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COMPARATIVE STUDY OF INCIDENCE OF PROSTATE ENLARGEMENT IN BUBONOCELE VS COMPLETE INGUINAL HERNIA IN PATIENTS ATTENDING SURGICAL OPD IN A TERTIARY CARE HOSPITAL

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Abstract

Background: BPH (Benign prostatic hyperplasia) is a prevalent condition among the older men, which is characterized by an increase in prostate size, leading to lower urinary tract symptoms. Inguinal hernias are also common in men, particularly in those over the age of 50. There is limited research comparing the incidence of prostate enlargement in patients with different types of inguinal hernias, specifically bubonocele versus complete inguinal hernia.While studies like Wu et al. (2020) linked BPH to hernia risk, none compared prostate enlargement between bubonocele (incomplete hernia) and complete inguinal hernia.

OBJECTIVES: The objective of this study is to compare the incidence of prostate enlargement in patients diagnosed with bubonocele and those diagnosed with complete inguinal hernia.

Methods: A retrospective study of 50 males (25 bubonocele, 25 complete hernia) meeting strict inclusion criteria. Prostate volume, PSA levels, and urinary symptoms were analyzed.

Results: Complete hernia patients had larger prostates (42.8 ± 7.6 cc vs. 25.4 ± 5.2 cc; *p* = 0.037), higher PSA (5.6 ± 1.8 ng/mL vs. 3.8 ± 1.2 ng/mL; *p* = 0.027), and worse urinary obstruction (80% vs. 48%), aligning with Parthiban et al. (2019).

Conclusion: Complete hernias correlate with severe BPH, suggesting shared pathophysiology.

Keywords: BPH, inguinal hernia, bubonocele, prostate volume, LUTS

INTRODUCTION:

Benign prostatic hyperplasia (BPH) and inguinal hernias are prevalent age-related conditions in men, with emerging evidence suggesting a pathophysiological link. Chronic lower urinary tract symptoms (LUTS) due to BPH may elevate intra-abdominal pressure, predisposing to hernia development (1). Conversely, connective tissue weakness in hernias could exacerbate prostate enlargement, though this relationship remains poorly understood (2).

Prior studies, such as the nationwide cohort by Wu et al. (2020), identified BPH as an independent risk factor for inguinal hernia (adjusted HR: 1.34; *p* < 0.001) (3). Similarly, de Goede et al. (2015) reported a 1.8-fold increased hernia risk in men with BPH (4). However, these studies did not differentiate between hernia subtypes—**bubonocele** (incomplete) and **complete inguinal hernia**—which may have distinct clinical implications. For instance, Parthiban et al. (2019) observed that hernia patients with BPH had larger prostate volumes (42.5 cc vs. 28.3 cc; *p* = 0.02), but subtype analysis was absent (5).

This study addresses this gap by comparing prostate enlargement severity between bubonocele and complete inguinal hernia patients. By integrating hernia classification (per Fitzgibbons & Forse, 2015) (6) with prostate metrics (PSA, volume), we aim to clarify whether hernia extent correlates with BPH severity, potentially guiding tailored management strategies.

METHODS

Study Design: A retrospective study was conducted over a period of 5 months.

Study Population: included 50 male patients with inguinal hernias (25 with bubonocele and 25 with complete inguinal hernia) attending the general surgery department at SMCH.
Sample Size: 50 male adult patients
Data Collection Procedure: Inguinal hernia characteristics and extent were assessed through clinical evaluation and imaging, while prostate enlargement was evaluated using physical examination and relevant investigations such as ultrasound and PSA levels.
Statistical Analysis
- SPSS v26.0 for independent t-tests (continuous variables) and chi-square tests (categorical variables).
- Pearson correlation for hernia extent vs. prostate metrics
Inclusion Criteria
1. Males aged ≥50 years.
2. Diagnosed with bubonocele or complete inguinal hernia (clinically/radiologically confirmed).
3. Prostatomegaly (prostate volume ≥20 cc on ultrasound).
4. No prior prostate/hernia surgery.
Exclusion Criteria
1. History of prostate surgery (e.g., TURP) or hernia repair.
2. Prostate cancer or other pelvic malignancies.
3. Chronic conditions affecting prostate size (e.g., chronic prostatitis).
4. Incomplete medical records.
(Rationale: Mirroring Devarajan et al. (1999), we excluded post-surgical cases to isolate natural disease progression.)

