ORIGINAL ARTICLE

The Effects of Treating Lower Urinary Tract Symptoms on Sexual Function

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Summary

We prospectively evaluated the effect of the treatment of lower urinary tract symptoms (LUTS) on sexual function. The patients were assessed by using the International Index of Erectile Function (IIEF-15) inventory at baseline and three months after medical (alpha-blockers) or surgical treatment (transurethral resection of the prostate, TURP). Following treatment, there were improvement in erectile function and intercourse satisfaction while orgasmic, overall satisfaction and sexual drive were relatively unchanged in the medication group. Patients who had surgical treatment suffered retrograde ejaculation, dissatisfaction in sexual intercourse and overall sexual satisfaction compared to patients who were on alpha-blockers.

Key Words: Benign prostatic hyperplasia, lower urinary tract symptoms, alpha-blockers, transurethral resection of the prostate, sexual function, International Index of Erectile Function (IIEF-15)

Introduction

Sexual dysfunction is a common problem in aging men and may co-exist with lower urinary tract symptoms caused by benign prostatic hyperplasia. It had been reported that among men undergoing prostatectomy, the prevalence of erectile dysfunction prior to surgery was 14% among those less than 60 years of age and 57% in men above 60 years of age[1]. Medical conditions that are commonly associated with sexual dysfunction include diabetes, vascular disease, renal failure and arthritis[2]. Loss of erection has been reported in between 5% and 40% of men undergoing transurethral resection of the prostate (TURP)[3,4]. The reason for this observation is still unclear and may be related to psychogenic factors, or physical factors such as the occurrence of retrograde ejaculation or peri-operative trauma to the anatomically closely related neurovascular bundle the corpora cavernosa[5]. It is unknown whether disease processes in the prostate itself contribute to the sexual dysfunction. While this is conceivable in infiltrating prostate cancer, it would be most unlikely in benign diseases of the prostate.

The occurrence of retrograde ejaculation and impotence after prostatectomy is well-documented[6,7] and may add a psychological dimension to any pre-existing partial sexual dysfunction. Clear documentation of any sexual disorder prior to any treatment and after treatment would help to give a clearer picture as to whether the relationship between benign prostatic diseases and sexual dysfunction was causal, consequential or both.

In this study, we set out to assess the various domains of sexual function namely erectile function, sexual drive, orgasmic function, intercourse satisfaction and overall sexual satisfaction before and after surgical and medical treatment in patients with LUTS and help us to understand sexual dysfunction in this patient population.

Materials and Methods

This study was conducted at the University Hospital, Kuala Lumpur, a busy teaching general hospital which also serves as a secondary and tertiary referral centre. Patients were recruited at the Urology ward and clinic and were assessed at baseline and three months follow-up on their sexual function. The study consisted of 175 lower urinary tract symptoms (LUTS) patients; 123 patients were commenced on medical treatment ((-blockers: prazosin, terazosin, doxazosin and alfuzosin) and 52 patients underwent surgical treatment (transurethral resection of the prostate, TURP). Management decisions were entirely based on clinical indications. In general, surgically treated patients had presented with more severe bladder outlet obstruction or its complications. Ethical approval was obtained from the hospital ethics committee prior to the commencement of the study. Patients' consent was obtained. All patients were interviewed using the International Index of Erectile Function (IIEF-15)[8]. Since the study population consisted of a multiethnic group, the translated version of IIEF-15 were used. Translations had been verified using the back-translation technique[9].

The IIEF-15 questionnaire consists of five separate domains of sexual function: (1) erectile function (EF), (2) orgasmic function (OF), (3) sexual desire (SD), (4) intercourse satisfaction (IS) and (5) overall satisfaction (OS). Domains score were completed by summing the scores for individual items in each domain.

Statistical indices in this study were Student's t-test and Chi-squared test.

Results

Socio-demography

Most patients on medication fell in the 60-69 year age group (44.72%), while 26.83% were in the 50-59 year age group, 23.58% in the 70 - 79 year age group, 4.07% less than 50 years and 0.81% above 80 years. The mean age of this group was 64.62 years (SD=7.95 years). Most of the surgical arm fell within the age group of 70-79 (42.31%), 60 - 69 (36.54%), 50 - 59 (15.38%) and above 80 (5.77%) with a mean age of 69.56 years (SD=7.94 years). A significant difference was noted in their mean ages ($p<0.0005$).

