

OUR STUDY OF PRE-OPERATIVELY DIAGNOSED INGUINAL BLADDER HERNIA AT A TERTIARY CARE CENTRE

Md Zaid Imbisat¹, Arshad Hasan², Tushar Saini³

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Corresponding Author:

Dr. Tushar Saini

Email: tush.alig@gmail.com

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¹ Assistant Professor, Department of General Surgery, Madhubani Medical College and Hospital, Madhubani, Bihar, India.

² Assistant Professor, Department of Urology, Patna Medical College and Hospital, Patna, Bihar, India.

³ Department of General Surgery, Rohilkhand Medical College and Hospital, Bareilly, Uttar Pradesh, India.

ABSTRACT

Background: Inguinal bladder hernia is a rare variant of inguinal hernia and its preoperative diagnosis is rare. Lack of awareness about the condition among surgeons leads to misidentification, complications and incomplete repair. This article aims to study the various presentations and subsequent evaluation to pre-operatively identify inguinal bladder hernia patients. **Material and Methods:** This study is a retrospective analysis of all the patients who were pre-operatively diagnosed as a case of Inguinal Bladder Hernia between February 2024 and November 2025 at a tertiary care centre of Eastern India. This study was done to evaluate the clinical features and pre-operative investigations of Inguinal Bladder Hernia. **Result:** During the study period a total of 11 male patients were pre-operatively diagnosed as a case of inguinal bladder hernia. Mean age of the patients was 57.54 ± 3.56 years. Inguinoscrotal swelling, inguinal pain, lower urinary tract symptoms and double voiding were predominant symptoms. USG and MCU were important diagnostic investigations. **Conclusion:** Preoperative suspicion of inguinal bladder hernia in elderly obese patients and patients presenting with lower urinary tract symptoms increases its pre-operative detection.

INTRODUCTION

Inguinal bladder hernia is a rare variant of inguinal hernia. Bladder involvement is seen in 1-4% of inguinal hernia cases, with the incidence reaching upto 10% in obese and elderly patients.^[1,2] It is usually asymptomatic.^[3] or may present with urinary frequency, urgency, and nocturia.^[4] High suspicion for inguinal bladder hernia in obese and elderly patients along with incidental imaging finding is the key to diagnosis.

Age related factors such as bladder outlet obstruction, chronic urinary obstruction, decreased bladder tone and pelvic floor weakness are known risk factors.^[5] Advanced cases may characteristically present with two-stage micturition with complete bladder emptying achieved on scrotal compression.^[6]

Its preoperative diagnosis is rare and intra-op identification mostly a surgical surprise.^[7] Lack of awareness about the condition among surgeons leads to misidentification, complications and incomplete repair.

This article aims to study the various presentations and subsequent evaluation to pre-operatively identify inguinal bladder hernia patients.

MATERIALS AND METHODS

This study is a retrospective analysis of all the patients who were pre-operatively diagnosed as a case of Inguinal Bladder Hernia between February 2024 and November 2025 at a tertiary care centre of Eastern India.

Aims and Objectives: This study was done to evaluate the clinical features and pre-operative investigations of Inguinal Bladder Hernia.

Only adult male patients were included in this study. Female patients and patients of age less than 18 years were excluded from this study.

Patients presenting with inguinoscrotal swelling in our OPD were evaluated. Detailed clinical history and examination was done. As per our institutional protocol ultrasonography of inguinoscrotal region was done in all the patients. During ultrasonography there was a special emphasis to identify the content

of the inguinoscrotal swelling. In a patient with clinically diagnosed inguinal hernia possibility of urinary bladder as a content was kept in mind in elderly patients, obese patients, patients with lower urinary tract symptoms and recurrence of hernia. In these patients their detailed history of lower urinary tract symptoms were taken. Any history of double voiding (suggestive of inguinal bladder as hernia content) was also asked. At the time of examination any sense of urinary urgency on palpation of the swelling was noted. USG KUB was also done to look for any hydronephrosis, hydroureter, bladder wall thickness, prostate size, prevoid and post void urinary bladder volumes. MCU was done in patients with severe LUTS and inguinal hernia to look for herniation of urinary bladder as a content. Cystoscopy was also done in known cases of BPH who developed inguinal hernia and worsening of their lower urinary tract symptoms. CT scan was reserved for only complicated cases based on clinical judgement.

