Does Prostatitis Influence Surgical Outcome of Patients With Benign Prostate Hyperplasia?

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ABSTRACT

Objective — *To determine the effect of prostatitis on lower urinary tract symptoms (LUTS) in patients undergoing transurethral resection of prostate (TURP) on incidental finding on histopathology along with benign prostate hyperplasia (BPH).*

Study design — *Retrospective study.*

Place & Duration of study — *Department of Urology, Jinnah Postgraduate Medical Center (JPMC) Karachi, from January 2017 to December 2018.*

Methodology — *The records of the patients in whom TURP done were reviewed. Clinical parameters (age, size of prostate gland, IPSS for LUTS) and pathological results of prostate were compared before and after TURP at 3rd and 6th month follow up.*

Results — *Out of 144 patients, 97 were diagnosed to have benign prostate hyperplasia on histopathology while 47 patients had prostatitis along with benign prostate hyperplasia. Age of the patients in both groups was similar while size of the prostate was higher in patients with prostatitis when compared with patients of benign prostate hyperplasia. Patients who had both prostatitis and BPH on histopathology had higher IPSS when compared to patients with benign prostate hyperplasia alone before and after TURP.*

Conclusions — *In patients, prostatitis may be responsible for worsening of the lower urinary tract symptoms with benign prostatic hyperplasia. Transurethral resection of prostate cannot alleviate the symptoms in patients who had prostatitis and benign prostatic hyperplasia together.*

Key words — *Lower urinary tract symptoms, Prostate, Benign prostate hyperplasia, Prostatitis, Transurethral resection of prostate.*

INTRODUCTION:

Lower urinary tract symptoms consist of problem in voiding, pain which may be in perineal or suprapubic region, in prostate and during ejaculation or erection. LUTS are main clinical presentation of diseases involving prostate and urinary bladder. Benign prostate hyperplasia is the disease of aging male.[1] Prostatitis on the other hand is considered the disease of younger male but it is evident now that it is as common as BPH in patients of more than 50 years compared to younger age.[2,3] Males of more than 50 years with BPH experience LUTS in 50 % while in prostatitis 8% have LUTS.[4] Association between BPH and prostatitis is not studied in detail despite higher prevalence of both the conditions together. It is seen that many physicians have problem in distinguishing clinically between prostatitis and BPH in older male patients.[5]

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Presently it is hypothesized that BPH is an immune mediated inflammatory disease. Inflammation results in series of processes in prostate tissue including tissue destruction, release of growth factors, cellular proliferation and differentiation.[6-9] In BPH, prostatitis is frequently reported by pathologist but clinically it remains undiagnosed and ignored by the urologists as symptoms of prostatitis and BPH overlap each other.[8]

One study revealed that patients with BPH and LUTS have history of prostatitis 7.7 times than healthy individuals.[9] There is no single etiologic factor for the development of asymptomatic histological prostatitis but many factors interplay in development of prostatic inflammation like, infections, urine and seminal reflux, localized hormonal environment and immunologic factors resulting in enlargement of prostate with the onset of LUTS.[10] There are few studies in the literature that have been conducted regarding the clinical impact of histologically proven prostatitis in patients along with BPH before and after surgery. Some studies have concluded that surgical intervention in patients with prostatitis along with BPH have given favorable outcome while in a single study it has been reported that surgical intervention had no benefit.[11] Present study was designed to find out if TURP was helpful in relieving LUTS in patients who had incidental diagnosis of prostatitis along with BPH on histopathology

METHODOLOGY:

After getting IERB committee approval of Jinnah Postgraduate Medical Center Karachi, hospital records of the patients who underwent TURP were reviewed retrospectively. Data from June 2017 to May 2018 were analysed. A total of 144 patients were included in this study who had the clinical information with histopathological reports. Patients with BPH and incidental finding of prostatitis along with BPH were included. They were divided into two groups; Group A comprised of those patients who had BPH on histopathology while Group B patients were with BPH along with incidental findings of prostatitis on histopathology report.

