Magna Scientia Advanced Research and Reviews

eISSN: 2582-9394

Cross Ref DOI: 10.30574/msarr

Journal homepage: https://magnascientiapub.com/journals/msarr/

(RESEARCH ARTICLE)

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Understanding prostatic lesions: A comprehensive overview of histopathological patterns from Jos University Teaching Hospital, Plateau State, Nigeria over the First Decade of this Millennium

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Magna Scientia Advanced Research and Reviews, 2025, 14(01), 160-172

Publication history: Received on 16 May 2025; revised on 23 June 2025; accepted on 25 June 2025

Article DOI: https://doi.org/10.30574/msarr.2025.14.1.0077

Abstract

Objectives: This study aimed to evaluate the histopathological patterns of prostatic lesions at Jos University Teaching Hospital (JUTH) from 2000 to 2009 and compare these findings with previous studies to identify trends in prostatic diseases.

Method: A retrospective analysis was conducted on 1,450 prostatic specimens received at JUTH during the study period. Histopathological examination was performed using standard techniques, and lesions were classified according to World Health Organization (WHO) criteria. Data on age distribution and lesion types were collected and analyzed.

Results: Prostatic lesions constituted 6.3% of the 22,952 surgical specimens reviewed. The majority (70.9%) were diagnosed as Nodular Hyperplasia (NH), followed by Cancer of the Prostate (CAP) at 26%, and High-Grade Prostatic Intraepithelial Neoplasia (HGPIN) at 2.8%. The NH to CAP ratio was 2.73:1. Adenocarcinoma was the predominant cancer type (96%), with most being well-differentiated (67.7%). The mean age for NH and CAP was in the seventh decade, while HGPIN peaked in the eighth decade. Gleason scores indicated that combined scores of 4 were most frequent (35.4%).

Conclusion: The study confirms that prostatic lesions, particularly CAP, are common in North Central Nigeria, with an upward trend in incidence. NH remains the most prevalent lesion, while adenocarcinoma is the most common malignancy. These findings highlight the need for improved diagnostic techniques and increased public awareness regarding prostatic diseases.

Keywords: Prostate Cancer; Nodular Hyperplasia; High-Grade Prostatic Intraepithelial Neoplasia (HGPIN); Gleason Grading; Prostatic Lesions; Comparative retrospective Study

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1. Introduction

Prostatic lesions, including benign and malignant conditions, represent a significant source of morbidity and mortality among adult males globally. Prostate cancer (CAP) has emerged as the most prevalent malignancy in men, with its incidence steadily increasing, particularly in developing countries, including Nigeria (1,2). The spectrum of prostatic diseases encompasses a range of histopathological patterns, including benign prostatic hyperplasia (BPH), prostatic intraepithelial neoplasia (PIN), and various forms of prostate cancer, notably adenocarcinoma (3,4).

Previous studies have highlighted the predominance of benign lesions, such as nodular hyperplasia, which accounts for a significant proportion of prostatic specimens, often coexisting with inflammatory conditions like prostatitis (5,6). However, the incidence of prostate cancer has been reported to be on the rise, with studies indicating that it constitutes a substantial percentage of male malignancies in Nigeria (4,7). Notably, the histopathological patterns of these lesions can vary significantly based on geographical and demographic factors, necessitating localized studies to understand their prevalence and characteristics.

Despite the wealth of information available, there remains a gap in the literature regarding the contemporary histopathological patterns of prostatic lesions in Nigeria, particularly in the North Central region. The last comprehensive review of prostatic lesions at Jos University Teaching Hospital (JUTH) was conducted a decade before this comparative retrospective study (8), leaving a critical need for updated data to inform clinical practice and improve public health strategies.

Aims and objectives

This study aims to fill this gap by providing a further ten-year retrospective analysis of the histopathological patterns of prostatic lesions at JUTH from January 2000 to December 2009. The specific objectives of this study are to:

- Determine the histopathological patterns of prostatic lesions as classified by the World Health Organization (WHO).
- Compare the findings with previous studies conducted at the same institution and other centers in Nigeria and beyond.
- Assess the age distribution and frequency of various prostatic lesions within the study population.
- Evaluate the prevalence of high-grade prostatic intraepithelial neoplasia (HGPIN) in the analyzed specimens.
- Document and reaffirm the histopathological patterns of prostatic lesions at JUTH to serve as a benchmark for future research on prostatic diseases.

2. Materials and Methods

2.1. Study Design and Setting

This study was a ten-year comparative retrospective analysis conducted at the Jos University Teaching Hospital (JUTH), a tertiary healthcare facility located in Jos, Plateau State, Nigeria. The histopathology department at JUTH serves as a referral center for various hospitals across the North Central region of Nigeria, providing a comprehensive range of diagnostic services.

2.2. Participants and Materials

The study involved the review of prostatic specimens received at the histopathology department from January 2000 to December 2009. A total of 22,952 surgical specimens were examined during this period, out of which 1,450 (6.3%) were identified as prostatic specimens. These included trucut biopsies and prostatectomy specimens, all sourced from male patients.

2.3. Recruitment Process and Sampling Techniques

The prostatic specimens were collected from patients presenting with clinical features suggestive of prostatic diseases, including benign prostatic hyperplasia (BPH), prostatitis, and prostate cancer (CAP). The recruitment of specimens was based on histopathological requests made by urologists and general practitioners. Specimens were selected for inclusion in the study if they were adequately preserved and representative of the prostatic lesions.