Chinese (56.91%) formed the largest ethnic group of the medically treated patients followed by Indians (24.39%), Malays (14.63%) and Others (4.07%). Similarly in surgically treated group, Chinese formed the largest proportion (51.92%) followed by Malays (26.92%), Indians (19.23%) and Others (1.92%). However, no significant difference was noted.

Analysis of the IIEF scores

Before treatment, the surgically treated group had a lower mean score in all five domains of sexual function compared to the medically treated group (erectile function: $p<0.01$; orgasmic function: $p<0.005$; sexual drive: $p<0.005$; intercourse satisfaction: $p<0.005$ and overall satisfaction: $p<0.05$).

After treatment, there was a significant difference in all five domains between both groups (erectile function: $p<0.05$; orgasmic function: $p<0.0001$; sexual drive: $p<0.001$; intercourse satisfaction: $p<0.0001$ and overall satisfaction: $p<0.0001$).

There was a significant deterioration in overall satisfaction ($p<0.0005$) and orgasmic function ($p<0.05$) in the surgically treated group compared to the medically treated group before and after treatment. However, the erectile function, intercourse satisfaction and sexual drive did not differ significantly (Fig. 1 & 2).

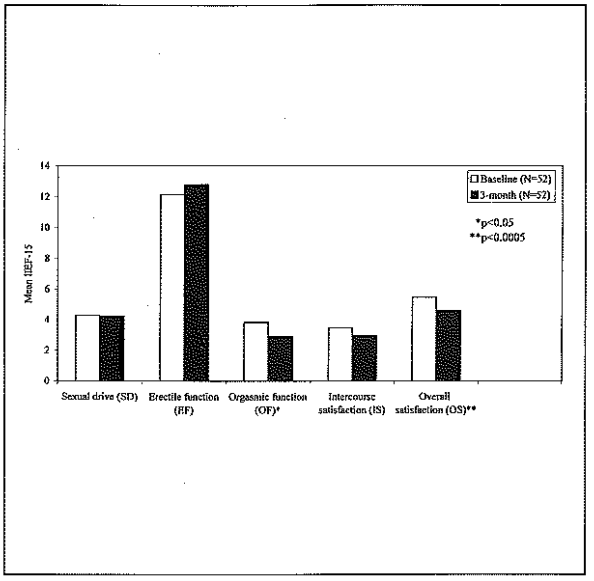

Fig. 1: The domains of IIEF-15 scores in patients with LUTS treated surgically.

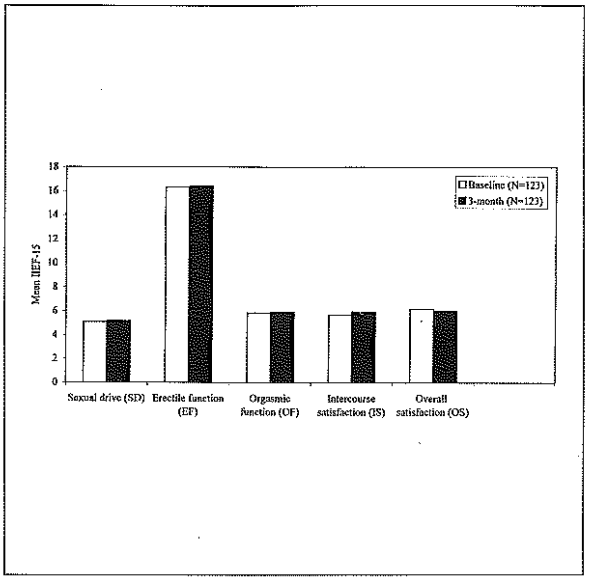

Fig. 2: The domains of IIEF-15 scores in patients with LUTS treated medically.

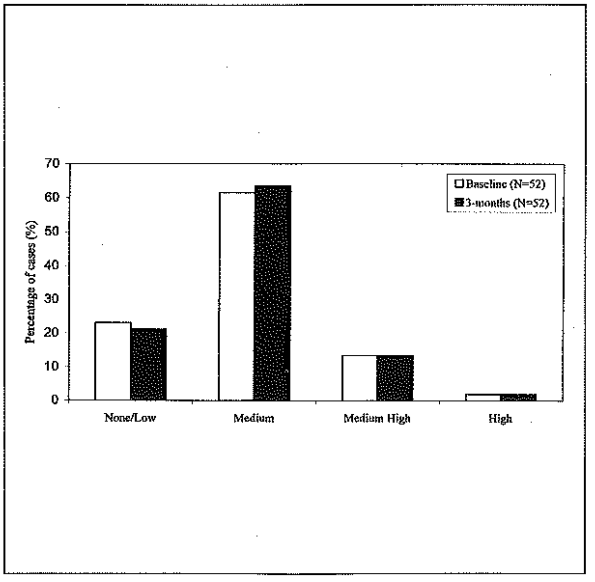

Fig. 3: The level of sexual drive in patients with LUTS treated surgically.

