

A study to correlate IPSS score and association of prostatomegaly in patients with inguinal hernia

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Abstract

Background: Inguinoscrotal swellings are the most common presenting complaint in the surgical out patient department. Chronic straining during micturition can precipitate inguinal hernia in adults. Prostatomegaly is an important cause of bladder outlet obstruction in males. Chronic straining due to benign prostatic hyperplasia is considered as an etiological factor for inguinal hernia in elderly male population. The occurrence of groin hernia and lower urinary tract symptoms associated with prostatomegaly are related to age.

This study is aimed to find out whether prostatomegaly is a significant risk factor for developing inguinal hernia in males.

Aim: To correlate IPSS score with clinical and radiological prostatomegaly in cases with inguinal hernia.

Methods: It is a cross-sectional comparative study to correlate presence of prostatomegaly in 50 male patients aged more than 50 years admitted with inguinal

hernia to R.L Jalappa Hospital, Kolar from March 2020 to August 2020. In this study IPSS Score, was correlated with clinical prostatomegaly and Ultrasonographic prostate volume.

Results: 50 male patients were included in the study. Mean age was found to be 63.44 years. Right sided hernia was more prevalent than left side.

42% patients had IPSS score >8, 46% had prostate volume >20cc. IPSS was significantly related to ultrasonographic prostate volume and clinical prostatomegaly.

Interpretation & conclusions: This study showed significant association between severity of symptomatic prostatomegaly and development of hernia. We can also conclude that IPSS score is a useful tool to assess prostatomegaly objectively and in turn as a predictor for development of inguinal hernia.

Keywords: Inguinal hernia, LUTS, IPSS score, Prostatomegaly.

Introduction

Inguinoscrotal swellings are the most commonly presenting complaints in the surgical out patient department. Prostate gland enlargement is an important cause of bladder outlet obstruction in males leading to chronic straining on micturition. Inguinal hernia can be precipitated by chronic straining for micturition^{1,2}. In elderly males with inguinal hernia symptomatic prostatomegaly are found in high frequency. Chronic straining due to prostatomegaly has been considered an etiological factor for inguinal hernia in elderly male population since time immemorial^{4,5}. But some of the studies showed that their occurrence together is considered a chance co-existence rather than cause and effect^{3,6,7,8}. This study is aimed to find out whether prostatomegaly is a significant risk factor for developing inguinal hernia in males. Also the aim was to determine if IPSS score was an effective tool to objectively assess prostatomegaly and its correlation with clinical and radiological prostatomegaly.

Aims & Objectives

To correlate IPSS score with clinical and radiological prostatomegaly in cases with inguinal hernia.

Material & Methods

It is a cross-sectional study conducted on 50 male patients aged more than 50 years admitted with inguinal hernia to R.L Jalappa Hospital, Kolar from March 2020 to August 2020.

Inclusion criteria

1. Male sex
2. Age more than 50 years,
3. Uncomplicated inguinal hernia.

Exclusion criteria

1. Female sex,
2. Age \leq 50 years,

3. Known case of connective tissue disorders,
4. Known case of prostatomegaly on treatment
5. Presence of complications of hernia, such as irreducibility, strangulation or obstruction.

Informed written consent was obtained from each of the patients.

For this study three independent variables were considered to estimate prevalence of prostatomegaly among the patients of inguinal hernia – IPSS Score, Clinical prostatomegaly, Ultrasonographic prostate volume. The IPSS score was correlated with clinical prostatomegaly by digital rectal examination and prostate volume (based on Ultrasound).

Statistical Analysis

Data was analyzed using SPSS 22 version software.

Categorical data was represented in the form of Frequencies and proportions.

Univariate analysis of the association between inguinal hernia and benign prostatic hyperplasia was done for each of the three variables separately.

p value (Probability that the result is true) of <0.05 was considered as statistically significant after assuming all the rules of statistical tests.

Results

The study was conducted over a period of 6months from March 2020 to August 2020. A total no of 50 male patients were selected, all aged between 51years and 85years.

The mean age of the subjects was 63.44years.