2.4. Procedures

- ***Data Collection***: Hospital request forms, referral cards, and patient case notes were reviewed to extract relevant clinical information, including age, clinical diagnosis, and laboratory numbers. Duplicate copies of histopathological reports were also utilized.
- ***Histopathological Examination***: Paraffin-embedded tissue blocks and corresponding Hematoxylin and Eosin (H & E) stained slides were retrieved. In cases where original slides were missing or damaged, fresh sections were prepared from the tissue blocks. Special stains, such as Periodic Acid-Schiff (PAS) and mucicarmine, were employed when necessary to enhance the visualization of poorly differentiated tumors.
- ***Classification***: The histopathological patterns of the prostatic lesions were classified according to the current World Health Organization (WHO) classification of prostatic tumors. The Gleason grading system was utilized to assess the degree of differentiation in adenocarcinomas.
- ***Statistical Analysis***: The data obtained were collated and subjected to simple statistical analysis. Results were presented in tables and figures, showing relative frequencies and group percentages. The incidence of various prostatic lesions was calculated, and comparisons were made with previous studies conducted at JUTH and other centers.

2.5. Ethical Considerations

Ethical approval for the study was obtained from the Research and Ethics Committee of JUTH. Given the retrospective nature of the study, informed consent from individual participants was not required; however, all patient data were handled with strict confidentiality to ensure privacy.

This methodology allows for a comprehensive understanding of the histopathological patterns of prostatic lesions over the specified period, contributing valuable insights into the trends and characteristics of prostatic diseases in the region.

3. Results

Table 1 Annual incidence of prostatic lesions seen between 2000 and 2009

Year	Strictly chronic prostatitis	NH + ASS lesions	HGPIN + ass lesions	Cap lesions	Total prostatic lesions	Total specimen received	% of prostatic specimen
2000	NIL	100	1	34	135	1754	7.7%
2001	NIL	73	1	22	96	1934	4.9%
2002	NIL	69	NIL	21	90	1984	4.5%
2003	NIL	31	1	14	46	2274	2%
2004	NIL	86	NIL	24	110	2021	5.4%
2005	NIL	119	3	47	169	2513	6.7%
2006	NIL	148	9	58	215	2510	8.6%
2007	NIL	150	8	74	232	2706	8.6%
2008	3	170	12	56	241	2972	8.1%
2009	NIL	83	6	27	116	2284	5.1%
TOTAL	3	1029	41	377	1450	22952	6.3%
%	0.2%	70.9%	2.8%	26%	100%		100%

KEYS: NH→Nodular Hyperplasia**. HGPIN→**High Grade Prostatic **Intraepithelial Neoplasia. CAP→** Cancer of the Prostate. For associated lesions observed with NH and HGPIN please refer to figures 2 & 3

A total of 22,952 surgical specimens were received at the Department of Histopathology, Jos University Teaching Hospital (JUTH), Jos, between January 1, 2000, and December 31, 2009. Among these, 1,450 specimens (6.3%) were identified as prostate specimens, primarily derived from trucut biopsies and prostatectomy specimens. The annual incidence of prostatic lesions ranged from 46 to 241 cases, with a mean of 145 cases per year, all of which were observed in black men (Table 1).

3.1. Prostatic Lesions

The distribution of prostatic lesions revealed that 1,029 cases (70.9%) were classified as nodular hyperplasia (NH).

The annual incidence of NH varied from 31 to 170 cases, yielding a mean of 102.9 cases annually (Table 1). The age range of patients with NH was between 30 and 105 years, with a peak incidence of 359 cases (34.9%) occurring in the seventh decade (Table 2).

High-grade prostatic intraepithelial neoplasia (HGPIN) was diagnosed in 41 cases (2.8%), with patient ages ranging from 50 to 100 years and a peak incidence of 39% in the eighth decade (Table 2). Notably, only three cases (0.2%) were identified as strictly prostatitis.

Malignant prostatic lesions accounted for 377 cases (26%), representing approximately 16.7% of all male malignant lesions (2,262) and 47% of all male malignant urological lesions (783) documented during the same period. The frequency of malignant prostatic lesions varied from 14 to 74 cases, with a mean of 37.7 cases annually. The age range for malignant lesions was 30 to 95 years, with the highest incidence occurring in the seventh decade (Table 2). The ratio of NH lesions to prostatic cancer lesions (CAP) was determined to be 2.73:1.

Table 2 Prostatic lesions in relation to age, frequency and percentages

Age (years)	NH with associated lesions	Cap lesions	HGPIN with associated lesions	Strictly chronic prostatitis	Total (%)
30-39	2(0.2%)	2(0.5%)	NIL (0%)	NIL (0%)	4(0.3%)
40-49	22(2.1%)	8(2.1%)	NIL (0%)	NIL (0%)	30(2.1%)
50-59	197(19.1%)	47(12.5%)	5(12.2%)	1(33.3%)	250(17.2%)
60-69	359(34.9%)	140(37.1%)	11(26.8%)	2(66.7%)	512(35.3%)
70-79	301(29.3%)	126(33.4%)	16(39%)	NIL (0%)	443(30.6%)
80-89	114(11.1%)	37(9.8%)	5(12.2%)	NIL (0%)	156(10.8%)
90-99	10(0.9%)	8(2.1%)	3(7.3%)	NIL (0%)	21(1.5%)
≥100	4(0.4%)	NIL (0%)	1(2.4%)	NIL (0%)	5(0.3%)
UNSPECIFIED	20(1.9%)	9(2.4%)	NIL (0%)	NIL (0%)	29(2%)
TOTAL	1029	377	41	3	1450 (100%)
%	70.9%	26%	2.8%	0.2%	100%