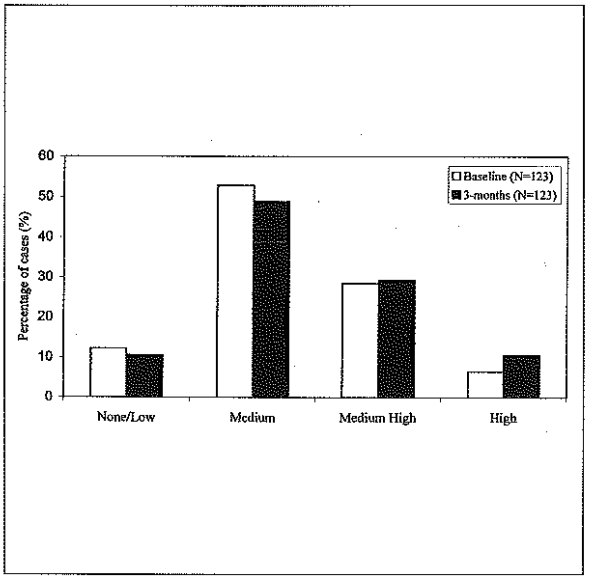

Fig. 4: The level of sexual drive in patients with LUTS treated medically.

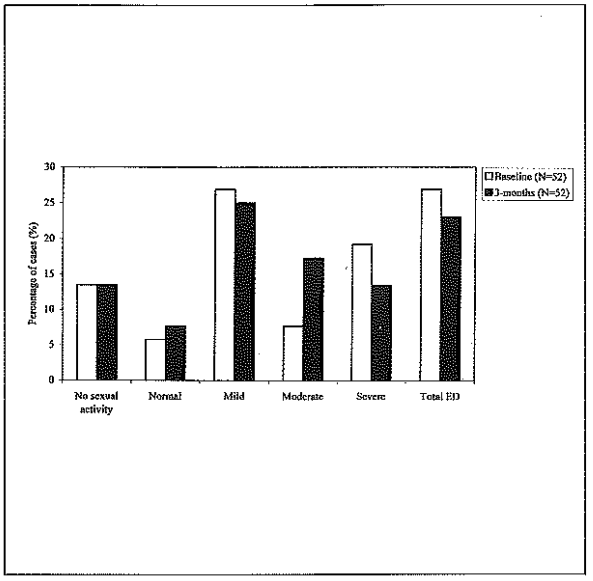

Fig. 5: The erectile function in patients with LUTS treated surgically.

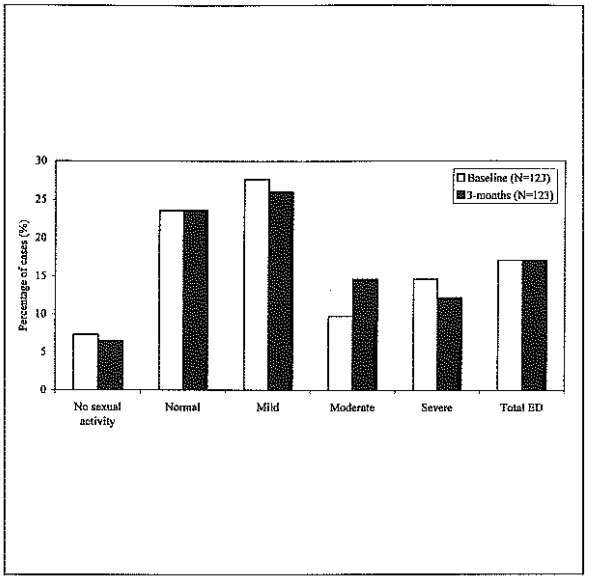

Fig. 6: The erectile function in patients with LUTS treated medically.

