the trauma brought by gastrointestinal stress. Long-term bed rest after operation will weaken gastrointestinal activity and increase the incidence of venous thrombosis. Therefore, early out-of-bed activity after the operation can promote gastrointestinal peristalsis and blood circulation, and then the postoperative recovery. Early intubation after operation can reduce the discomfort of patients and the incidence of urinary tract infection. FTS also emphasizes postoperative analgesia and fluid intake restriction. Scientific and reasonable postoperative analgesia measures can reduce the pain intensity and improve the degree of comfort, while fluid intake restriction can reduce the adverse reactions and medical expense, promote postoperative recovery, shorten LOS, and improve patients' QOL.

In conclusion, as a part of the postoperative nursing for female patients with stress incontinence after TVT, the effects of FTS include reduced LOS, medical expenses and incidence

of complications, with enhanced nursing adherence and QOL, and improved symptoms of urinary incontinence.

Though this study has made some achievements, it is limited in the number of samples. Future studies are expected to include more samples, last for a longer period of time, and cover more aspects.

Acknowledgements

This work was supported by 2019 Key Research and Development Program of Guang'an Science and Technology Bureau of Sichuan Province: Cognitive investigation on stress urinary incontinence in women aged 40-55 and research on accelerated rehabilitation nursing of tension-free midurethral suspension.

Disclosure of conflict of interest

None.

Address correspondence to: Ning Yang, Guang'an People's Hospital, Guang'an 638000, Sichuan, China. Tel: +86-13551967589; E-mail: yangnnn00@163.com; Jianhua Lan, Department of Urology, Guang'an People's Hospital, Guang'an 638000, Sichuan, China. Tel: +86-13696170586; E-mail: ljhdoctor@yeah.net

References

[1] Kohler A, Kirschner-Hermanns R, Staat M and Brehmer B. Female stress incontinence: aspects of pathogenesis and functional anatomy. Aktuelle Urol 2018; 49: 47-51.

[2] Fuselier A, Hanberry J, Margaret Lovin J and Gomelsky A. Obesity and stress urinary incontinence: impact on pathophysiology and treatment. Curr Urol Rep 2018; 19: 10.

[3] Kobashi KC, Albo ME, Dmochowski RR, Ginsberg DA, Goldman HB, Gomelsky A, Kraus SR, Sandhu JS, Shepler T, Treadwell JR, Vasavada S and Lemack GE. Surgical treatment of female stress urinary incontinence: AUA/SUFU guideline. J Urol 2017; 198: 875-883.

[4] Khullar V, Anding R, Robinson D, Castro-Diaz D, Dmochowski R and Cardozo L. Under what circumstances should stress incontinence surgery be performed at the same time as prolapse surgery? ICI-RS 2015. Neurourol Urodyn 2017; 36: 909-914.

[5] Aragón IM, Imbroda BH and Lara MF. Cell therapy clinical trials for stress urinary incontinence: current status and perspectives. Int J Med Sci 2018; 15: 195-204.

[6] Farrell SA. No. 127-the evaluation of stress incontinence prior to primary surgery. J Obstet Gynaecol Can 2018; 40: e45-e50.

[7] Clarke A. Do urodynamic findings influence the approach to mid-urethral sling surgery for stress urinary incontinence? Br J Nurs 2018; 27: 600-605.

[8] Hagovska M, Švihra J, Buková A, Dračková D and Švihrová V. Prevalence and risk of sport types to stress urinary incontinence in sportswomen: a cross-sectional study. Neurourol Urodyn 2018; 37: 1957-1964.

[9] Wilkins MF and Wu JM. Lifetime risk of surgery for stress urinary incontinence or pelvic organ prolapse. Minerva Ginecol 2017; 69: 171-177.

[10] Lim R, Liong ML and Yuen KH. Leaking in silence: women with stress urinary incontinence who do not have access to or refuse surgery. Int Urogynecol J 2018; 29: 457-458.

[11] Wein AJ. Re: stress urinary incontinence and endogenous sex steroids in postmenopausal women. J Urol 2018; 199: 1400-1404.