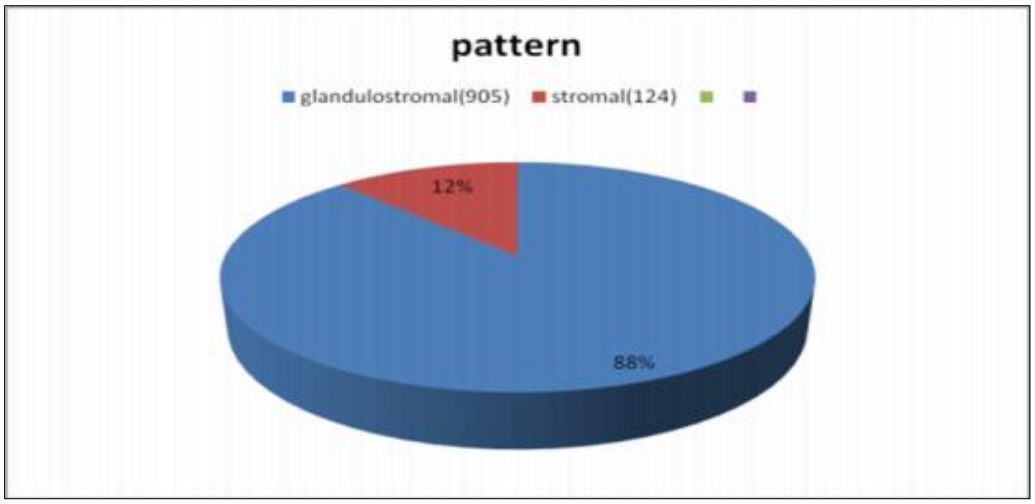
KEYS: NH→Nodular Hyperplasia. HGPIN→High Grade Prostatic Intraepithelial Neoplasia. CAP→Cancer of the Prostate. For associated lesions observed with NH and HGPIN, please refer to figures 2 and 3.

3.2. Histological Patterns of NH

Figure 1 illustrates the histological patterns of NH, indicating that a predominant glandulostromal pattern was observed in 905 cases (87.9%), while a predominant stromal pattern was noted in 124 cases (12.1%). Figure 2 presents the breakdown of four associated lesions co-existing with NH, where NH with chronic prostatitis was the most frequent, occurring in 225 cases (21.9%). Figure 3 shows a photomicrograph of NH with a focus on chronic prostatitis.

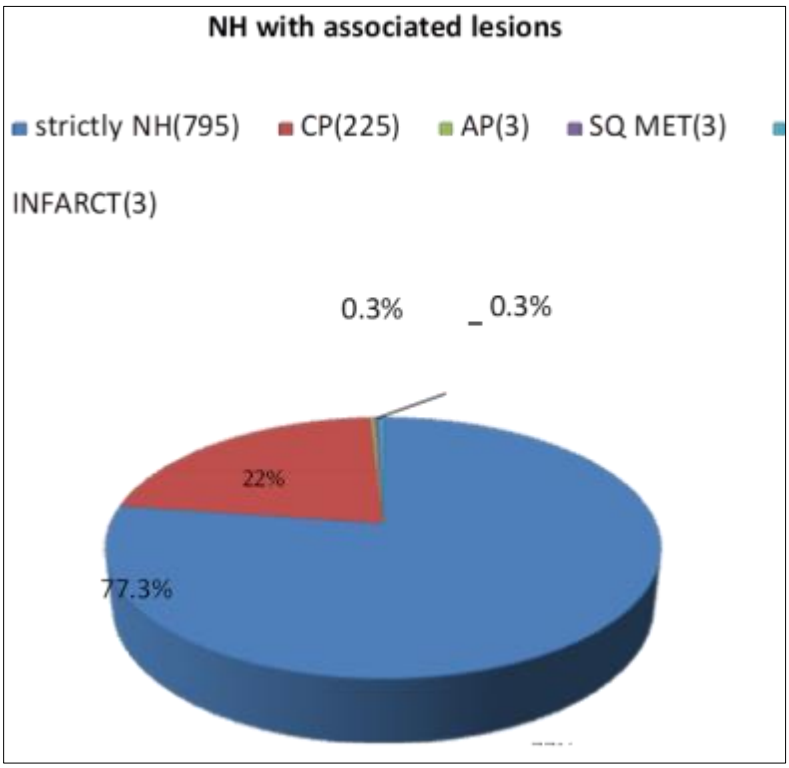
3.3. HGPIN

Figure 4 depicts the breakdown of associated lesions, revealing that HGPIN co-existing with NH was the most prevalent, observed in 22 cases (53.7%) out of the 41 HGPIN cases.



