

Depolama semptomlarının transüretal prostat rezeksiyonu sonrasında erken postopratif ağrıya etkisi

*The effect of storage symptoms on early postoperative pain after transurethral resection of the prostate.
Do the storage symptoms persist after transurethral resection of the prostate?*

Osman Köse¹, Şükrü Kumsar¹, Tolga Ergöncü², Salih Budak¹, Hüseyin Aydemir¹, Öztuğ Adsan¹

¹Sakarya Üniversitesi, Eğitim Ve Araştırma Hastanesi, Üroloji Kliniği, Sakarya

²Sakarya Üniversitesi, Eğitim Ve Araştırma Hastanesi, Anestezi Ve Reanimasyon Kliniği, Sakarya

Özet

Amaç: Bu çalışmada, TUR-P sonrasında gelişen ağrı üzerine, depolama semptomlarının etkisi araştırıldı.

Gereç ve Yöntemler: Ekim 2012-Şubat 2013 tarihleri arasında TUR-P yapılmasına karar verilen hastalar IPSS'lerinde (International Prostate Symptom Score) 2, 4, ve 7. sorulara verdiği yanıtı göre 2 gruba ayrıldı. Grup 1'e 3 ve daha üzerini işaretleyen hastalar, grup 2'ye 3'ün aşağısını işaretleyen hastalar dahil edildi. Her iki gruba toplam 30 hasta alındı. Hastaların total IPSS ve depolama IPSS skorları ayrı ayrı kayıt edildi. Her iki gruba spinal analjezi etkisi ortadan kalktıktan sonra, Diklofenak Na 75 mg paranteral yapıldı. Analjezik yapıldıktan 4 saat sonra, her iki grupta kateter ilişkili rahatsızlık ve genel ağrı, VAS (Visual Analog Scale) skorlaması kullanılarak değerlendirildi.

Bulgular: Her iki grupta da çalışma dışı bırakılan hasta olmadı. Her iki hasta grubunun yaş, PSA, prostat hacmi, maksimum idrar akım hızı, rezidüel idrar hacmi, operasyon süresi ve rezeke edilen prostat doku hacmi arasında istatistiksel fark saptanmadı. Depolama semptomları ön planda olan hastaların kateter ilişkili

Abstract

Objective: In this study we investigated the effects of preoperative storage symptoms on post Transurethral Resection of the Prostate (TUR-P) pain.

Material and Methods: The patients undergoing TUR- P between October 2012 and February 2013 were grouped into two based on the severity of the symptoms they described in the 2nd, 4th and 7th questions of International Prostate Symptom Score (IPSS). Group 1 patients were those who scored 3 and more and Group 2 patients were those who scored less than 3. Thirty patients were allocated to each of the groups. The total IPSS and storage IPSS symptoms of the patients were recorded separately. At postoperative follow up when the effect of spinal anesthesia wore off each patient received parenteral injection of 75 mg of Diclofenac sodium. Four hours after the analgesic administration, catheter related discomfort (suprapubic pain, urgency, etc) and general pain were evaluated with the use of Visual Analog Scale (VAS) scoring.

Results: There were no excluded patients in both groups. There were no statistically sig-

Geliş tarihi (Submitted): 06.03.2014
Kabul tarihi (Accepted): 10.02.2015

Yazışma / Correspondence

Osman Köse
Beşköprü M. Beyaz Kent Sitesi D4 Girne
C. 54100 Sakarya
Gsm: 0532 251 71 62
E-mail: koseonk@yahoo.com.tr

mesane rahatsızlık VAS skorlarının ve total VAS skorlarının diğer gruptan yüksek olduğu görüldü.

Sonuç: TUR-P sonrasında postoperatif dönemde analjezik tedavi yapılırken, depolama semptomlarının yoğunluğunun gözönünde bulundurulması faydalı olabilir.

Anahtar Kelimeler: TURP, analjezi, depolama semptomları

Introduction

While Transurethral Resection of the Prostate (TUR-P) remains the gold standard in the surgical treatment of benign prostatic hyperplasia (BPH) other minimally invasive options are increasingly taking their place in the routine urologic practice. TUR-P or other surgeries targeting lower urinary tract are the most commonly performed operations by urologists. These operations are either performed under general anesthesia or spinal anesthesia with or without sedation which generally provides adequate analgesia up to 4-6 hours in the postoperative period. Patients frequently describe moderate pain after the effects of regional anesthesia subside (1).

