



Correlation Between the Presence of Inguinal Hernias and the Intensity of Lower Urinary Tract Symptoms Related to Benign Prostatic Hyperplasia

KEYWORDS

Hernia , Prostate , Benign Prostatic Hyperplasia , BEP , Urology , General Surgery.

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ABSTRACT *The studies showing the correlation of Benign Prostatic Hyperplasia (BPH) with Inguinal Hernias are scant in the world and in India. Hence this study was taken up in order to find the correlation between BPH, Inguinal Hernias and Lower urinary tract symptoms (LUTS) related to BPH quantified through the International Prostate Symptom Score (IPSS). This study has also tried to establish a strong relationship between the presence of Inguinal hernias and BPH. The study also brings to notice a relationship between Inguinal hernias and LUTS. LUTS was quantified using the 7 question International Prostate Symptom Score (IPSS) and the patients were classified as having mild, moderate and severe symptoms. The role of IPSS as a clinical tool in the evaluation of patients with Inguinal Hernia and BPH cannot be emphasized more as the results of our study have demonstrated.*

INTRODUCTION

The prostate is a male organ which is likely to be enlarged with advance in age. Benign prostatic hyperplasia is macroscopically characterized by an enlargement of the prostate gland and histologically caused by the progressive hyperplasia of the stromal and glandular prostatic cells. This non malignant overgrowth of the prostatic tissue ultimately leads to bladder outlet obstruction (BOO). Thus, Benign prostatic hyperplasia results in bladder outlet obstruction.¹ Bladder outlet obstruction, in turn leads to the complications including Inguinal Hernia (IH) and Lower urinary tract symptoms (LUTS).²

Multiple etiologic factors have been described with the genesis of urinary symptoms, including the effect of aging on the nervous system and bladder, metabolic derangements, changes in fluid regulation, obstruction and autonomic over activity.³ Traditionally, the diagnostic evaluation of patients with Lower urinary tract symptoms (LUTS) suggestive of bladder outlet obstruction (BOO) includes symptomatic evaluation.⁴ Symptom scoring systems have proved to be a useful tool to quantify clinical symptoms, however several studies have shown that none of these scores correlate with Bladder outlet obstruction (BOO) and BPH related complications, furthermore they are not disease specific.^{5, 6}

A variety of factors are responsible for development of Inguinal hernia. These include obesity and work related physical activity. It is not uncommon for Urologists to face patients presenting with LUTS associated with Inguinal Hernia.⁷ However, the studies showing the correlation of BPH with Inguinal Hernia are scant in the world and also in India. Hence, this study was taken up in order to find the correlation between the BPH, Inguinal Hernia and the intensity of Lower urinary tract symptoms (LUTS) related to BPH quantified through the International Prostate Symptom Score (IPSS).

AIM AND OBJECTIVES

AIM

To verify the correlation between the presence of Inguinal Hernias (IH) and the intensity of Lower urinary tract symptoms (LUTS) related to Benign Prostatic Hyperplasia (BPH) quantified through the International Prostate Symptom Score (IPSS).

OBJECTIVES

- ❖ To evaluate the Prostate Volume (PV), IPSS score and Post voiding residual urine volume in 2 groups of patients having Inguinal Hernia (IH) and those without IH.
- ❖ To evaluate the intensity of Lower urinary tract symptoms (LUTS) using the above parameters.

- ❖ To find a correlation between the patients having Inguinal Hernias (IH) and Lower urinary tract symptoms (LUTS).

MATERIALS AND METHODS

A prospective comparative study was undertaken in a Tertiary care centre in order to verify the correlation between the presence of Inguinal hernias and the intensity of Lower urinary tract symptoms (LUTS) related to Benign prostatic hyperplasia (BPH) between August 2011 and July 2013. A total of 50 patients over the age of 50 years were included as a study sample. Institutional Ethical committee approval was obtained before the study. An informed, bilingual, written consent was obtained before including the patients as study subjects.

The study subjects were divided in to two equal groups as follows

Group 1 (Study group): composed of 25 patients with Inguinal Hernia.

Group 2 (Control group): composed of 25 patients with no clinical evidence of Inguinal Hernia with LUTS related to BPH.

The inclusion and exclusion criteria were as follows

Inclusion criteria

- ❖ All patients coming to a Tertiary Care Centre with Inguinal Hernia (Group 1) and Lower urinary tract symptoms (LUTS) without Inguinal Hernia (Group 2).

Exclusion criteria

- ❖ Urinary tract infections
- ❖ Urethral stricture
- ❖ Prostate carcinoma
- ❖ Recent history of Abdominal Surgery (< 1 Year)
- ❖ Previous therapy for voiding Dysfunction (during last 3 months)

A detailed history of the patients belonging to both the groups was taken and they were subjected to a thorough general physical, systemic and local examination including per rectal examination. Routine blood investigations including Complete Hemogram, Serum electrolytes, HIV/HBsAg status, Blood sugar levels and routine urine macroscopic and microscopic examination. LUTS was quantified using the 7 question International Prostate Symptom Score (IPSS) and the patients were classified as having mild, moderate and severe symptoms according to the final score as follows,

IPSS

0 – 7
8 – 19
> 20

Category

Mild symptoms
Moderate symptoms
Severe symptoms

Inguinal Hernia was detected by physical examination by 2 surgeons. Non invasive parameters of evaluation include post void residual (PVR) volume of urine and measurement of prostate volume (PV) by abdominal ultrasonography.

