



A CORRELATION OF BPH RELATED LOWER URINARY TRACT SYMPTOMS IN PATIENTS WITH INGUINAL HERNIA

General Surgery

Dr Mahendra Lodha	Assistant Professor Dept of General Surgery, All India Institute of Medical Sciences, Jodhpur
Dr Suresh Kumar Rulaniya*	Senior Resident Dept of General Surgery, All India Institute of Medical Sciences, Jodhpur*Corresponding Author
Dr Ashok Puranik	Professor and Head Dept of General Surgery, All India Institute of Medical Sciences, Jodhpur
Dr Chhanwar Lal	Senior Resident Dept of General Surgery, All India Institute of Medical Sciences, Jodhpur

ABSTRACT

AIM - To correlate presence of lower urinary tract symptoms related to BPH in patients with inguinal hernia.

MATERIALS AND METHODS-This Cross sectional observational study was performed at department of General surgery of a tertiary care hospital with sample size 100 and 18 months durations.

RESULTS- Non-Significant correlation was seen between operative findings of hernia and mean peak flow rates ($p=0.541$), IPSS ($p=0.831$), prostatomegaly ($p=0.63$).

CONCLUSION- Patient with inguinal hernia had similar LUTS symptom scores (IPSS) and similar uroflowmetric parameters compared to general population. There was no statistically significant association between configuration of inguinal hernia and other parameters like grades of prostatomegaly, IPSS scores and mean peak flow rates.

KEYWORDS

INTRODUCTION

We have progressed far ahead from the simple concept of increased intra-abdominal pressure overwhelming a weak abdominal wall to the complex malady that calls upon several basic sciences to explain the multitudinous facets, though one final common pathway, its pathophysiology. In 1999, Pans and Pierrard, using biomechanics and immunochemistry, concluded that "the collagen framework of the transversalis Fascia was modified mainly in the direct hernia group, associated with increased vascularity and cellularity¹. The target organ of all the known injurious stimuli is the collagen matrix, which is also related to the aging process in bladder and others organs.

Abdominal straining is assumed to be a symptom of bladder outflow obstruction (BOO) too and straining during voiding in patients with BOO is believed to be an initiating cause of inguinal hernia². LUTS represent the most common clinical manifestation of BPH³. By straining, men with BOO are presumed to be able to augment urinary flow. To add to the controversy, Jensen et al noted that half of the patients who claimed not to strain during voiding did actually show objective evidence of straining during micturition⁴.

Our current understanding of the physiology of the urethra is that the urodynamic behavior of the outlet of the bladder is determined by the principles governing flow through distensible tubes. There is a flow-controlling zone, which in prostatic obstruction is located in the prostatic urethra, where it is under the influence of abdominal pressure⁴. Obstructive uropathy attributable to prostatism and hernia, though a teleologically pleasing correlation, is a poorly investigated factor⁵. Studies to correlate the symptom of straining during voiding in patients with BPH and their correlation with development of hernia in elderly males are sparse in literature. Furthermore, its effect in the elderly man presenting with lower urinary tract symptoms (LUTS) has not yet been systematically established in the world and also in India.

Hence, we conducted this study to find out the correlation between the BPH, Inguinal Hernia and the intensity of LUTS related to BPH which quantified through the International Prostate Symptom Score (IPSS).

AIM

To correlate presence of lower urinary tract symptoms related to BPH in patients with inguinal hernia.

OBJECTIVES

- To evaluate the intensity of lower urinary tract symptoms (LUTS) related to BPH in inguinal hernia patients using uroflowmetry analysis.
- To correlate post voiding residual urine volume (PVR), prostate volume (PV), IPSS & physical examination findings with duration and configuration of inguinal hernia.

MATERIALS AND METHODS

This cross sectional observational study was performed in Department of general surgery at tertiary care hospital.

Duration of study: 18 months

Study population: Males aged 50 years or more undergoing treatment for inguinal hernia at a tertiary care hospital.

Sample size: 100 patients

Inclusion criteria:

- Males aged 50 years or more undergoing treatment for inguinal hernia

Exclusion criteria:

- Age < 50 yrs
- UTI (microbiologically proven)
- Urethral stricture & phimosis
- Malignancies of LUT
- Recent history of abdominal surgery (< 1 Year)
- Patients with recent urethral manipulation (< 3 Months)
- Patients with confounding factors like chronic constipation and chronic cough

Methodology:

Male Patients with inguinal hernia aged 50 yrs or more constituted the study group of this cross-sectional study. All patients were assessed initially with IPSS questionnaire followed by clinical examination. They also underwent routine hematological and biochemical investigations as part of pre-op evaluation for hernia repair. A tranabdominal Sonography was done to evaluate prostate volume and post voidal residue in the study group. Further, uroflowmetry was done in study group to assess the peak flow rate irrespective of symptoms. Intra-operative finding of patients undergoing surgery for IH was documented and findings were recorded for possible correlation.