KEYS: Glandulostromal Pattern→905 Cases (87.9%); Predominant Stromal Pattern→124 Cases (12.1%); Total Number of Cases= 1029(100%)

Figure 1 Histological patterns of Nodular hyperplasia in relation to frequency and percentages



KEYS NH→Strictly Nodular Hyperplasia (795 Cases/77.3%); CP→Chronc Prostatitis (225 Cases/21.9%); AP Acute Prostatitis (3 Cases/0.3%) SQ MET Squamous Metaplasia (3 Cases/0.3%) Infarct Infarction (3cases/0.3%); Total Number of Cases= 1029(100%)

Figure 2 Frequency of Nodular hyperplasia with its associated lesions

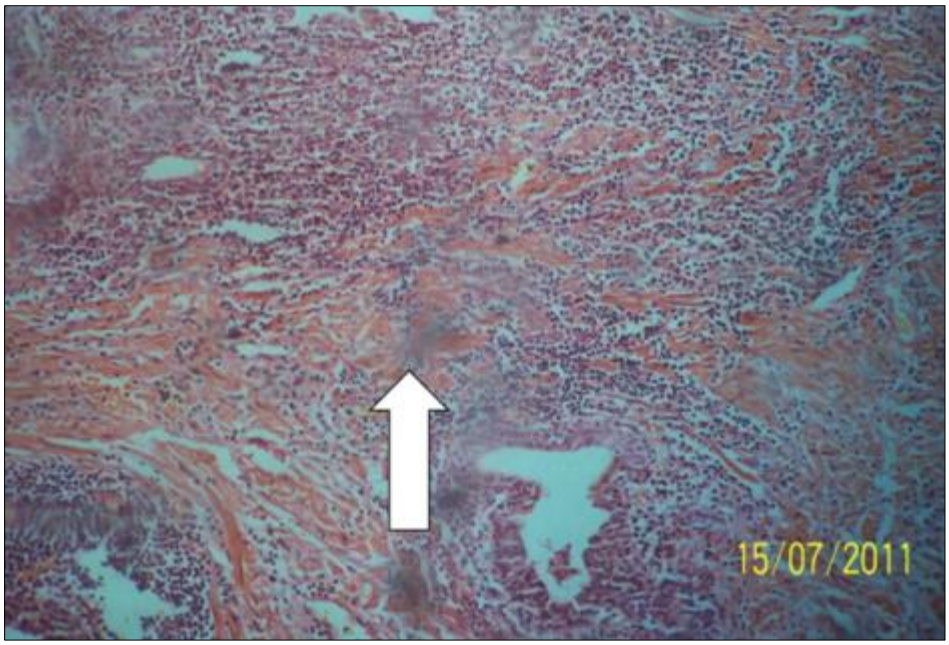
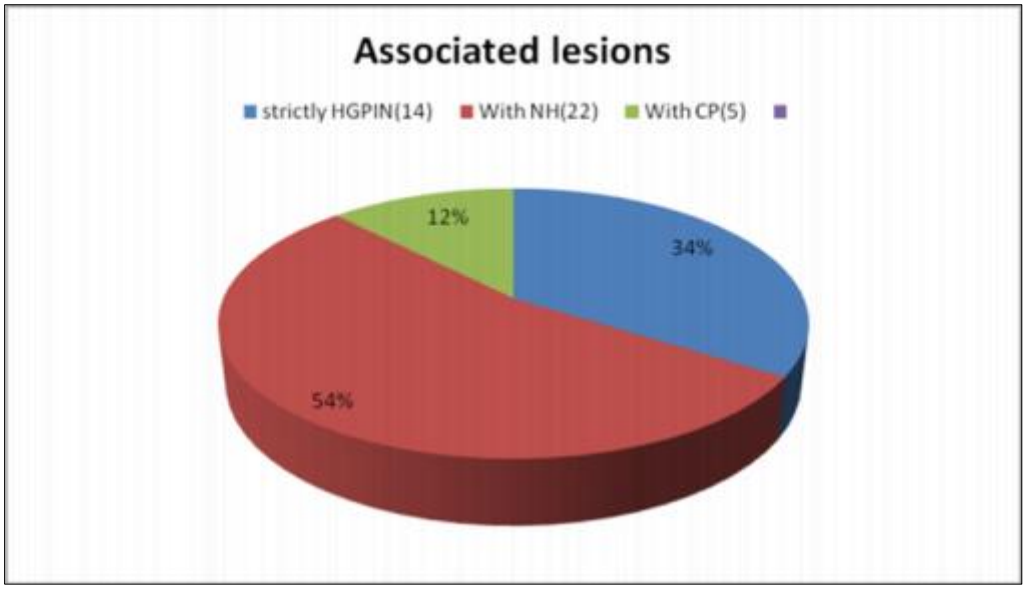


Figure 3 Nodular Hyperplasia with focus of chronic Prostatitis [showing focus of intense mononuclear cell infiltration of the periglandular fibromuscular stroma depicted by the white arrow]. H/E: X10



KEYS: Strictly HGPIN→ High Grade Prostatic Intraepithelial Neoplasia (14 Cases/34.1%) With NH→ With Nodular Hyperplasia (22 Cases/53.7% With CP→ With Chronic Prostatitis (5 Cases/12.2%) Total= 41(100%)

Figure 4 HGPIN with its associated lesions

3.4. Prostate Cancer Histological Subtypes

Table 3 summarizes the histological subtypes of prostate cancer by age, frequency, and percentages. Adenocarcinomas of varying degrees of differentiation were identified in 362 cases (96%), while transitional cell carcinoma (TCC) was observed in 9 cases (2.4%), with two cases primarily originating from the prostate. Additionally, four cases (1.1%) were classified as clear cell carcinoma, and two cases (0.5%) were identified as carcinosarcoma. Figures 5 to 8 provide representative photomicrographs of some of these neoplasms.

