The Impact of Benign Prostatic Hyperplasia Surgical Treatment with Turp Method on the Quality of Life

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1. INTRODUCTION

Transurethral resection of the prostate (TURP), transurethral incision of the prostate (TUIP) and open prostatectomy (OP) are standard, conventional surgical methods of BPH treatment.

Transurethral vaporization of the prostate (TUVP), as an electrosurgical modification of TURP technique, is also a part of BPH surgical treatment. TURP is a gold method of treatment for older men with LUTS, which are caused by BPH and BPO (1, 2, 3, 4, 5, 6). However, rules have been partly changed in the past 20 years by introducing medicament treatment, and also thanks to development of minimum invasive treatment methods (7, 8, 9, 10, 11, 12, 13, 14). TURP is indicated in the prostate volume of 30–80 ml, and in 50–60% of cases is applied after the failure of medicament treatment, although no consensus has been reached on this topic yet (15, 16).

The TURP method has been technically improved in the last decade by introducing video TURP, instruments for continuous flow, various designs of operative electrodes, as well as modification of high frequency generators.

Conventional electrosection underlies the application of monopolar high frequency electricity, with maximum cutting power of 200 W. The depth of coagulation when cutting depends on the electricity voltage, so that degree and coagulation depth can be individually adapted. Better coagulation effect when cutting has been developed thanks to modification of high frequency generators with an aim of reducing the loss of blood.

The most significant, newer improvement of TURP is the application of bipolar TURP which uses saline as irrigational fluid. High frequency energy up to 160 W goes through irrigational solution (saline) 0.9% NaCl, which results in disintegration of the tissue through molecular dissociation. Such way of tissue disintegration is done at lower resection temperatures unlike conventional monopolar system. In this way, thermal damage of surrounding tissue is reduced. By using physiological solution for irrigation, the risk of having TUR syndrome is almost prevented (17).

Although TUR syndrome is not very common today, it is one of the most dangerous intraoperative...
complications. In terms of seriousness and danger, it comes right after bleeding (hemorrhaging) as an intraoperative complication.

It is important to point out that TUR syndrome can be successfully avoided by using bipolar TURP.

The successfullness of TURP treatment means reduced LUTS and improvement the quality of life, as a consequence of the urinary symptom, reduction of postvoid residual urine (PVR) and improvement of maximum urine flow (Qmax).

2. OBJECTIVE

The objective of this study is to assess the impact of BPH surgical treatment with TURP method on the quality of life, as a consequence of urinary symptoms.

3. MATERIAL AND METHODS

The material in this research is based on 80 patients who, due to BPH, were operated with TURP method at the Clinic of Urology, Clinical Center University of Banjaluka.

The IPSS has been used in the research, i.e. question № 8 (Index Quality of Life - IQL) which relates to the quality of life, as a consequence of urinary symptoms. The question related to the quality of life as a consequence of urinary symptoms was: “If you had to spend the rest of your life with the voiding situation as it is now, how would you describe it? The answers are numbered in the following way: 0 - fascinated, 1 - satisfied, 2 - mainly satisfied, 3 - semi-satisfied (equally satisfied and dissatisfied), 4 - mainly dissatisfied, 5 - dissatisfied and 6 - desperate. The criteria for the patients to be selected for this type of BPH surgical treatment were:

- good general status of the patient
- age under 80
- the weight of benign prostatic gland hyperplasia tissue 30–80 grams,
- postvoid residual urine higher than 150 ml,
- IPSS values > 19 points,
- IQL values > 3 points.

The method of work was as follows:

- Preoperative determination of IQL values (twice), by individual examination of all examinees
- BPH was treated with TURP method
- After the operative intervention, in time intervals of 4, 8 and 12 weeks, all patients were determined the IQL.

The average age of patients was 69.37. The youngest patient was 58, and the oldest was 80 years old, therefore the variation interval was 22 years.

It can be noticed that all the patients were above the age of 58 which implies that BPH develops in older patients. Preoperatively, patients characterized their quality of life, as a consequence of urinary symptoms, by the answer that could be expressed in seven categories.

Taking into account patients’ answers, the IQL is presented in the following table.

| Age    | Number of patients and % |
|--------|--------------------------|
| 50-59  | 1 25%                    |
| 60-69  | 19 47.5%                 |
| 70-79  | 19 47.5%                 |
| 80-89  | 1 25%                    |
| Total  | 40 100,00                |

Table 1. Patients according to their age

The arithmetic mean during the first checkup was 1,850 points implying that 4 patients were semi-satisfied, 26 patients were mainly satisfied and 10 patients were satisfied with their voiding situation actually with their quality of life as a consequence of urinary symptoms.

During the second checkup, the IQL arithmetic mean was 1,700 points implying that 28 patients were mainly satisfied, and 12 patients were satisfied with their quality of life as a consequence of urinary symptoms.

During the third checkup, the
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The IQL arithmetic mean was 1,575 points implying that 23 patients were mainly satisfied, and 17 patients were satisfied with their quality of life as a consequence of urinary symptoms.