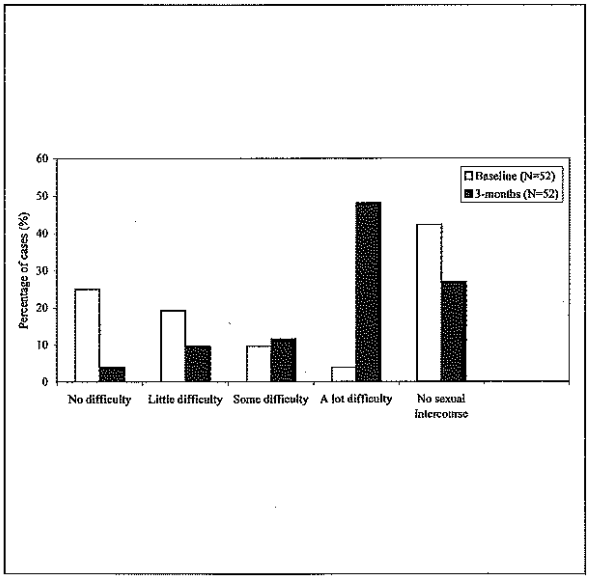

Fig. 7: The orgasmic function in patients with LUTS treated surgically.

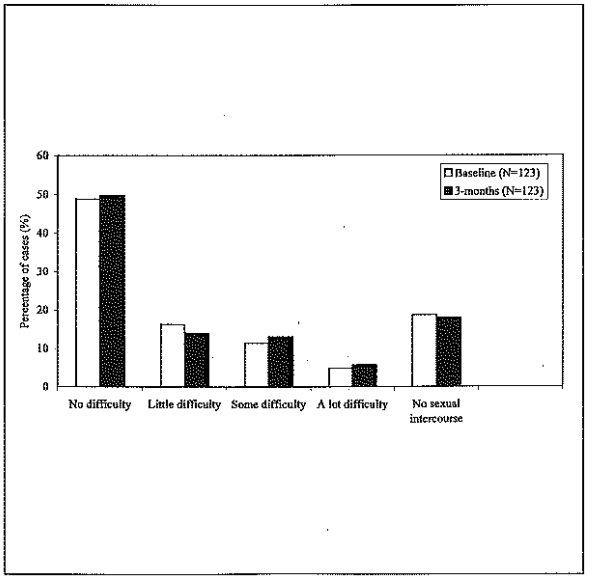

Fig. 8: The orgasmic function in patients with LUTS treated medically.

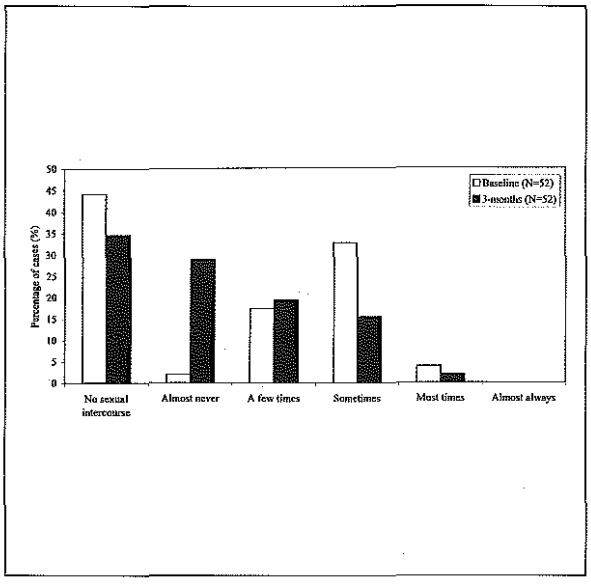

Fig. 9: The intercourse satisfaction in patients with LUTS treated surgically.

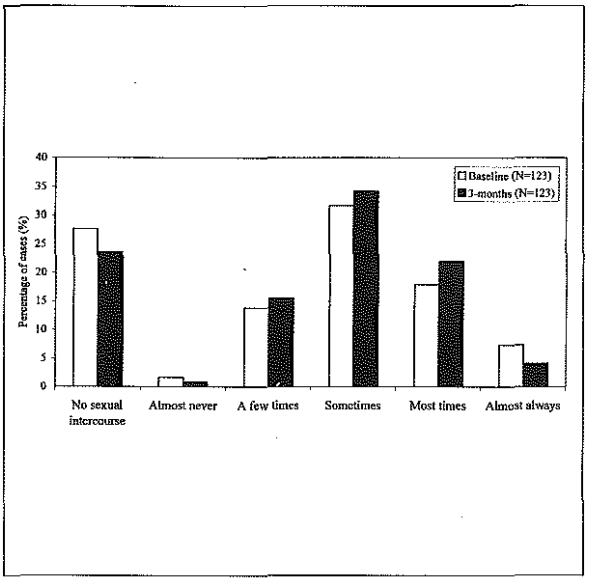

Fig. 10: The intercourse satisfaction in patients with LUTS treated medically.