Table 3 Histological subtypes of prostate cancer in relation to age, frequency and percentages

AGE (YRS)	ADENOCARCINOMA	UROTHELIAL CANCERS (TCC)	CLEAR CELL CARCINOMA (CCC)	CARCINO SARCOMA	TOTAL	%
30-39	2	NIL	NIL	NIL	2	0.5%
40-49	7	1	NIL	NIL	8	2.1%
50-59	45	2	NIL	NIL	47	12.5%
60-69	134	4	NIL	2	140	37.1%
70-79	121	1	4	NIL	126	33.4%
80-89	36	1	NIL	NIL	37	9.8%
90-99	8	NIL	NIL	NIL	8	2.1%
UNSPECIFIED	9	NIL	NIL	NIL	9	2.4%
TOTAL	362	9	4	2	377	100%
%	96%	2.4%	1.1%	0.5%	100%	

TCC→ Transitional Cell Carcinoma YRS→Years

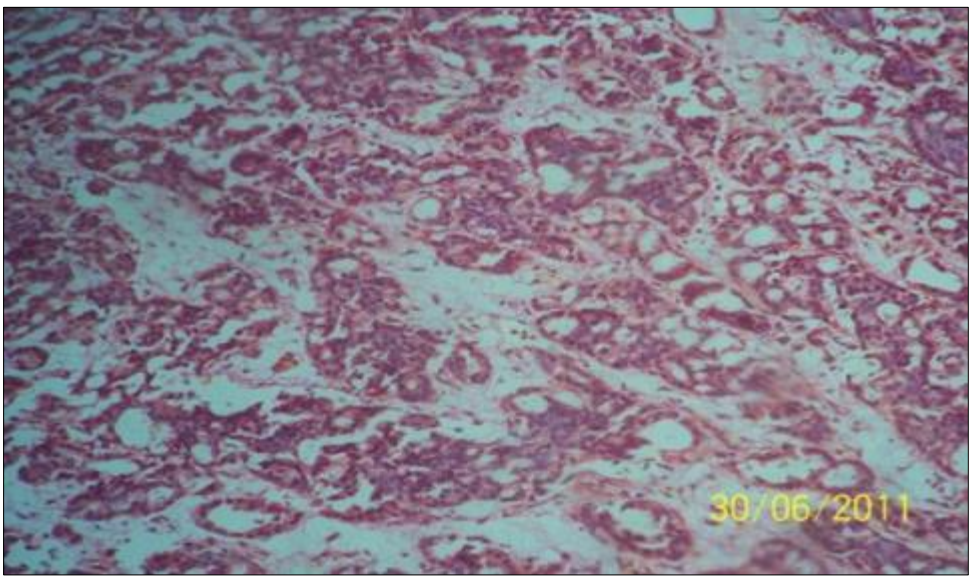


Figure 5 Gleason grade 3 Prostatic Adenocarcinoma [demonstrating pleomorphic, angular, infiltrative, loosely packed neoplastic glands]. H/E: X10

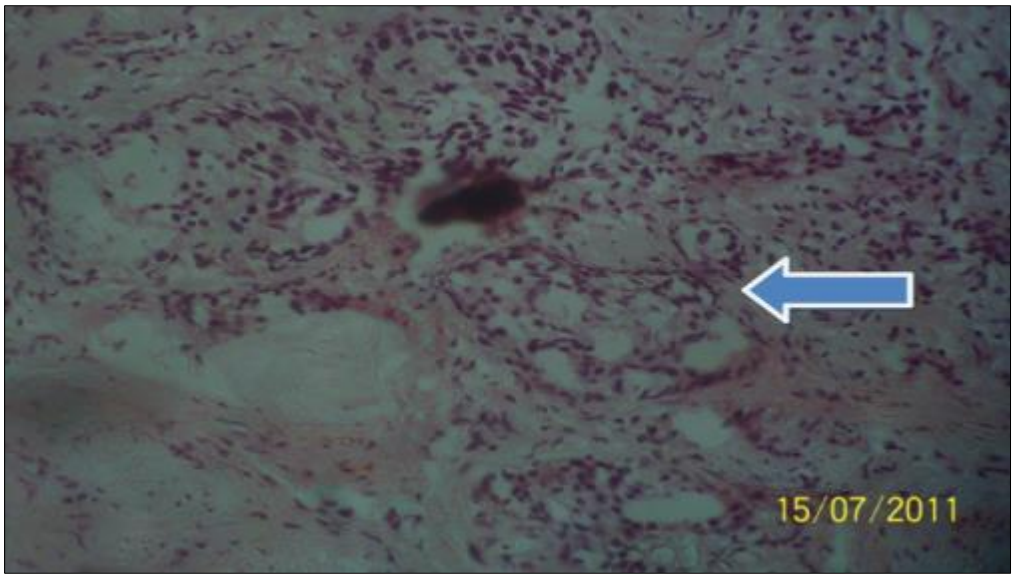


Figure 6 Gleason grade 4 Prostatic Adenocarcinoma [Cribriform pattern depicted by the blue arrow] with a focus of calcification. H/E: X10