Previously stated results refer to the total sample i.e. all observed patients. Taking into consideration the age of patients i.e. the equal number of patients (20) in each age group (59-69 and 70-80), the analysis of answers given individually, has been done for those groups within the same sample.

Table 6 refers to the group of patients whose age is 59-69, and Table 7 refers to the group of patients at the age of 70-80.

Table 6. The IQL arithmetic mean in the group of patients whose age is between 59 and 69 during the first, second and third checkup

| Time interval of giving answers about the quality of life | Variable | AM | SD |
|---------------------------------------------------------|----------|----|----|
| 4 weeks                                                 | K1-IQL   | 1,700 | 0,470 |
| 8 weeks                                                 | K2-IQL   | 1,600 | 0,503 |
| 12 weeks                                                | K3-IQL   | 1,450 | 0,510 |

Table 7. The IQL arithmetic mean in the group of patients whose age is between 70 and 80 during the first, second and third checkup

| Time interval of giving answers about the quality of life | Variable | AM | SD |
|---------------------------------------------------------|----------|----|----|
| 4 weeks                                                 | K1-IQL   | 2,000 | 0,649 |
| 8 weeks                                                 | K2-IQL   | 1,800 | 0,410 |
| 12 weeks                                                | K3-IQL   | 1,700 | 0,470 |

NOTE: Symbols of used variables: K1-first checkup K2 second checkup, K3 third checkup, IQL Index of Quality of Life.

Table 8 shows that there has been a highly statistically significant difference between preoperative results of IQL and the results of the same tests during the first, second and third checkup. Taking into consideration the age subgroups (59-69 and 70-80), the testing of AM difference between the results before operation, first, second and third checkup, isolated, for each subgroup was conducted.

Table 9 refers to the comparison of results of age subgroup 59-69. The symbols of the variables used match the ones in the previous tables.

Table 8. Comparison of preoperative results of IQL and the results of the same tests during first, second and third checkup

| Variables | Test result | Conclusion |
|-----------|-------------|------------|
| P-IQL: K1-IQL | 33,893 | 0.000 | p<0.01 |
| P-IQL: K2-IQL | 33,541 | 0.000 | p<0.01 |
| P-IQL: K3-IQL | 35,704 | 0.000 | p<0.01 |

Table 9. Comparison of preoperative results of IQL and the results of the same tests during first, second and third checkup

| Variables | Test result | Conclusion |
|-----------|-------------|------------|
| P-IQL: K1-IQL | 0.00 3,920 | 0.0001 | p<0.01 |
| P-IQL: K2-IQL | 0.00 3,920 | 0.0001 | p<0.01 |
| P-IQL: K3-IQL | 0.00 3,920 | 0.0001 | p<0.01 |

Table 10. Comparison of IQL preoperative results and the results of the same tests during first, second and third checkup

| Variables | Test results |
|-----------|-------------|
| P-IQL: K1-IQL | 1,949 | 0.0587 | p<0.05 |
| K1-IQL | 1,674 | 0.1023 | p<0.05 |
| K2-IQL | 1,738 | 0.1761 | p<0.05 |
| K3-IQL | 1,611 | 0.1154 | p<0.05 |

5. DISCUSSION

Although TURP is a standard surgical procedure in the BPH treatment, there are few studies that assess its impact on the quality of life, as a consequence of the urinary symptoms. It is a fact that there are not any opponents to the currently accepted position that the improvement the quality of life, as a consequence of the urinary symptoms, is the most important goal of the BPH treatment from the patients’ perspective (18).

In this study, the evaluation of the quality of life was done through IPSS whose question No 8 is Index of Quality of Life, as a consequence of the urinary symptoms. In 1992, the American Urologists Association (AUA) published Symptom Score...
Index which was adopted by the World Health Organization in 1993 as the International Prostate Symptom Score (I-PSS). It consists of 7 same questions referring to LUTS as in AUA Symptom Index with additional question No. 8 referring to disease specific quality of life (IQL). The questionnaire was designed in a way that patients are expected to fill it in by themselves.

However, in reality, it has turned out that some patients cannot fill it in on their own. Many studies, nevertheless, have shown that there is not a big difference in answers i.e. deviation in terms of over or under evaluating the complaint degree irrespective of the way the questionnaire was completed (patient on his/her own or in doctor’s presence) (19, 20).

Marszalek and associates analyzed the improvement of the symptom score after TURP in 25 random and controlled studies between 1996 and 2006 (18).

All studies have shown dramatic improvement of the symptom score which was -62% after 12 months and thus the quality of life has significantly been improved (21).

By analyzing the obtained results in our study, we have shown that there is a highly statistically significant difference between the IQL preoperative values and the results of the same test during all postoperative checkups.

By testing the difference of IQL arithmetic means, between the age subgroups of the patients treated with the TURP method, our study has shown that there is not a statistically significant difference between the results in the mentioned age subgroups during all postoperative checkups.