The data was collected using a pre designed pro forma. The data was then transferred to a spreadsheet and analyzed using Statistical Package for Social Sciences (SPSS vs. 18). The categorical variables were analyzed using frequency and percentages. The quantitative variables were analyzed using means, proportions and Z test and paired t test.

RESULTS**Age distribution of the study group**

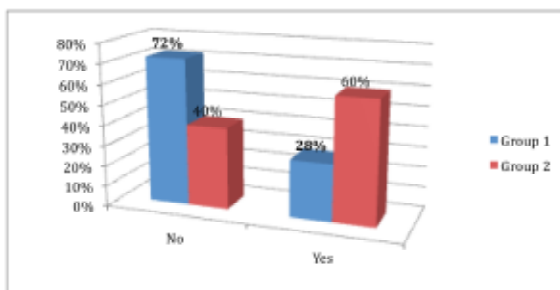
About 40% of the patients with inguinal hernia belonged 50 to 59 years and 60 to 69 years. About 44% of the study subjects in group 2 belonged to 60 to 69 years.

Distribution of the study groups according to increased frequency of micturition

About 60% of the patients in Group 1 and 92% of the cases in group 2 had symptoms of increased frequency of micturition. However, there was a statistically significant difference between both the groups with symptoms of increased frequency of micturition.

Distribution of the study groups according to urgency of micturition

About 32% of group 1 and 68% of group 2 patients had urgency of micturition. There was a statistically significant difference between the groups in occurrence urgency of micturition.

Chart 1. Distribution of the study groups according to incomplete emptying of bladder

About 28% of the patients in group 1 had symptoms of incomplete emptying of the bladder. About 60% of the patients in group 2 had symptoms of incomplete emptying of the bladder. A statistically significant difference was observed between the two groups.

Distribution of the study groups according to nocturia

Almost half of the patients with Inguinal hernia had nocturia and about 64% patient's belonged group 2 had nocturia. However there was no statistically significant difference in occurrence of nocturia between the two groups.

Distribution of the study groups according to poor stream

About 20% of the patients with inguinal hernia had poor stream of urine. More than half of the patients in group 2 had poor stream of urine. This difference was statistically significant between the two groups.

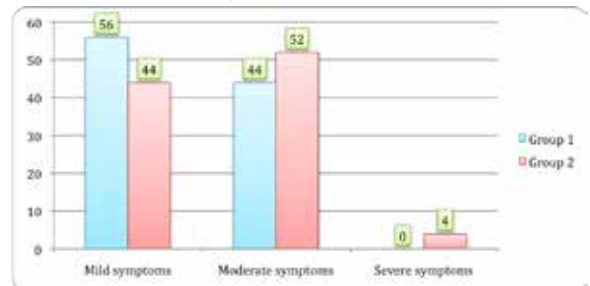
Distribution of the study groups according to straining

About 48% of the group 1 and 52% of the group 2 patients had symptoms of straining during micturition. This difference was not statistically significant.

Distribution of the study groups according to post void residual urine volume in cubic centimeters (cc)

The mean post voiding residual urine in patients with inguinal hernia was 28.6 (± 20.3) cc and in group 2 was 74.4 (± 39.8) cc. There was statistically significant difference between the post void urine volumes between the two groups.

The mean prostate volume on abdominal ultrasonography in patients with inguinal hernia was 25.88 cc and the mean prostate volume in group 2 was 35.68 cc. This difference was statistically significant.

Chart 2. Distribution of the study groups according to International Prostate Symptom Score (IPSS)

About 56% of the patients with inguinal hernia and 44% of patients with BPH had mild symptoms, 44% of the group 1 patients and 52% of group 2 patients had moderate symptoms. Only 4% in of group 2 patients had severe symptoms.

The mean IPSS score in patients with inguinal hernia was 8.32 and the mean IPSS score in group 2 patients was 9.8.

CONCLUSION

This study was undertaken to assess the correlation between Inguinal hernias and the intensity of Lower urinary tract symptoms due to Benign prostatic hyperplasia. The factors that have been found to have statistical significance in symptoms are increased frequency of micturition, urgency of micturition, incomplete emptying of the bladder and poor stream of urine. There was also a statistical significance between post voiding urine volume and prostate volume between the two groups. A significant difference was not found in IPSS scoring in patients with or without Inguinal hernias. The study has revealed a simultaneous occurrence of Inguinal hernias and has also raised an issue whether Urologists should be familiar with Inguinal hernia repair. This needs to be evaluated in depth using multiple and larger series of patients requiring specialized clinical and laboratory tools to evaluate all the parameters, which appear to be beyond the scope of this study. This study is also not without limitations. The sample size was small to generalize the results of this study. Patients must be evaluated using clinical tools and methods of examination including Digital Rectal Examination and Ultrasonography as a dictum. If surgical management is required, decision to treat both Inguinal hernia and surgery for prostatic enlargement must be considered in the same sitting. Almost 50% of patients having Inguinal hernias had symptoms of straining during micturition, which further establishes the etiology of Bladder outlet obstruction (BOO) as a contributing factor to the development of Inguinal hernias. The role of International Prostate Symptom Score (IPSS) as a clinical tool in evaluating patients having Inguinal Hernias has shown much promise but needs to be evaluated further using larger and multiple series of patients.

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