Age Distribution

Age	51-60	61-70	71-80	>80
Frequency	22	19	8	1

Table 1: Age Distribution of Study Population

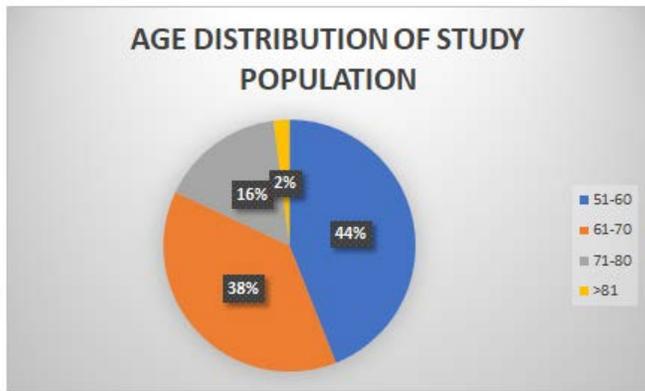


Figure 1: Age Distribution of Study Population

Type of Hernia

Among the subjects included in the study, direct inguinal hernia was more prevalent (52%) than indirect inguinal hernia (48%).

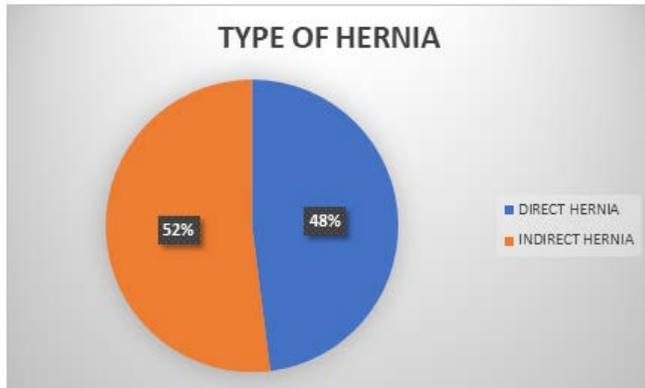


Figure 2: Type of Hernia

Clinical Prostate Grade Based On Digital Rectal Examination

Digital rectal examination was performed on all the subjects. Among them 40% did not have an enlarged prostate gland clinically. Whereas 30% of the subjects were found to have Grade 2 prostatomegaly, 20% Grade 3 prostatomegaly and only 10% had Grade 1 prostatomegaly.

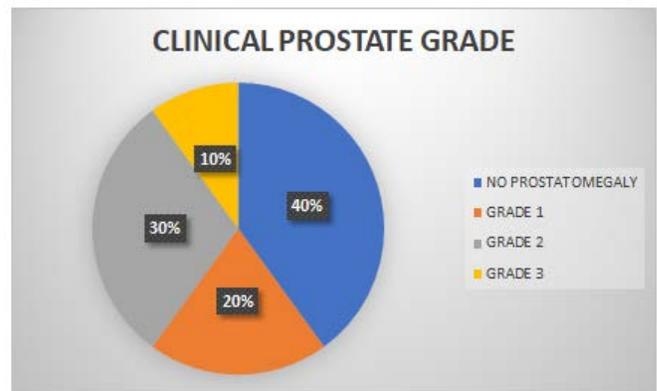


Figure 3: Clinical Prostate Grade

International Prostate Symptom Score

Among the study population, 42% of the cases had IPSS >8. The mean IPSS score was 8.42. 58% were mildly symptomatic (IPSS 0-7), 24% were moderately symptomatic (IPSS 8-18) and 18% was severely symptomatic (IPSS >19) at the time of admission.

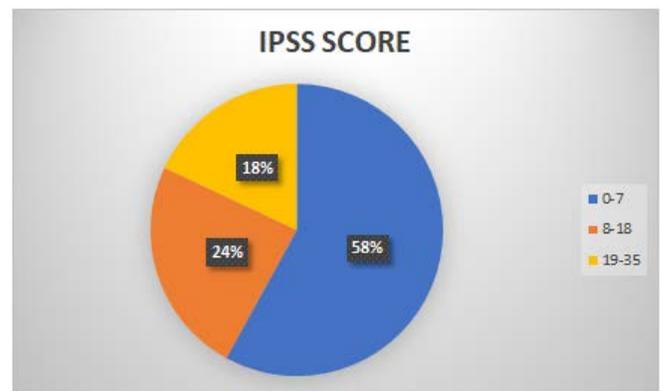


Figure 4: IPSS Score

Prostate Volume

Prostate volume was assessed in all of the study population by ultrasound. Among cases, 54% subjects were having prostate volume >20cc and post void residue >50cc (radiological prostatomegaly) and 46% were having prostate volume ≤ 20cc. the mean prostate volume was found to be 24.1cc.

Therefore 23 of 50 cases were taken as having significant benign prostatic hyperplasia.