RESULTS

During the study period a total of 11 male patients were pre-operatively diagnosed as a case of inguinal bladder hernia. Mean age of the patients was 57.54 ± 3.56 years. Mean BMI of the patients was 30.64 ± 1.12 kg/m². All the patients presented to us with inguinal or inguinoscrotal swelling. Eight patients had severe lower urinary tract symptoms and three patients had moderate lower urinary tract symptoms. Three patients in our study were taking medical treatment for BPH from elsewhere with worsening of their lower urinary tract symptoms after development of inguinoscrotal swelling. Eight patients had symptom of double voiding with second phase of voiding after manual compression of the swelling. In all the patients there was a sense of urinary urgency on palpation of the swelling at the time of examination. USG of inguinoscrotal region was done in all the patients and in eight patients it detected urinary bladder hernia. MCU was done in all the patients and it detected inguinal urinary bladder hernia in all the patients.

Table 1: Characteristics of patients of Inguinal bladder hernia

1	Age(mean \pm SD in years)	57.54 \pm 3.56
2	BMI(mean \pm SD in kg/m ²)	30.64 \pm 1.12
3	Inguinal swelling(n)	11
4	Inguinal pain(n)	7
5	LUTS(n)	9
6	Double voiding(n)	8
7	Acute urinary retention(n)	0
8	History of BPH(n)	3
9	Positive USG(n)	8
10	Positive MCU(n)	11

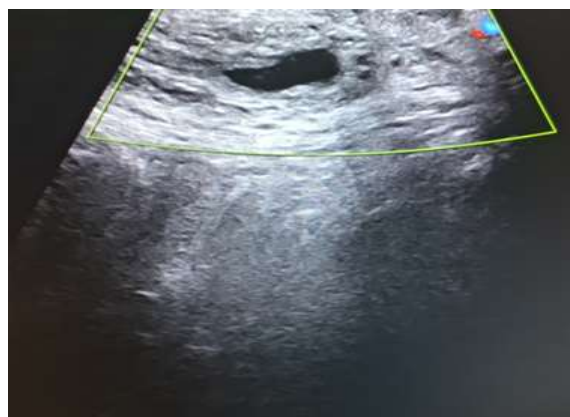


Figure 1: USG inguinoscrotal region showing herniation of urinary bladder



Figure 2: Micturating cystourethrogram showing herniation of urinary bladder

DISCUSSION

Inguinal bladder hernia (IBH) was first described by Levine in 1951 which he termed as "scrotal

cystocele”.[8] Bladder hernia is an infrequent finding, mostly seen in elderly males, occurring in approximately 10% patients.

In this study mean age of patients is 57.54 ±3.56 years. The age related incidence of IBH highlights the condition’s association with other geriatric conditions like bladder outlet obstruction, decreased bladder tone, and weakening of pelvic floor musculature.[9]

The symptom profile of bladder hernia in this age group usually overlaps with more common, lower urinary tract symptoms (LUTS), thus delaying the correct diagnosis. Highly significant two stage micturition, the “Mery’s sign” may clinch the diagnosis.[10] In this study as well patients had lower urinary tract symptoms and three patients were already on medical management of BPH. High specificity of symptom of double voiding is also noted in this study.

Different complications include urinary tract infections, acute renal failure and bladder wall infarction.[11] However in this study all the patients had normal renal function and in no case bladder wall infarction was noted.

Diagnostic modalities specific to IBH depends on the degree of suspicion for the same as hernia itself is a clinical diagnosis. Inguinal hernia patients presenting with above atypical complaints should be investigated for IBH under high suspicion. Diagnostic modality includes ultrasonography as the primary modality. “Second eye ultrasound” is a novel approach performed after placing urinary catheter and confirming the position of catheter in herniated bladder.[11] In this study eight patients had positive findings on USG of inguinoscrotal region.

Micturating cystourethrogram (MCU) is gold standard for diagnosing IBH.[12] In this study as well all the pre-operatively diagnosed patients had positive findings on MCU.

Computed tomography (CT) is highly accurate and essential imaging modality for surgical planning. “Pointing sign” with angulation of bladder base anteriorly and inferiorly towards the hernia apex is highly specific for IBH.[13]

Incidence of diagnosing an IBH preoperatively has increased from 10% in 2003 to approximately 60% in recent reports owing to increased use of imaging in the initial diagnosis of IBH.[14] In this study also due to appropriate work up of patients in the suspicious group of patients we were able to increase the preoperative identification of inguinal bladder hernia cases.

Surgical management for IBH is similar to other commonly performed procedures for inguinal hernia repair with few special technical considerations for bladder hernia component. Special technical considerations include careful medial dissection to avoid bladder injury, prevention of urine leak, assessment for bladder viability and increased incidence of mesh related complications. Open hernia technique accounts for approximately 80% IBH cases.[15] Open and laparoscopic hernia repair

techniques are equally efficacious when IBH is diagnosed preoperatively.

CONCLUSION

Inguinal bladder hernia is a rare condition and its pre-operative identification reduces intra-operative complications. Preoperative suspicion in elderly obese patients and patients presenting with lower urinary tract symptoms increases its pre-operative detection.

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