[12] Drain A, Khan A, Ohmann EL, Brucker BM, Smilen S, Rosenblum N and Nitti VW. Use of concomitant stress incontinence surgery at time of pelvic organ prolapse surgery since release of the 2011 notification on serious complications associated with transvaginal mesh. J Urol 2017; 197: 1092-1098.

[13] van der Ploeg JM, van der Steen A, Zwolsman S, van der Vaart CH and Roovers J. Prolapse surgery with or without incontinence procedure: a systematic review and meta-analysis. BJOG 2018; 125: 289-297.

[14] Ali I, Swift S and Digesu GA. Surgical management of pelvic organ prolapse and stress urinary incontinence: where are we now? Int Urogynecol J 2018; 29: 1-2.

[15] Averbeck MA, Woodhouse C, Comiter C, Bruschini H, Hanus T, Herschorn S and Goldman HB. Surgical treatment of post-prostatectomy stress urinary incontinence in adult men: report from the 6th international consultation on incontinence. Neurourol Urodyn 2019; 38: 398-406.

[16] Lasak AM, Jean-Michel M, Le PU, Durgam R and Harroche J. The role of pelvic floor muscle training in the conservative and surgical management of female stress urinary incontinence: does the strength of the pelvic floor muscles matter? PM R 2018; 10: 1198-1210.

[17] Wang PH. Mid-urethral sling in the management of women with stress urinary incontinence after pelvic organ prolapse treatment. Taiwan J Obstet Gynecol 2018; 57: 777-778.

[18] Zhu L. Surgical treatment of stress urinary incontinence in women in the mainland of Chi-

na: current status and outlook. Chin Med J (Engl) 2017; 130: 1387-1388.
[19] Zbinden M, Stritt K, Jichlinski P and Grilo N. Current surgical treatments for women with stress urinary incontinence. Rev Med Suisse 2019; 15: 2186-2189.
[20] Tincello DG, Armstrong N, Hilton P, Buckley B and Mayne C. Surgery for recurrent stress urinary incontinence: the views of surgeons and women. Int Urogynecol J 2018; 29: 45-54.
[21] Wein AJ. Re: twelve-month efficacy and safety data for the "stress incontinence control, efficacy and safety study": a phase III, multicenter, prospective, randomized, controlled study treating female stress urinary incontinence using the vesair intravesical balloon. J Urol 2018; 200: 950-951.
[22] Jokura Y, Yano K and Yamato M. Letter to the editor on "Cell therapy for stress urinary incontinence: present-day frontiers". J Tissue Eng Regen Med 2018; 12: 2233.
[23] Kasi AD, Pergialiotis V, Perrea DN, Khunda A and Doumouchtsis SK. Polyacrylamide hydrogel (Bulkamid®) for stress urinary incontinence in women: a systematic review of the literature. Int Urogynecol J 2016; 27: 367-375.
[24] Kowalik CG, Cohn JA, Gomelsky A and Dmochowski RR. Urinary incontinence in women: non pharmacologic approaches and newer pharmacotherapies. An update. Minerva Med 2017; 108: 255-267.
[25] Corso E, Hind D, Beever D, Fuller G, Wilson MJ, Wrench IJ and Chambers D. Enhanced recovery after elective caesarean: a rapid review of clinical protocols, and an umbrella review of systematic reviews. BMC Pregnancy Childbirth 2017; 17: 91.
[26] Miralpeix E, Nick AM, Meyer LA, Cata J, Lasala J, Mena GE, Gottumukkala V, Iniesta-Donate M, Salvo G and Ramirez PT. A call for new standard of care in perioperative gynecologic oncology practice: impact of enhanced recovery after surgery (ERAS) programs. Gynecol Oncol 2016; 141: 371-378.
[27] Haid B, Karl A, Koen M, Mottl W, Haid A and Oswald J. Enhanced recovery after surgery protocol for pediatric urological augmentation and diversion surgery using small bowel. J Urol 2018; 200: 1100-1106.
[28] Li Z, Wang Q, Li B, Bai B and Zhao Q. Influence of enhanced recovery after surgery programs on laparoscopy-assisted gastrectomy for gastric cancer: a systematic review and meta-analysis of randomized control trials. World J Surg Oncol 2017; 15: 207.