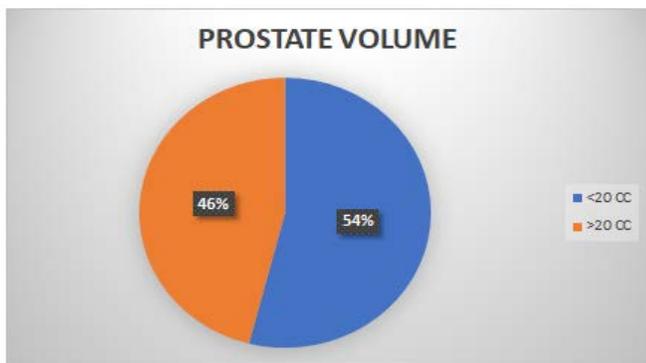


Figure 5: Ultrasonographic Prostate Volume
Correlation of IPSS Score and Clinical Prostatomegaly

Based on our study, IPSS score of patients with symptomatic prostatomegaly correlated with 36% patients with clinical prostatomegaly (P value= 0.001).

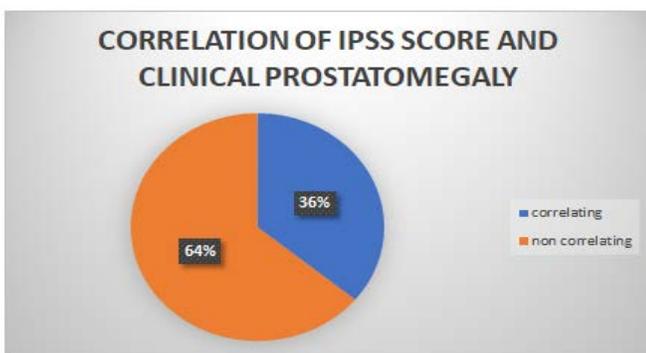


Figure 6: Correlation of IPSS Score and Clinical Prostatomegaly

Correlation of IPSS Score and Prostate Volume

Among the study population IPSS score was correlating with USG b

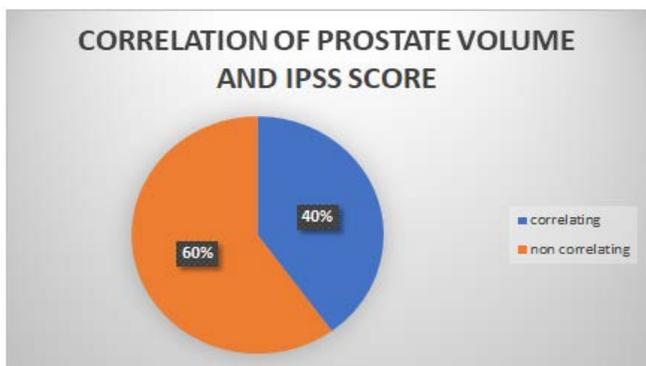


Figure 7: Correlation of Prostate Volume and IPSS Score

Discussion

A hernia is a protrusion of a viscus or part of a viscus through an abnormal opening in the wall of its containing cavity⁹.

Prostate is an inverted cone shaped gland located between the vesical neck of the bladder and the apex of the urogenital diaphragm. Benign prostatic hyperplasia (BPH) is a pathologic process that contributes to, but is not the sole cause of, lower urinary tract symptoms (LUTS) in aging men. This nonmalignant overgrowth of the prostatic tissue ultimately leads to bladder outlet obstruction (BOO) which in turn leads to the complications including Inguinal Hernia(IH) and Lower urinary tract symptoms (LUTS)².

Incidence of hernia have a bimodal distribution in males with peaks before 1 year of age and then again after 40 years of age. Indirect inguinal hernias are the most common hernias in both men and women; a right-sided predominance exists.

Inguinal hernias may be considered congenital or acquired diseases. A number of studies have attempted to delineate the precise cause of inguinal hernia formation; however the risk factors are likely multifactorial.

IPSS score is a questionnaire which helps us to predict the severity of LUTS in patients with prostatomegaly. It offers better compliance as it is an objective and non invasive tool for assessment.

Our study considered 50 patients with inguinal hernia. Among them 23(46%) had prostatomegaly (>20cc) detected on ultrasound, 40% had clinical prostatomegaly. IPSS score was elevated in hernia patients with symptomatic prostatomegaly.

Univariate analysis of clinical prostatomegaly with respect to IPSS score was found to be significantly related (P value <0.0001).

Thus IPSS score can be used as an effective tool to objectively assess prostatomegaly and in turn predict development of inguinal hernia in males.

Conclusions

This study showed significant association between severity of symptomatic prostatomegaly and development of hernia. We can also conclude that IPSS score is a useful tool to assess prostatomegaly objectively and in turn as a predictor for development of inguinal hernia.

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