The final goals of an efficient postoperative pain management are to improve patient comfort and satisfaction, to accelerate healing and functional recovery, to reduce morbidity and to reduce hospital stay. The perception of pain by the patient is a result of complex interaction between physical, psychologic, cultural and mental factors. One of the current targets in the new studies is to reduce side effect profiles while providing efficient analgesia. The proper evaluation of the pain before and after administration of the treatment provides better control of analgesia and reduces mortality and morbidity (2). In this study we investigated the effects of the severity of preoperative storage symptoms on early postoperative analgesia.

Material and Methods

The approval of the local ethics committee and the informed consent of each patient were obtained. Patients undergoing TUR-P between October 2012 and February 2013, aged between 52 and 74 and the risk of anesthesia being less than ASA 2, were grouped into two based on their symptom severity evaluated in the 2nd, 4th and 7th questions of the International Prostate Symptom Score (IPSS). Patients in Group 1 were those who scored 3 or

nificant differences between groups in terms of age, PSA, prostate volume, maximum flow rate, residual urine volume, duration of the operation and volume of resected prostate. The catheter related bother and total VAS scores of the patients in the group of predominant storage symptoms were found to be higher compared to the other group.

Conclusion: Adapting the administration of analgesic therapy in the postoperative period after TUR-P according to the dominance of storage symptoms may provide a better analgesia.

Key Words: TUR-P, analgesia, storage symptoms

more and those in Group 2 scored less than 3. The basic biochemical analysis were performed, urine samples for culture were taken and uroflowmetry was performed after IPSS evaluation. The ultrasonographic evaluation of the urinary system was performed and postvoiding residual urine and prostate volumes are calculated.

Patients <50 years of age, with diclofenac allergy, associated comorbidities, bladder stones, bladder tumours, urethral and meatal stenosis, who are unable to comprehend Visual Analog Scale (VAS) scoring, residual urine volume >200 ml and those who have neurogenic bladder dysfunction were excluded as well as those who report use of analgesic treatment and treatment with monoamine oxidase inhibitors. There were 30 patients in each of the groups. The total IPSS and storage IPSS scores of the patients were recorded. The patients were informed preoperatively about the 10 cm VAS that will be used to measure postoperative pain and catheter related bladder discomfort (CRBD). The operation was performed using a standard continous flow 26 F resectoscope under spinoepidural anesthesia that is induced by injecting 3 ml of 0.5% bupivacain to the L2-3 interval. Durations of the operations and the volumes of the resected prostate were recorded. A 22 F 3- way Foley catheter was inserted to the bladder postoperatively and a continous bladder irrigation started. After the effects of spinal anesthesia was proved to be subsided by the cold test postoperatively, 75 mg of Diclofenac sodium was injected parenterally. The catheter related discomfort and general pain was evaluated in both groups 4 hours after the analgesia was administered.

To those patients with persistant pain additional analgesia was performed via the epidural catheter or an anticholinergic drug was administered. Patients were followed up for any adverse events. Complete blood count

Table 1. Demographic and operative characteristics of patients

	Group 1	Group 2	p
Age	62.80±8.41	64.53±7.5	0.28
PSA	2.54±0.8.7	2.45±0.95	0.72
Qmax	11.13±2.82	10.7±1.52	0.33
Prostate Volume	54.7±4.7	51.3±6.1	0.65
Residuel urine volume	89.30±24.21	85.87±22.820	0.53
Volume of resected prostate	30.97±4.32	31.36±4.27	0.47
Duration of operation (min)	43.3±9.7	45.1±10.5	0.25

PSA: Prostate Spesific Antigen

Qmax: Maximum urine flow rate

Table 2. IPSS and VAS Scores of patients

	Group 1	Group 2	p
Total IPSS	19.93±2.16	19.9±3.49	0.63
Storage IPSS	11.24±2.3	4.39±2.1	0.013
VAS Score	2.47±1.37	1.17±0.96	0.000
CRBD VAS Score	2.90±0.96	0.93±1.46	0.000

IPSS: International Prostate Symptom Score

VAS: Visual Analog Scale

CRBD: Catheter Related Bladder Discomfort

and biochemical analysis were repeated at postoperative day 1. The length of hospital stay postoperatively and the length of urethral catheterization were recorded. Between group differences in terms of age, prostate volume, resected prostate volume, durations of the operations and VAS scores were analysed with Sampled t test. A p value of <0.05 was accepted as statistically significant.