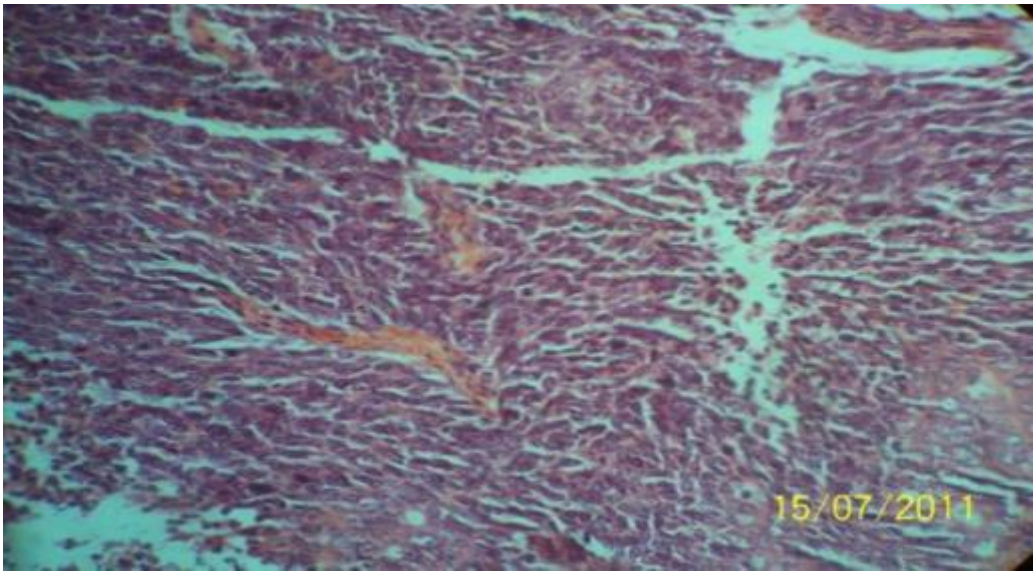


Figure 7 Carcinosarcoma (sarcomatoid focus) demonstrating interlacing bundles of spindle shaped cells. H/E: X40

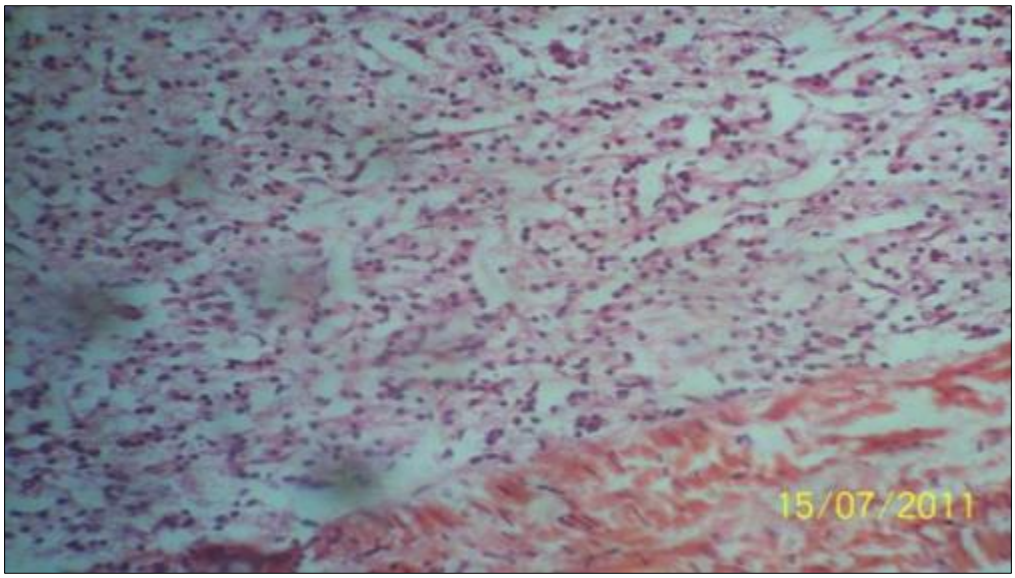


Figure 8 Clear cell Adenocarcinoma [showing tubuloacinar glands lined by hobnail cells having clear cytoplasm]. H/E: X10

Table 4 details the degree of differentiation of prostatic adenocarcinoma, showing that 245 cases (67.7%) were well differentiated, 59 cases (16.3%) moderately differentiated, 20 cases (5.5%) poorly differentiated, and 38 cases (10.5%) undifferentiated (anaplastic).

Among the well-differentiated adenocarcinomas, 93 cases (38%) were observed in the seventh decade, while 15 cases (39.5%) of the undifferentiated adenocarcinomas were noted in the eighth decade.

Table 4 Degree of differentiation of prostatic adenocarcinoma in relation to age, frequency and percentages

Age	Well differentiated	Mod differentiated	Poorly differentiated	Undifferentiated/ anaplastic	Total	%
30-39	1	1	NIL	NIL	2	0.6%
40-49	4	2	NIL	1	7	1.9%
50-59	31	8	2	4	45	12.4%
60-69	93	20	8	13	134	37%
70-79	82	17	7	15	121	33.4%
80-89	24	6	2	4	36	9.9%
90-99	5	1	1	1	8	2.2%
UNSPECIFIED	5	4	NIL	NIL	9	2.5%
TOTAL	245	59	20	38	362	100%
%	67.7%	16.3%	5.5%	10.5%	100%	

3.5. Gleason Patterns and Scores

Table 5 presents the Gleason grade patterns of prostatic adenocarcinoma, indicating that Gleason pattern "3" was the most frequently observed, accounting for 36.9% of cases, while Gleason pattern "4" was the least observed at 3.3%.

Table 6 outlines the Gleason scores of adenocarcinomas, revealing that the combined Gleason score of "4" was the most frequent, occurring in 128 cases (35.4%), while combined Gleason score of "9" was the least reported at 1.1%.