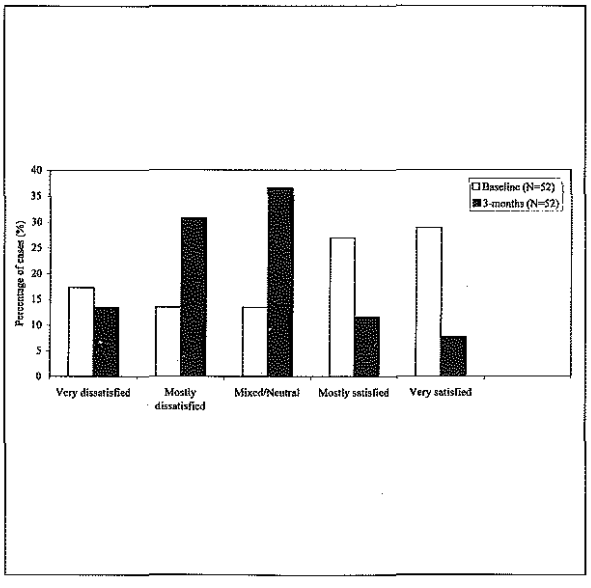

Fig. 11: The overall sexual satisfaction in patients with LUTS treated surgically.

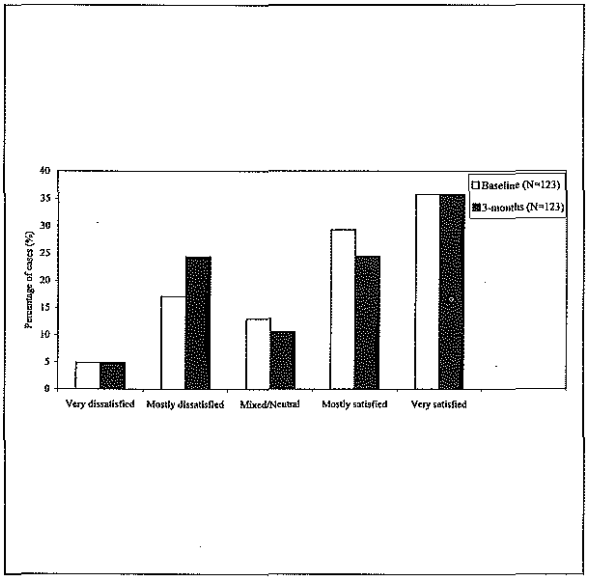

Fig. 12: The overall sexual satisfaction in patients with LUTS treated medically.

Sexual drive

The majority of the surgically and medically treated patients had moderate levels of sexual drive before and after treatment. In both treatment arms, there was no significant difference in sex drive after treatment (Fig. 3 & 4).

Erectile function

Before treatment, the surgical arm had poor erectile function compared to the medication arm. Surgery resulted in a drop in the number of patients with mild, severe and total ED but an increase in the number of patients with normal erection and moderate ED. Similarly, medical treatment resulted in a drop in number of patients with mild and severe ED and a rise in number of patients with moderate ED (Fig. 5 & 6).

Orgasmic Function

Before treatment, the orgasmic function in the medication group was slightly better than the surgical treated group. Following TURP, 44.23% of patients complained of retrograde ejaculation and 1.92% had a reduction volume of semen following ejaculation and this was reflected in the reported difficulty with orgasm. Ejaculation was still maintained for a small proportion of the patients. There was no change in orgasmic function after alpha-blockers treatment in the medication group (Fig. 7 & 8).

Intercourse satisfaction

Surgery appear to increase the number of patients who became dissatisfied with sexual intercourse whereas medication appear to increase the number of patients who become more satisfied with sexual intercourse. (Fig. 9 & 10).

Overall satisfaction

Overall satisfaction with sexual intercourse was relatively unchanged by medication but deteriorated after surgery (Fig. 11 & 12).

Discussion

This study noted that the men in the surgically treated group were significantly older than the medically treated group and this finding is in agreement with other studies stating that as age increases, the chances of developing BPH from LUTS is higher[1]. This group of patients is the most likely to undergo surgical intervention.

Before surgery, the surgical group had lower mean scores in all five domains of erectile function. The loss of interest in sex and other psychological disturbances due to the disease were factors that hindered their performance of sexual activities. Similar findings were also noted in another study[28]. In the medical group, the mean scores of all five domains of IIEF-15 was higher than the surgical group where the surgical group had a higher incidence of sexual dysfunction, likewise in other study [11]. However, the surgical group had lower mean scores in some of the domains of IIEF-15 after surgery. This was attributed to the retrograde ejaculation and loss of erection after treatment which contributed to the dissatisfaction of sex life compared to the medical group in which almost all domains remained relatively unchanged. A deterioration in overall satisfaction in sex life in this study was noted, likewise in others studies[4,5,12].