Results

There were no excluded patients in both groups. There was no statistically significant difference between the two groups in terms of age, PSA, prostate volume, maximum flow rate, residual urine volume and resected prostate volume. No statistically significant difference was observed between groups with regards to duration of the operation and resected tissue volume (Table 1). All patients were externalized at postoperative day 2.

The total and storage IPSS scores in Group 1 and Group 2 were 19.93±2.16 vs 19.9±3.49 (p:0.63) and 11.24±2.3 vs 4.39±2.1 (p:0.013), respectively. The VAS score of catheter related bother was 2.90±0.96 in Group 1, which consisted of patients with predominant storage symptoms, and 0.93±1.46 in Group 2 (p<0.001). Total VAS scores were 2.47±1.37 and 1.17±0.96, respectively in Group 1 and Group 2 (p<0.001). The CRBD and total VAS scores

of patients in the predominant storage symptoms group was higher compared to other group (Table 2).

There was no statistically significant difference in terms of operative parameters between groups.

Discussion

Approximately 70% of surgical patients complain of various degrees of pain in the postoperative period (3). Pain is a complex symptom that has psychologic, emotional, affective, cognitive and behavioral components (4). The resolution of postoperative pain adds to the success of the surgery and improves clinical outcomes (5).

Patients report moderate pain after TUR-P. The insufficient postoperative pain treatment after surgery may lead to development of chronic pain that is also effected by psychologic, physiologic, social and environmental factors (6,7).

Inadequate pain management might increase morbidity and mortality especially in elderly and in patients with preoperative risk factors like cardio pulmonary disease (8,9).

Transurethral Resection of the Prostate is one of the most frequently performed operations by urologists. As it occurs after every surgical intervention pain is triggered by tissue injury at the site of surgery, urethral cath-

ter, postoperative complications and a combination of those which is an expected and inevitable symptom. A need to urethral catheter continues for 2 days postoperatively. The pain associated with TUR-P is generally due to urethral catheter and described by the patient as over active bladder symptoms. Bladder catheterization causes bladder irritation which then leads to involuntary bladder contractions (10). The involuntary contraction of the detrusor in the presence of urethral catheter is mediated by muscarinic receptors and the trigger is the stimulation of the muscarinic receptor (11).

The presence of urethral catheter may cause spastic pain that lasts for minutes or longer sometimes by reflexively increasing smooth muscle tonus. There are highly dense nociceptors in the urogenital system. Even small irritations can cause high afferent inputs to the spinal cord and this can induce spinal sensitization together with painful spastic components (12).

After the effects of anesthesia subsided, patients to whom urethral catheterization is performed intraoperatively frequently complain of catheter related bladder discomfort. Agerwal et al analysed the incidence of catheter related bladder discomfort and its severity in patients with urethral catheter (13).

Catheter related bladder discomfort, is defined by the patients with a urethral catheter as a feeling of urgency or suprapubic inconvenience after the effects of spinal anesthesia subsided in the postoperative period (14). These symptoms mimic the symptoms of overactive bladder (pollakiuria, urgency, urge incontinence) and may be attributed to the involuntary contraction of the detrusor which is mediated by muscarinic receptors (14).

Generally CRBD increases postoperative pain (15). CRBD is a component of postoperative pain and its appropriate treatment can reduce VAS score and need to analgesics. The efficient management of catheter related discomfort can reduce the rate of attempts of 'self removal' of the catheter and postoperative agitation both of which are hard to treat (16). Also this symptoms complex may lead to a reduced quality of life (17).

Catheter related bladder pain generally adds up to postoperative pain (15). The proper evaluation of the pain before and after its management improves pain management and decreases morbidity and mortality (2). Ad-

ditionally it was observed that the so called 'preemptive analgesia' that is administered before and during the operation provided a better control of pain compared to analgesic treatment administered after the operation. For this reason we investigated the effects of storage symptoms on better control of pain in patients undergoing TUR-P. Lower urinary tract symptoms due to bladder outlet obstruction are categorized as storage, voiding and postmicturition symptoms. Storage symptoms are comprised of frequency, nocturia and urgency and they are associated with BPH related bladder dysfunction.