Table 5 Gleason grade patterns of prostatic adenocarcinoma in relation to age, frequency and percentages

AGE	Gleason	Gleason	Gleason	Gleason	Gleason	TOTAL
(YEARS)	pattern 1	pattern 2	pattern 3	pattern 4	pattern 5	(%)
30-39	1	1	2	NIL	NIL	4(0.6%)
40-49	4	3	5	NIL	2	14 (1.9%)
50-59	26	28	28	3	5	90(12.4%)
60-69	84	48	108	8	20	268(37%)
70-79	82	41	90	10	19	242(33.4%)
80-89	20	25	20	2	5	72(9.9%)
90-99	6	2	6	1	1	16(2%)
UNSPECIFIED	8	2	8	NIL	NIL	18(2.5%)
TOTAL	231	150	267	24	52	724(100%)
%	31.9%	20.7%	36.9%	3.3%	7.2%	100%

Table 6 Combined Gleason scores of prostatic adenocarcinoma in relation to age, frequency and percentages

AGE	G/S	G/S	G/S	G/S	G/S	G/S	G/S	G/S	G/S	TOTAL
(YRS)	2	3	4	5	6	7	8	9	10	(%)
30-39	NIL	NIL	1	1	NIL	NIL	NIL	NIL	NIL	2(0.6%)
40-49	NIL	2	2	1	1	NIL	NIL	NIL	1	7(1.9%)
50-59	4	8	19	2	6	2	2	1	1	45(12.4%)
60-69	20	30	43	8	12	8	6	NIL	7	134(37%)
70-79	13	23	46	8	9	7	8	3	4	121(33.4%)
80-89	2	9	13	4	2	2	3	NIL	1	36(9.9%)
90-99	1	2	2	NIL	1	1	1	NIL	NIL	8(2%)
UNSPECIFIED	3	NIL	2	2	2	NIL	NIL	NIL	NIL	9(2.5%)
TOTAL	43	74	128	26	33	20	20	4	14	362(100%)
%	11.8%	20.4%	35.3%	7.2%	9.1%	5.5%	5.5%	1.1%	3.9%	100%

G/S→ Gleason Score; YRS→Years; KEYS: 1. NH: Nodular Hyperplasia; HGPIN: High-Grade Prostatic Intraepithelial Neoplasia; CAP: Cancer of the Prostate.; 2. For associated lesions observed with NH and HGPIN, please refer to Figures 2 & 3

4. Discussion

The findings of this ten-year comparative retrospective study on the histopathological patterns of prostatic lesions at Jos University Teaching Hospital (JUTH) provide significant insights into the evolving landscape of prostatic diseases in North Central Nigeria. This study observed a total of 1,450 prostatic specimens, with a notable increase in the incidence of prostatic lesions compared to previous studies conducted at the same institution. The ratio of nodular hyperplasia (NH) to cancer of the prostate (CAP) was found to be 2.73:1, consistent with earlier findings from this center and other regions in Nigeria, yet contrasting sharply with reports from Sudan, where the ratio was extraordinarily high at 49:1. This discrepancy may reflect regional differences in disease prevalence, healthcare access, and diagnostic practices (3,4,8).

This study's predominance of NH (70.9%) aligns with the established understanding that benign prostatic hyperplasia is the most common prostatic condition, particularly in older males(9). The peak incidence of NH in the seventh decade

corroborates findings from other Nigerian studies, reinforcing the notion that age is a significant risk factor for prostatic diseases (6,10). The glandulostromal pattern of NH observed in 87.9% of cases is consistent with previous literature, indicating a typical histological presentation of this condition (5,11).

Most of NH lesions in this study showed a predominant glandulostromal pattern (87.9%) as against that showing predominant stromal pattern (12.1%) which also corroborates the findings of previous studies here in Nigeria Other studies however show that Asians generally have a predominant stromal pattern which has a lesser capacity for growth and has been postulated as a possible reason for the lower incidence of NH in Asians (12)

The study's findings regarding high-grade prostatic intraepithelial neoplasia (HGPIN) are particularly noteworthy. HGPIN constituted 2.8% of all prostatic lesions, which is lower than expected based on literature suggesting a higher prevalence of this precursor lesion (13). The low detection rate of HGPIN may be attributed to the limitations of the biopsy techniques employed, particularly the reliance on blind digital palpation of trucut biopsies, which are known to yield lower diagnostic accuracy compared to more modern approaches such as transrectal ultrasound (TRUS)-guided biopsies (14,15). Another finding in this study was that the incidence of HGPIN appeared to be increasing with age but it however peaked in the 8th decade which is at variance to what was noted in both NH and CAP that both peaked in the 7th decade. This finding is however similar to a previous study (16,17)

The increasing incidence of HGPIN with age, peaking in the eighth decade, however suggests a potential shift in the understanding of its progression and risk factors, warranting further investigation and research questions.

In terms of malignant lesions, the study reaffirmed that CAP remains the most common male malignancy in North Central Nigeria, constituting 26% of all prostatic lesions. This finding is consistent with an upward trend in the incidence of CAP reported in various Nigerian studies, indicating a growing public health concern (1,7). The predominance of adenocarcinoma (96%) among malignant lesions aligns with global trends, where this histological type is recognized as the most common form of prostate cancer (18). This study also confirmed the rarity in the literature of other histological variants of CAP (19). Apart from the acinar adenocarcinoma type, the other histological variant observed in this study was urothelial carcinomas both primary and secondary followed by the clear cell carcinoma grouped under prostatic miscellaneous cancers. However, interestingly two cases of carcinosarcoma were also detected. The Gleason score distribution observed in this study, with a significant proportion of well-differentiated tumors, reflects the variability in tumor biology and the importance of early detection and intervention strategies (9). Despite the significant contributions of this study, several limitations must be acknowledged. The retrospective nature of the study may introduce biases related to data collection and completeness, particularly concerning clinical details and patient demographics. Additionally, the reliance on archival specimens may limit the generalization of the findings to the broader population, as not all patients with prostatic lesions seek surgical intervention or biopsy. The absence of immunohistochemical analysis further restricts the ability to differentiate between various histological sub-types of prostatic cancer, particularly in cases of urothelial carcinoma and clear cell carcinoma, which could have provided more comprehensive insights into the disease spectrum (13).

