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Research Article

A STUDY OF PROSTATIC LESIONS WITH REFERENCE TO FNAC EVALUATION AND HISTOPATHOLOGY IN TERTIARY CARE HOSPITAL BIKANER RAJASTHAN

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ABSTRACT

Background: Prostatic carcinoma is an important growing health problem, presenting a challenge to urologists, radiologists and pathologist.
Materials and Methods: This study was conducted on the patients of department of urology, S.P. Medical College and Associate group of Hospitals, Bikaner Fifty Six (56) Cases of Prostate enlargement benign, premalignant and malignant were included in this study. The selection of cases will be random.
Results: Out of 35 cases of BPH on core biopsy, 30 cases were diagnosed as BPH on FNAC, 4 were diagnosed as adenocarcinoma on FNAC and FNAC of 1 case was not available. So accuracy of FNAC for BPH was 88.24%.Out of 13 cases of adenocarcinoma on core biopsy FNAC of all 13 cases was available and out of these 13 cases, 9 cases were diagnosed as adenocarcinoma so accuracy of FNAC for adenocarcinoma was 69.23%.
Conclusion: FNAC is a very useful, simple, cheap, repeatable technique in diagnosing accurately the prostatic lesions and can avoid an open biopsy in many cases reducing patient morbidity and increasing cost effectiveness of the treatment.

INTRODUCTION

Prostate cancer is the most common form of cancer in the older man and the second leading cause of cancer death in man. Cancer of prostate is said to have been first acknowledged in 1817. Since then the understanding of prostate pathology has progressed and the differential diagnosis of carcinoma has expanded to include possible premalignant lesions and several pseudocarcinomatous lesions. The prostate gland is located between the base of the bladder and the rectum and surrounds the proximal part of the urethra. The two ejaculatory ducts transit through the glands. Anatomically the prostrate may be divided into five poorly defined lobes namely the anterior, median, posterior and two lateral lobes. The functional concept of the prostrate permitted Mc NEAL to distinguish a central and a peripheral zone in the gland since it reflects a difference in response to hormonal environment. Most carcinoma arise in the peripheral zone of the prostrate where as benign hyperplasia exclusively involves the central zone of the prostrate.

Prostrate represents the major organ for most of the surgical problems in the field of urology. It is the favored site for neoplastic growths and infections.

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For understanding the etiopathology of the prostatic diseases knowledge about the embryology anatomy, histology and physiology is essential. For proper management of the prostrate diseases many investigations like perectal examination, transurethral cystoscopy, fine needle aspiration cytology, corebiopsy, serum enzyme estimations like prostrate specific antigen, prostrate associated antigen, acid phosphotase and transrectal ultrasound examination are available. Among all the above investigations tissue diagnosis obtained by aspiration cytology and truecut biopsy by transrectal route are very important to plan the management. The purpose of FNAC is to obtain diagnostic material for cytological study. Initially FNAC was used to diagnose only palpable lesions.

The first attempt at cytological diagnosis of prostrate was by transperineal approach by Ferguson in 1930. The technique of FNAC of prostrate was introduced by Franzen, Gietz and Zajicek in 1960. Later it was replaced by trans rectal route and popularized by Franzen instrumentation. The simple instruments designed by Franzen made trans rectal biopsy of any palpable abnormality in the prostrate or elsewhere in the pelvis relatively easy. In a male patient with a disseminated malignancy of unknown origin FNA of the prostrate is a simple method of investigation useful in the search of primary malignancy. It is a safe, simple, easy to perform as outpatient procedure and causes less discomfort to the patient, the risk of complications is also very low and the patient was not

subjected to radiological exposure. This procedure has a high diagnostic accuracy as many studies revealed that it allows prostatic core biopsy to be obtained in arrange of 66-97% of accuracy.

MATERIAL AND METHOD

This study was conducted on the patients of department of urology, S.P. Medical College and Associate group of Hospitals, Bikaner who underwent Needle core biopsy and FNAC.

The Biopsy specimen and FNAC were received by the department of pathology S.P. Medical College, Bikaner.

Fifty Six (56) Cases of Prostate enlargement benign, premalignant and malignant were included in this study. The selection of cases will be random.

Collection of core biopsy of prostate

The core biopsies were obtained with patient in lithotomy position. A careful digital examination of the lesion to assess its size and consistency was first made. Then cores were obtained by automated spring loaded 18 gauge biopsy gun with help of left index finger of double gloved hand.

The Core Biopsies were processed in the department of pathology S.P. Medical College, Bikaner.