Patients who were included in this study had LUTS due to benign prostate enlargement (BPE), with age above 50 years having no history of previous surgery or trans-rectal prostatic biopsy. Those patients who had positive urine culture, already diagnosed as having acute and chronic bacterial prostatitis, chronic pelvic pain syndrome (according to NIH classification), bladder or prostate cancer, urethral stenosis and neurological disorders were excluded. Digital rectal examination, LUTS and trans-rectal ultrasound were used to diagnose the BPE. Clinical information of all the patients such as age, LUTS (using International Prostate Score System - IPSS) before and after 6 months of TURP and prostate volume (by trans-rectal ultrasound) were recorded on the pre designed form. Data was entered and analyzed through SPSS version 22. Mean and standard deviation was used for quantitative variables such as age, prostate size, preoperative and IPSS.

RESULTS:

A total 144 patients were included in this study. Of the total, 97 (67.36 %) patients were diagnosed as havig BPH alone while 47 (32.64 %) had prostatitis with BPH on histopathology. In histopathology report of the 47 patients, chronic prostatitis was present in 28 (68%), acute prostatitis in 15 (25%) while four (7%) had acute on chronic prostatitis. Age was not found different among groups. The size of the prostate and pre and postoperative LUTS in both groups were different (table I). In group A, 12 (12.37 %) patients had history of catheterization while in group B, 15 (31.91 %) patients needed it.

DISCUSSION:

In recent years number of studies have been conducted across the globe to establish the relationship between BPH and prostatitis.[12,13] In the literature it has been proved that prostatic inflammation is not only common finding in BPH patients in surgically resected prostate tissue but plays important role in progression of prostatic growth, LUTS and its relationship with LUTS.[14] Prostatitis may present with LUTS as in BPH but most important symptom that differentiates prostatitis

Table I: Comparison of the Variables Between the Groups (n = 144)

Variables	Group A (BPH) n=97	Group B (BPH with Prostatitis) n=47
Mean age of the patients	60.26 + 6.51 years	60.48 + 5.59 years
Size of the prostate gland	42.34 + 7.22 ml	51.40 + 9.48 ml
IPSS (before TURP)	19.51 + 3.05	24.42 + 2.76
IPSS (After TURP)	2.30 + 2.29	8.38 + 7.92
History of Catheterization (n)	12/97 (12.37%)	15/47 (31.91 %)

from BPH is genitourinary and pelvic pain.[15]

In literature it is found that different parameters were used to document prostatitis and its clinical correlation with severity of the LUTS, such as use of inflammatory cells to diagnose it while others also used pro-inflammatory cytokines and interleukins.[16-19] In our study we diagnosed the prostatitis by analyzing the inflammatory cells in the resected specimen of prostate. In our study, 47 (34.81%) patients were found to have prostatic inflammation along with BPH on histopathology which is almost the same as reported in other studies.[20] However a study conducted in Indonesia the incidental prostatitis finding was found to be 86.7% which is much higher as compared to present study.[21] In a study it has been seen that men, with chronic prostatitis who took anti-inflammatory and antimicrobial therapy routinely presence of leukocytes and bacterial counts did not correlate with symptoms.[22]

Prostate inflammation is responsible for the symptomatic progression of LUTS, urinary retention and ultimately may need surgical intervention for treatment.[23] In our study there was obvious difference in the size of prostate between the two groups as compared to other studies.[15,19] Our finding of age difference in patients with prostatitis/BPH and BPH alone was same as reported in another study.[24] Patients with BPH/prostatitis had higher frequency of urinary catheterization as compared to BPH alone as noted in our study. This may be due to the effect of secreted cytokines from prostatic inflammatory cells.

In present study the total IPSS before and after TURP was different between the two groups. This is consistent with the findings of another study. TURP as means for final treatment of recurrent prostatitis has been effectively used by some urologist and they found encouraging results. In one study 23 patients underwent TURP solely for prostatitis as last option and reported that about half of the patients were cured and two more patients became symptom free after one to two episodes, leading to successful treatment in 66% patients .[24]

Our study has few limitations. We have diagnosed the prostatic inflammation on the basis of inflammatory cells on histology. By including the inflammatory markers there would have been more strong evidence to validate the findings. It still remained unclear how inflammation causes the worsening of LUTS such as acute urinary retention and higher IPSS. Further studies are needed about the inflammatory mediators and their pathway in development of BPH related symptoms to support our findings.

CONCLUSIONS:

In patients with benign prostate hyperplasia, prostatitis may be responsible for worsening of the lower urinary tract symptoms. Transurethral resection of prostate resulted in alleviation of the symptoms in patients who had prostatitis along with benign prostatic hyperplasia.

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