Correlations based on objectives of the study were drawn on compilation of data.

RESULTS AND DISCUSSION

Baseline characteristics;

Variable	Min	Max	Mean	SD
Age (years)	50.00	77.00	63.5300	6.72768
IPSS	2.00	28.00	13.1300	7.07486
Duration(months)	1.00	168.00	13.0650	17.86900
PV(grams)	12.10	52.00	27.5250	7.36629
PVR(ml)	3.20	380.00	99.0370	102.76969
Q.max(ml/s)	3.00	28.00	15.2600	6.11608
S. PSA (ng/ml)	.02	1.71	.8630	.32876

Distribution of population;

Variable	Levels	%
LUTS	Mild (< 8)	25
	Moderate (8-19)	52
	Severe (>19)	23
Q max(ml/s)	<10	26
	10-15	22
	16-20	29
	>20	23
Prostate Volume	Not Significant	14
	Significant	86
Post Void Residue	Not Significant	66
	Significant	34

IPSS Scores V/s Intra- Op Findings

IPSS Scores	Intra Op Finding			Total
	Direct	Indirect	Pantaloon	
Mild	14	8	3	25
	56.00%	32.00%	12.00%	100.00%
Moderate	32	15	5	52
	61.53%	28.84%	9.61%	100.00%
Severe	13	9	1	23
	56.52%	39.13%	4.34%	100.00%
Total	59	32	9	100
	59.00%	32.00%	9.00%	100.00%
Chi Square Test: DF = 4	1.4709			P= 0.831

However, the association between intra operative findings and severity of IPSS symptomatology was found to be statistically not significant (P value = 0.831).

Q Max V/s Intra- Op Findings

Q Max	Intra Op Finding			Total
	Direct	Indirect	Pantaloon	
Severe obstruction (rate < 10 ml/sec)	15	9	1	25
	60.0%	36.6%	4.00%	100.00%
Moderate obstruction (rate ≥10 - <20 ml/s)	32	13	6	52
	61.53%	25.00%	11.53%	100.00%
Mild obstruction (rate > 20 ml/sec)	2	10	2	23
	8.69%	43.47%	8.69%	100.00%
Total	59	32	9	100
	59.00%	32.00%	9.00%	100.00%
Chi Square Test: DF = 4	3.0956			P= 0.541

However, the association between intra operative findings and mean peak flow rates on uroflowmetry was found to be statistically not significant (P value = 0.541).

Prostatomegaly V/s Intra- Op Findings

Prostatomegaly Grade	Intra Op Finding			Total
	Direct	Indirect	Pantaloon	
Grade 1	17	11	1	29
	58.60%	37.90%	3.40%	100.00%
Grade 2	28	16	6	50
	56.00%	32.00%	12.00%	100.00%
Grade 3	14	5	2	21
	66.70%	23.80%	9.50%	100.00%
Total	59	32	9	100
	59.00%	32.00%	9.00%	100.00%
Chi Square Test: dF = 4	Value = 2.545			P = 0.630

However, the association between intra operative findings and grades of prostatomegaly was found to be statistically not significant (P value = 0.630).

While comparing relationship between inguinal hernia and LUTS (N= 100), Senturk AB et al found that the mean age of study population was 61.45 ± 8.33 years, the mean IPSS scores were 15.24 ± 8.19, mean peak flow rate (Q max) on uroflowmetric analysis was 13.40 ± 5.28 ml/sec, and mean prostate volume (PV) was 44.30 ± 13.96 ml6. Our results were found to be similar with respect to age, IPSS scores and mean peak flow rates with values of 63.5 ± 6.72 years, 13.13 ± 7.07 and 15.26 ± 6.11 ml/sec respectively. Our study reveals lower mean values of prostate volumes (27.52 ± 7.36) ml in the study population. This may be attributed to lower prostate volumes found in Asian population compared to other ethnicities7.

CONCLUSION

Our study to correlate presence of LUTS symptoms related to BPH in patients with inguinal hernia concludes the following:

- (a) Patient with inguinal hernia had similar LUTS symptom scores (IPSS) and similar uroflowmetric parameters compared to general population.
- (b) There was no statistically significant association between configuration of inguinal hernia and other parameters like grades of prostatomegaly, IPSS scores and mean peak flow rates. Considering the above, there is inadequate evidence to prove the hypothesis that excessive straining due to LUTS would predispose to genesis of hernia in aging patients.

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