Paraffin embedded section of biopsy and methanol fixed FNA will be used and stained with Haematoxylin and eosin stain.
Method of processing for Biopsy specimen-

1. Fixation
2. Processing
3. Cutting and Mounting
4. Staining-Staining procedure was same for FNAC and Biopsy section

Collection of FNAC of prostate

The aspiration of prostate was done with help of franzen's instrument with 22 gauge 20 cm. long flexible needle. The aspiration was performed with the patients in lithotomy position. A careful digital examination of lesion to assess it size and consistency was first made. Then lubricated left index fingure of double gloved hand with instrument was inserted slowly and carefully into the rectum. The suspected area of prostate was palpated with the index figure after which the needle was advanced into lesion with the plunger of syringe down. When needle has entered the lesion several small amplitude to and fro movements of needle were performed to loosen the target tissue. Negative pressure was obtained by pulling on the syringe plunger in order to aspirate the material on to the needle before withdrawing the needle from prostate the negative pressure was released.

The smears were prepared from needle content and processed as alcohol fixed smears.The smears were stained with Giemsa stain and H&E stain.

RESULTS

Table I Distribution of patients according to prostatic lesion on core biopsy prostate and FNAC prostate.

Lesions	No. of cases	Percentage of cases
Adeno carcinoma	13	23.21%
BPH	41	73.21%
Chronic inflammation	2	3.57%

In present study maximum no. of patients were of BPH (73.21%) and 23.21% were of carcinoma and 3.57 were of chronic information. 6 cases (10.71%) have unsatisfactory/ unavailability of biopsy, all of 6 was diagnosed as BPH on FNAC.1 case has unavailability FNAC and diagnosed as BPH on biopsy.

Table II Distribution of cases according to FNAC findings

Lesions	Total positive cases on core biopsy	No. of cases with positive FNAC findings	No. of cases with negative FNAC findings	Total
Adeno carcinoma	13	9	4	13
BPH	34	30	4	34
Chronic Inflammation	2	2	0	2

Core biopsy of 6 cases and FNAC of one case was unavailable/unsatisfactory out of these 6 cases; all 6 cases were diagnosed as BPH on FNAC. FNAC of 1 case was not available which was diagnosed as BPH on core biopsy. Out of 35 cases of BPH on core biopsy, 30 cases were diagnosed as BPH on FNAC, 4 were diagnosed as adenocarcinoma on FNAC and FNAC of 1 case was not available. So accuracy of FNAC for BPH was 88.24%.Out of 13 cases of adenocarcinoma on core biopsy FNAC of all 13 cases was available and out of these 13 cases, 9 cases were diagnosed as adenocarcinoma so accuracy of FNAC for adenocarcinoma was 69.23%.

DISCUSSION

In present study FNAC of 55 patients were obtained and core biopsy of 50 patients were obtained. Core biopsy 6 cases and FNAC of 1 case was unavailable/ unsatisfactory. So 49 cases have both FNAC and core biopsy available. Out of these 49 cases 13 cases were diagnosed adenocarcinoma (26.53%). And 34 cases were diagnosed as BPH (69.38%) and 2 cases were diagnosed as chronic prostatitis (4.08%).

Out of 13 cases of adenocarcinoma on core biopsy FNAC of 9 cases were showing results of adenocarcinoma (69.23%) and FNAC of 4 cases were showing BPH (30.76%) and out of 34 cases of BPH on core biopsy, FNAC of 30 cases was showing BPH (88.23%) and FNAC of 4 cases was showing adenocarcinoma (11.76%). 2 cases of chronic prostatitis was found on core biopsy and FNAC of these 2 cases shows similar results to core biopsy.

These results were correlated with study of T. Islam *et al* who stated the accuracy of FNAC was 83% on his study of Corten HB *et al* (1986)[1]. Also shows 91% of correlation between FNAC and histopathological studies.

The present study also correlated with study of Lee F *et al* (1987)[2] who studied that cancer diagnosis was 53% with cytological evaluation.

The present study also correlated with study of Singh N *et al*[3] who stated that accuracy of diagnosis on FNAC for benign and carcinoma prostate was 98.33% and 81.81% respectively. The present study also correlated with study of M layer *et al* (1994)[4] who stated 95.6% of accuracy of FNAC diagnosis. The present study also correlated with study of Piaton MD *et al* (1993)[5] who stated that FNAC was positive in 87% of carcinoma.

The present study also correlated with study of Polito M *et al*[6] who found 97.5% and 94.7% accuracy of FNAC for

adenocarcinoma and BPH respectively. This study also correlated with study of D Engelsteine *et al* (2008)[70] who found on FNAC accuracy of 81% for cancer patients.

CONCLUSION

FNAC is a very useful, simple, cheap, repeatable technique in diagnosing accurately the prostatic lesions and can avoid an open biopsy in many cases reducing patient morbidity and increasing cost effectiveness of the treatment.

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