The quality of life, as a consequence of the urinary symptoms, has significantly improved after treating BPH with TURP method. The impact of TURP on the quality of life, as a consequence of urinary symptoms, does not depend on age. As a matter of fact, TURP is equally efficient in that field irrespective of patients’ age.

REFERENCES
1. Van Venrooij GE, Van Melick HH, Exxhardt MD, Boon TA. Correlations of urodynamic changes with changes in symptoms and well-being after transurethreal resection of the prostate. J Urol. 2002; 168: 605-9
2. Seki N, Takei M, Yamaguchi A, Naito S. Analysis of prognostic factors regarding the outcome after a transurethreal resection for symptomatic benign prostatic enlargement. Neurourol Urodyn. 2006; 25: 428-9
3. Tanaka Y, Masumori N, Ishi N, Furuya S, Ogura H, Tsukamoto T. Is the short-term outcome of transurethreal resection of the prostate affected by preoperative degree of bladder outlet obstruction, status of detrusor contractility or detrusor overactivity? Int J Urol. 2006; 13: 398-401.
4. Han DH, Jeong YS, Choo MS, Lee KS. The efficacy of transurethreal resection of the prostate in the patients with weak bladder contractility index. Urology. 2008; 71: 533-66.
5. Masumori N, Furuya R, Tanaka Y, Furuya S, Ogura H, Tsukamoto T. The 12-year symptomatic outcome of transurethreal resection of the prostate for patients with lower urinary tract symptoms suggestive of benign prostatic obstruction compared to the urodynamic findings before surgery. BJU Int. 2009; 105: 129-33.
6. Thomas AW, Cannon A, Barrletr E, Ellis-Jones J, Abrams P. The natural history of lower urinary tract dysfunction in men: the influence of detrusor underactivity on the outcome after transurethreal resection of the prostate with minimum 10-year urodynamic follow-up. BJU Int. 2004; 94: 745-50
7. Komiya A, Suzuki H, Awa Y et al. Clinical effect of a nafodipil on the quality of life of patients with lower urinary tract symptoms suggestive of benign prostatic hyperplasia: A prospective study. International Journal of Urology. 2010;17:555-62
8. Reich O, Bachmann A, Siebels M, Hofstetter A, Stief CG, Sulzer T. High power potassium-titanyl-phosphate laser vaporphoration of the prostate in 66 high risk patients. J Urol. 2005; 173: 158-60.
9. Malek RS, Kunztsman RS, Barret DM. Phoselective potassium-titanyl-phosphate laser vaporphoration of the benign obstructive prostate: observations on long-term outcomes. J Urol. 2005; 174: 1544-50
10. Peterson MD, Matlaga BR, Kim SC et al. Holmium laser enucleation of the prostate for men with urinary retention. J Urol. 2005; 174: 998-1001.
11. Barber NJ, Muir GH. High power KTP laser prostatectomy, the new challenge to transurethreal resection of the prostate. Curr Opin Urol. 2004; 14: 21-5.
12. Te AE. The development of laser prostatectomy. BJU Int. 2004; 93: 262-5.
13. Elzayat EA, Habib E, Elhiliali MM. Holmium laser enucleation of the prostate: a size-independent new gold standard. Urology. 2005; 66: 108-13.
14. Seki N, Mochida O, Kinukawa N, Sagayama K, Naito S. Holmium laser enucleation for prostatic adenoma: analysis of learning curve over the course of 70 consecutive cases. J Urol. 2003; 170: 1847-50.
15. Madersbacher S, Berberger M. Is transurethreal resection of the prostate still justified? BJU Int. 1999; 83: 227-37.
16. Han M, Alpert H, Partin AW. Retropubic and suprapubic open prostatectomy. In Walsh PC, Retik A, Vaughan ED, Wein AJ eds, Campbell’s Urology 8th ed. Chapter 41. Philadelphia:WB Saunders, 2002; 1423-33.
17. Rassweiler J, Teber D, Kuntz R, Hofmann R. Complications of transurethreal resection of the prostate (TURP)-incidence, management and prevention. Eur Urol. 2006; 50: 969-80.
18. Robertson C, Link CL, Onel E et al. The impact of lower urinary tract symptoms an comorbidities on quality of life: the BACH and UREPIC studies. BJU Int. 2007; 99: 547-54.
19. Lujan Galan M, Pascualda A, Martin Oes E, Llanes Gonzales L, Berenguer Sanchez A. The validity of the I-PSS questionnaire in a sample of 262 patients with benign prostatic hyperplasia. Arch Exp Urol. 1997; 50: 847-53.
20. Rodrigues Neto N at all. Latin American study on patient acceptance of the I-PSS in the evaluation of symptomatic benign prostate hyperplasia. J Urol. 1997; 49(1): 46-9.
21. Marszalek M, Ponholzer A, usman M, Berger I, Madersbacher S. Transurethreal Resection of the Prostate. Eur Urol Suppl 2009; 8: 504-512

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