4.1. Recommendations for Future Researches

Trans Rectal Ultra Sound [TRUS] guided sextant core biopsies which samples the apex, mid region and base bi laterally, its modifications where up to thirteen biopsies may be taken or even the systematic five region biopsy sampling techniques should be incorporated into our tertiary institutions urology and radiology units in order to be able to have a better yield for histopathological diagnosis especially as it concerns the recognition of HGPIN in tissue biopsies which would help clinicians in categorizing the patients with this lesion into the high risk group requiring follow up and close monitoring and by extension reducing the CAP cases. Trans Urethral Resection of Prostate [TURP] procedures should also be instituted and done periodically because of its enviable role of particularly being able to detect TZ cancers easily which must never be overlooked.

Going by this aforementioned, there should be more multi discipline collaboration in investigations, conferences, researches, treatments, referrals and feedback between the histopathologist, urologist, radiologist and radiotherapist for the common good of the patients.

The management of JUTH needed to keep abreast with other competing centers in the country as it regards hastening the availability of immunohistochemical facilities in order to be able to overcome some of the limitations of this study which include not being able to stain for Uroplakins and CA 125 which could have helped in confirming the Urothelial cancers of the prostate and the Clear cell carcinoma respectively as observed in this study. It would also have helped in distinguishing primary CAP from metastases to the prostate and also its additional role in helping to establish prostatic

origin in metastatic tumors of unknown primary cannot be over emphasized. Its availability will also go a long way in complementing Haematoxylin and Eosin preliminary diagnosis by using it to stain for proteins like P63 gene, High Molecular Weight Cytokeratin [HMWCK], Alpha methyl Acyl CoA racemase (AMACR), Antigen receptors (AR) and prostate surface membrane antigen (PSMA) etc to ease some otherwise difficult diagnosis knowing well that both P63 gene and HMWCK are specific basal cell markers. Furthermore, the use of total PSA measurement in screening and monitoring should be discouraged and replaced by more specific methods like fractionated PSA bound to Alpha 1 antichymotrypsin (PSA-ACT complex), PSA density, PSA velocity, Age specific total PSA reference ranges and the free / total PSA ratio. The need to adopt and apply easily reproducible Gleason histopathological grading and scoring system by all pathologists reporting adenocarcinoma of the prostate in keeping with the 2005 International Society of Urological pathology (ISUP) consensus statement on Gleason grading of prostate cancer for global uniformity and also to be able to answer ongoing research questions.

Moreover, longitudinal studies that track the incidence and progression of prostatic lesions over time would provide valuable data on the natural history of these conditions and their response to various interventions. There is also a need for community-based studies to assess the prevalence of prostatic diseases in the general population, which could inform public health strategies and resource allocation for prostate health.

5. Conclusion

In conclusion, this study contributes to the growing body of knowledge regarding prostatic lesions in Nigeria, emphasizing the need for continued research and improved clinical practices to address the rising incidence of prostate cancer and enhance patient care.

This study also provides a comprehensive analysis of the histopathological patterns of prostatic lesions observed at Jos University Teaching Hospital (JUTH) over a decade, from January 2000 to December 2009. The findings reveal that prostatic lesions, particularly Nodular Hyperplasia (NH) and Cancer of the Prostate (CAP), remain significant health concerns for men in North Central Nigeria. Specifically, NH constituted 70.9% of the prostatic lesions, while CAP accounted for 26%, confirming the latter as the most common male malignancy in the region.

The observed ratio of NH to CAP at 2.73:1 is consistent with previous studies, indicating a stable pattern in the prevalence of these conditions. Notably, the study highlights an upward trend in the incidence of CAP, which may be attributed to factors such as increased public awareness, improved diagnostic techniques, and lifestyle changes, including the adoption of Western dietary habits. This trend underscores the need for heightened vigilance and proactive screening measures in the population, from the middle age and particularly among older men, as the peak incidence of both NH and CAP was observed in the seventh decade of life.

Furthermore, the study's findings regarding High-Grade Prostatic Intraepithelial Neoplasia (HGPIN) suggest that while it is a recognized precursor to CAP, its low incidence (2.8%) may reflect limitations in biopsy techniques currently employed at JUTH. This calls for the implementation of more advanced diagnostic methods, such as TRUS-guided biopsies, to enhance the detection of HGPIN and improve overall patient management.

Finally, the significance of this research lies in its potential to inform clinical practice and improve public health strategies regarding prostatic diseases in Nigeria. By establishing a clearer understanding of the histopathological landscape of prostatic lesions, this study contributes to the ongoing discourse on prostate health, emphasizing the necessity for improved diagnostic protocols and collaborative efforts among healthcare professionals to address the rising incidence of prostate cancer effectively. These findings serve as a crucial benchmark for future research and clinical interventions aimed at reducing the burden of prostatic diseases in the region.

Compliance with ethical standers

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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