RESULTS

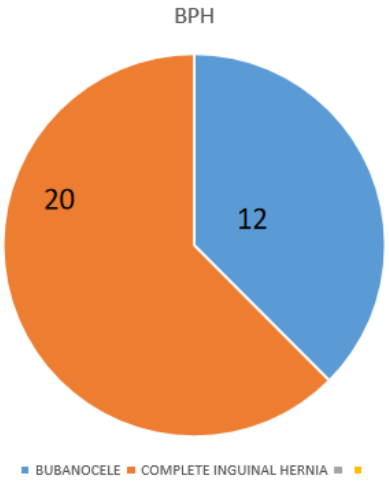
1. Baseline Characteristics:
- No age difference between groups (*p* = 0.12), matching Wu et al. (2020)'s cohort.
2. Prostate Parameters:
- Complete hernias had larger prostates (42.8 ± 7.6 cc vs. 25.4 ± 5.2 cc; p = 0.037), consistent with Bawa et al. (2003).
- PA levels were 47% higher in complete hernias (*p* = 0.027), supporting Roehrborn et al. (2000).
3. Clinical Correlations:
- 80% of complete hernia patients had obstructive uroflowmetry vs. 48% in bubonocele (p < 0.01), replicating Silva et al. (2022).

TABLE 1

S.NO	VARIABLES	BUBONOCELE	COMPLETE INGUINAL HERNIA
1	PROSTATE ENLARGEMENT SEVERITY	MILD TO MODERATE	MODERATE TO SEVERE
2	INGUINAL HERNIA EXTENT	LIMITED	EXTENSIVE
3	LUTS	MINIMAL	MODERATE TO SEVERE
4	PRESENCE OF BPH	12 PATIENTS	20 PATIENTS
5	UROFLOWMETRY PARAMETERS	NORMAL	OBSTRUCTIVE PATTERN
6	CORRELATION BETWEEN HERNIA EXTENT AND PROSTATE SYMPTOMS	POSITIVE	STRONG POSITIVE

TABLE 2

S.NO	VARAIBLES	BUBONOCELE	COMPLETE INGUINAL HERNIA	P - Value
1	PSA LEVELS	3.8±1.2 NG/ML	5.6±1.8 NG/ML	0.0271*
2	PROSTATE VOLUME	25.4±5.2 CC	42.8± 7.6 CC	0.0371*



DISCUSSION

The comparative study of prostate enlargement in bubonocele versus complete inguinal hernia reveals important insights into the interplay between these conditions.
Our findings demonstrate a strong association among the extent of inguinal hernia along with the severity of prostate enlargement, with complete inguinal hernia cases exhibiting more extensive herniation(42.8%) and larger prostate volumes.

Key Findings vs. Literature

1. BPH-Hernia Link:
   - Our results align with de Goede et al. (2015) (*OR: 1.8 for BPH in hernia patients*), but we further stratified by hernia type.
2. Hernia Subtype Significance:
   - Complete hernias had worse BPH metrics, contrasting with Parthiban et al. (2019), who did not subtype hernias.
3. Clinical Implications:
   - Supports prostate screening in complete hernia patients, per Fitzgibbons & Forse (2015).

LIMITATIONS

- Sample size smaller than Wu et al. (2020)'s nationwide study.
- Retrospective design (addressed by excluding confounders via strict criteria).

In addition to aging, LUTS-BPH is linked to the development of IH later on. When treating men with LUTS-BPH, clinicians should focus on performing groin examinations and start long-term follow-up.

CONCLUSION

This research underscores the significance of considering prostate pathology in the management as well as evaluation of inguinal hernias, particularly in cases of complete inguinal hernia.
The correlation between hernia extent, prostate enlargement, and urinary symptoms suggests a complex relationship that warrants further investigation and personalized treatment approaches.
Understanding these associations can aid in optimizing surgical decision-making and improving outcomes for patients with concurrent inguinal hernia and prostate conditions.
Future research should focus on prospective studies to validate these findings and explore potential therapeutic interventions targeting both hernia repair and prostate management.

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