In both groups, the majority of the LUTS patients had lower sexual drives and this was particularly so in the surgical group. This suggests that the production of testosterone is dependent on age. The production of testosterone has also been shown to be reduced in individuals over the age of 70 compared with 50 years old suggesting that testicular reserve diminishes with age. Testosterone withdrawal is associated with a decline in sexual interest (libido), which often precedes a decrease in the frequency of erections[10].

There was no pathological effect on sexual function. Sexual dysfunction seen in older men was attributed to the normal aging process. There was a distinct relationship between age and erectile dysfunction in both groups. The surgical

group which was older than the medication group, had a higher incidence of erectile dysfunction. Freeman[13] studying the sexual capacities in aging males also found similar results.

A small proportion of fully potent men had a reduced potency three months after TURP, as demonstrated in another study[4]. In men with partial impotence, the present results showed a much higher risk of total postoperative impotence. The risk of impotence following TURP in potent men was finite but relatively small in the study population.

Other studies also found that TURP produced retrograde ejaculation and caused erectile dysfunction[14-17]. Our findings also indicated a decrease in quality of erection in a small proportion of the LUTS patients after TURP likewise with other studies[7,17-22].

Erectile dysfunction after TURP is caused by damage to the neurovascular bundles during operation. This could result from direct injury to these structures, leakage of irrigant fluid or prolonged used of diathermy in the region of the capsule. However some patients experience slight improvement in erection with time after TURP, raising the possibility of neuropraxia, but neither of those observations excludes the possibly of psychogenic impotence which was noted in another study[20].

A slight deterioration of orgasmic function in the surgical group was observed prior to treatment. This could be due to age, aging of the bladder neck sphincter and the low incidence of reduced semen volume. Retrograde ejaculation was found to occur in a majority of patients who had undergone TURP and this seems to be a common complaint following TURP. This was attributed by the deterioration and loss of the bladder-neck sphincter, where the bladder neck does not close when ejaculation occurs. Thus semen passes retrogradely into the bladder instead of the urethra and is subsequently released together with urine. Kinn *et al* [23] also found similar findings in their study.

The dissatisfaction of sexual intercourse before TURP could be due to pain secondary to BPH during sexual intercourse, abstention from sexual activity or inability to perform due to the insertion of indwelling catheter. Dissatisfaction after TURP is due to the deterioration of erection, retrograde ejaculation and premature ejaculation after TURP. An increase of satisfaction in sexual intercourse after alpha-blockers treatment is mainly due to the improvement of LUTS and the decrease in sexual drive (libido) could possibly be due to the alpha-blockers as claimed by some patients. Whether alpha-blockers such as prazosin, doxazosin, terazosin and alfuzosin can cause ED is still uncertain.

The overall sexual dissatisfaction in the surgical group prior to surgical treatment was mainly due to inability to perform sexual intercourse due to the insertion of the indwelling catheter, dysuria, abstainence from sex for fear of causing more pain and worsening of urinary symptoms. After surgery, the overall sexual dissatisfaction was mainly due to reasons such as losing erection or inability to maintain erection, premature ejaculation, retrograde ejaculation and fear of causing pain during sexual intercourse or sexual activity. In the medically treated group, the overall sexual dissatisfaction was due to the deterioration in erection and lacking or depreciation of sexual drive after receiving alpha-blockers treatment.

However, this study also noted that the psychological and emotional factors such as depression and anxiety could have contributed and caused sexual dysfunction in some of the LUTS patients as noted in other studies[5,24,28].

It was quite apparent that some declined to engage in sexual activity in their advancing age. This was largely due to the loss of interest in sex, performance anxiety due to erectile dysfunction, reluctance of spouse to give in or loss of interest in the spouse and perhaps inconvenience of having children who were living in the same house[13, 25-29].

Conclusion

This study showed that TURP was associated with some changes in sexual function in patients with lower urinary tract symptoms. Among the domains of sexual function that were adversely affected were retrograde ejaculation, intercourse satisfaction and overall satisfaction. In the medically treated group with alpha-blockers, all the domains of sexual function were relatively unaffected. The slight improvements of erectile function following TURP and alpha-blocker treatment resulted from an improvement of LUTS.

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