



## STUDY OF ASSOCIATION OF LOWER URINARY TRACT SYMPTOMS (LUTS) IN PATIENTS OF INGUINAL HERNIA (IH)

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**ABSTRACT** **Introduction:** The coexistence of an inguinal hernia and lower urinary tract symptoms (LUTS) is very common. If the cause of LUTS is not treated before the hernia repair, there is a high recurrence rate. The present study was aimed to study the association between the presence of inguinal hernia and lower urinary tract symptoms.

**Material and methods:** A prospective comparative study was done on 80 patients of inguinal hernia from September 2017 to August 2018. Patients were assessed for LUTS using IPSS, urine routine microscopy and culture & sensitivity, USG for PVRU and uroflowmetry.

**Results:** 55% patient had symptoms suggestive of LUTS. Among the symptomatic patients 34% had mild LUTS, 50% had moderate LUTS and 16% had severe LUTS. Most of the patients did complain of a weak stream, but only very few complained of straining.

**Conclusion:** This study concluded that majority of patients having inguinal hernia also experienced LUTS. The most common symptom of LUTS among hernia patients was weak stream. Majority of patients had moderate LUTS. Assessing the LUTS with IPSS, urine routine microscopy and culture & sensitivity, USG for PVRU and uroflowmetry helps to identify patients with prostatomegaly in symptomatic patients with IH.

**KEYWORDS :** LUTS, Inguinal Hernia, BPH

### INTRODUCTION

Lower urinary tract symptoms (LUTS) are mostly prevalent among elderly men. A number of etiologic factors have been described with the genesis of urinary symptoms. These include aging on the nervous system and bladder, metabolic derangements, changes in fluid regulation, obstruction and autonomic over activity<sup>1</sup>. LUTS can be due to mechanical obstruction to urine flow or due to bladder hypocontractility. These pathophysiologic elements are all common in the elderly and may be present alone or in combination<sup>2</sup>. The prevalence of moderate to severe LUTS in men ranges from 16.2% to 25.1%, while the prevalence of LUTS described at least 'sometimes' and at least 'often' is 72.3% and 47.9%, respectively. This prevalence increases with age, and the quality of life has reduced significantly among those with LUTS<sup>3</sup>. A variety of factors are responsible for the development of an inguinal hernia. These include obesity and work-related physical activity.

In urology practice, the coexistence of inguinal hernia and LUTS due to BPH is very common<sup>1</sup>. In both sexes, non-specific symptoms of bladder dysfunction become more common with age, probably owing to impairment of smooth muscle function and neurovesical coordination. Not all symptoms of disturbed voiding in ageing men should, therefore, be attributed to BPH causing BOO. Urologists prefer the term LUTS and discourage the use of the descriptive term 'prostatism'<sup>4</sup>.

Lower urinary tract symptoms (LUTS) include voiding symptoms (hesitancy, poor flow, intermittent stream, dribbling, sensation of poor bladder emptying, episodes of near retention) and storage symptoms (frequency, nocturia, urgency, urge incontinence, nocturnal incontinence). Several symptom scoring systems have been developed to assess the degree of symptom severity in LUTS. The most widely used scoring system is the International Prostate Symptom Score (IPSS), developed by the American Urological Association (AUA) and adopted by the World health Organization (WHO). It is a valid tool for objectively assessing patient's symptom, deciding choice of treatment for patients with LUTS and monitoring effects of any intervention procedure<sup>2</sup>. The IPSS is used to measure the severity of urinary symptoms and quality of life<sup>5</sup>. Patients with an inguinal hernia reportedly have higher IPSS than those without inguinal hernia<sup>1</sup>.

### LITERATURE REVIEW

Groin hernias are very common, and surgical treatment is usually recommended. In fact, hernia repair is the most common surgical procedure performed worldwide. In countries such as the USA, China, and India, there may easily be over 1 million repairs every year<sup>6</sup>.

Most hernias occur in males, with a male to female ratio of 6:1

The most frequent hernia is the inguinal hernia (73% of cases). Various authors all quote the following order of hernias, in decreasing frequency: inguinal (70–75%), femoral (6–17%), umbilical (3–8.5%) followed by rarer forms (1–2%).

Inguinal hernia repair was universally the commonest hernia repair, followed by umbilical, epigastric, para-umbilical, incisional and femoral, respectively.<sup>7</sup>

Urinary symptoms are frequently associated with inguinal hernias and urinary complications occur frequently following repair. The American Urological Association Symptom Score (AUASS) is a validated 7-item survey used to assess the severity of 3 storage symptoms (frequency, urgency, nocturia) and 4 voiding symptoms (feeling of incomplete emptying, intermittency, straining, and a weak stream).

The incidence of postoperative urinary retention following inguinal hernia repair is approximately 15% with the reported range from 2% to 30.0%.

A significant increase in urinary symptoms on postoperative day 2 and a reduction in symptoms below the preoperative baseline by postoperative day 30 was observed. The use of a urinary catheter was an independent predictor of elevated postoperative symptoms both on day 2 as well as day 30. Elective repair of an inguinal hernia was associated with improvement in LUTS burden at 30 days and the use of an intraoperative foley's catheter was associated with increased symptom burden at 2 and 30 days postoperatively.<sup>8</sup>

The overall prevalence of LUTS was 18.7% and increased with age (10.5% at age 30-39 years to 25.5% at age 70-79 years) but did not differ by sex or race/ethnicity. Quality of life was significantly reduced among those with LUTS. Increased severity of LUTS was associated with greater limitations of daily activities, and significant decrements in physical and mental well-being in every age, sex, and race/ethnicity category.<sup>9</sup>