Storage symptoms are also indicative of overactive bladder and its severity can be questioned with the 2nd, 4th and 7th questions of IPSS. In patients with BPH storage symptoms are the most common among other categories of lower urinary tract symptoms and they are also more bothersome. The ultrastructural changes in the bladder wall that occur secondary to bladder outlet obstruction such as smooth muscle hypertrophy and connective tissue infiltration may be associated with detrusor overactivity and alterations central nervous system pathways might be contributing factors. Bladder outlet obstruction is associated with bladder dysfunction that includes detrusor overactivity, detrusor underactivity and bladder hypersensitivity.

There are some limitations of our study. First, the patients included in the study were those who had undergone an operative procedure. Secondly the study has not control group. Thirdly the pain evaluation is only verbal.

Conclusion

In our study the group of patients with predominant storage symptoms, that is Group 1, were found to have significantly increased CRBD VAS and total VAS scores compared to other group. Storage symptoms were found to increase general pain and catheter related pain that occur after TUR-P. Thus considering these while planning postoperative analgesic treatment for patients with predominant storage symptoms may help improving postoperative outcomes for the patients. Including an anticholinergic drug to the analgesic treatment in this patient population can also be considered.

Conflict of Interest

No conflict of interest was declared by the authors

References

1. Ghandi R, Jage J, Fichtner J, Hohenfeliner R. The use of questionnaire for improvement of postoperative analgesia after transurethral resection of the prostate. *Acute Pain* 2003;5:17-24.
2. Gordon DB, Dahl JL, Miaskowski C, et al. American pain society recommendations for improving the quality of acute and cancer pain management: American Pain Society Quality of Care Task Force *Arch Intern Med* 2005;25:1574-80.
3. Apfelbaum JL, Chen C, Mehta SS, Gan TJ. Postoperative pain experience: results from a national survey suggest postoperative pain continues to be undermanaged. *Anesth Analg* 2003;97:534-40.
4. Turk DC, Sist TC, Okifuji A, et al. Adaptation to metastatic cancer pain, regional/local cancer pain and non-cancer pain: role of psychological and behavioral factors. *Pain* 1998;74:247-56.
5. Wu CL, Hurley RW, Anderson GF et al. Effect of postoperative epidural analgesia on morbidity and mortality following surgery in Medicare patients. *Reg Anesth Pain Med* 2004;29:525-533.
6. Brennan TJ, Kehlet H. Preventive analgesia to reduce wound hyperalgesia and persistent postsurgical pain: Not an easy path. *Anesthesiology* 2005; 103:681-3.
7. Macrae WA Chronic post-surgical pain: 10 years on *Br J Anaesth* 2008;101:77-86.
8. Brodner G, van Aken H. Does the choice of anaesthetic technique influence outcome? *Eur J Anaesth* 1998;15:740-7.
9. Beattie WS, Buckley DN, Forrest JB. Epidural morphine reduces the risk of postoperative myocardial ischemia in patients with cardiac riskfactors. *Can J Anaesth* 1993;40:532-41.
10. Andersson KE. Advances in the pharmacological control of the bladder. *Exp Physiol* 1999;14:195-213.
11. Andersson KE. Advances in the pharmacological control of the bladder. *Exp Physiol* 1999;84:195-213.
12. Woolf CJ, Chong MS. Preemptive analgesia-treating postoperative pain by preventing the establishment of central sensitization. *Anesth Analg* 1993;77:362-79.
13. Agarwal A, Dhiraaj S, Singhal V, Kapoor R, Tandon M. Comparison of efficacy of oxybutynin and tolterodine for prevention of catheter bladder discomfort: a prospective, randomized, placebo controlled double-blind study. *Br J Anaesth* 2006; 96: 377-80.
14. Agarwal A, Raza M, Singhal V, et al. Evaluation of efficacy of tolterodine for prevention of catheter related bladder discomfort: a prospective, randomized, placebo-controlled double blind study. *Anesth Analg* 2005;101:1065-7.
15. McMahon SB, Dmitrieva N, Koltzenburg M. Visceral pain. *Br J Anaesth* 1995;75:132-44.
16. Battaglia J. Pharmacological management of acute agitation. *Drugs* 2005;65: 1207-22.
17. Tauzin-Fin P, Sesay M, Svartz L, Krol-Houdek MC, Maurice P. Sublingual oxybutynin reduces postoperative pain related to indwelling bladder catheter after radical retropubic prostatectomy. *Br J Anaesth* 2007; 99: 572-5.