The term LUTS was proposed by Paul Abrams. The increase in the prevalence of LUTS with age advances is an accepted fact. The prevalence of LUTS was 14% in France, Scotland 18%. In U.K, Sweden and U.S.A the prevalence of at least one LUTS was 72.3% for men and in India around 37%. In the study, out of the 600 men, 222 had specific diseases (37%) responsible for occurrence of LUTS (BPH 45%, stricture urethra 40%, Neurogenic 7.5%, Miscellaneous 7.5%). About 15% of total subjects (90/600) had BPH. Among 400 men who had some degree of LUTS no specific disease was found responsible

for these symptoms. Nocturia remained important symptom of LUTS in Bladder outflow obstruction.<sup>10</sup>

LUTS represent the most common clinical manifestation of BPH. Patients with IH present higher IPSS when compared with patients without IH. The incidence of IH in men undergoing prostatic surgery is 15-25%, in addition 11-30% of patients who were submitted to surgical IH repair and presented LUTS precipitate postoperative retention requiring urological intervention. Urologists should be aware of this association.<sup>11</sup>

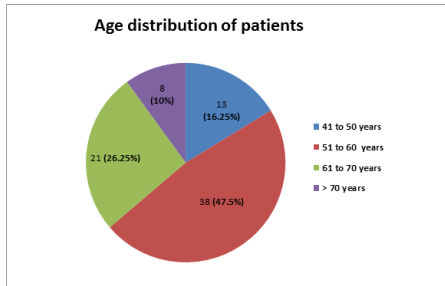
**MATERIAL AND METHOD**

A prospective comparative study was done at the department of surgery, TMMC & RC from September 2017 to August 2018, Moradabad. All patients of age more than 40 years attending the outdoor patient department with only inguinal hernia were included in the study. Patients with complicated inguinal hernia, recent history of abdominal Surgery (< 1 Year,) previous therapy for voiding dysfunction (during last 3 months) were excluded from the study. Total 80 patients with only inguinal hernia were included in the study. An informed, bilingual, written consent was obtained before including the patients as study subjects. The privacy and confidentiality was assured throughout the research.

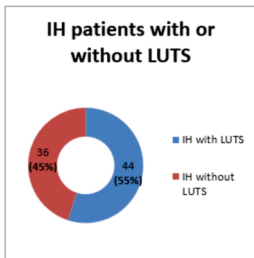
**RESULTS**

Among the sample majority of the patients (47.5%) were 51-60 years old (fig-1). Out of the sample 55% had symptoms suggestive of LUTS (fig-2). Among the symptomatic patients 34% of them had mild, 50% of them had moderate and 16% of them had severe LUTS (fig-3). Urine routine microscopy and culture & sensitivity report of inguinal hernia patients with LUTS revealed 59% of the patient with symptomatic UTI and those patients were treated according to culture and sensitivity reports (fig-4). This data shows that prevalence of UTI in inguinal hernia patients is statistically significant. Uroflowmetry report of these patients revealed 64% of patients having Qmax of 10-15ml/sec (fig-5). USG for PVRU of these patients revealed 84% of patients having <200ml of PVRU (fig-6).

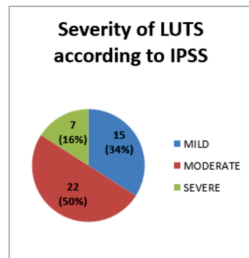
(fig-1)



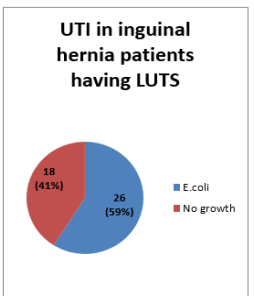
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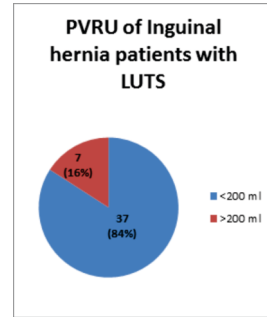
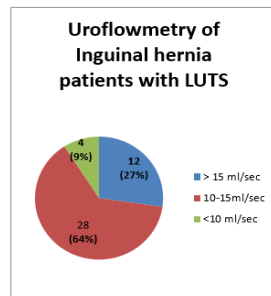
(fig-3)



(fig-4)



(fig-5)



(fig-6)

**DISCUSSION**

Aim of this study was to study the association of lower urinary tract symptoms (LUTS) in patients of inguinal hernia (IH) patients. In our study 55% of the patients with inguinal hernia also experienced LUTS. Among the symptomatic patients 34%, 50% and 16% of them had mild, moderate and severe LUTS respectively. Most of the patients complained of a weak stream, but only very few complained of straining. It is a possibility that our patients do strain to pass urine but they do not appreciate that. Another possibility is that when they have a weak stream, they eventually do strain to pass urine even though they do not realize it. Therefore, if we do not assess the LUTS objectively patients will continue to strain and there will be a high recurrence rate of hernia.

**CONCLUSION**

In this study, the most common symptom of LUTS among hernia patients was weak stream. Majority of patients had moderate LUTS. On the basis of this study, it can be concluded that if patients with inguinal hernia have complaints of Lower Urinary Tract Symptoms, they must be evaluated and the symptoms must be relieved before proceeding for hernia surgery. The complications of hernia recurrence can be prevented by early diagnosis and treatment of Lower Urinary Tract Symptoms. The major shortcoming of this study is less number of patients in the study, which must be expanded in further studies to confirm our findings.

Further studies are necessary to investigate if patients with inguinal hernia with urinary symptoms related to BPH have a higher risk to present urodynamics bladder outlet obstruction and are more suitable to BPH related complications or if the presence of LUTS predispose the development of IH.

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