

Comparative Study of Fnac and Histopathology in Palpable Breast Lumps



Medical Science

KEYWORDS : Benign and malignant breast lesion, FNAC, sensitivity, diagnostic accuracy.

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ABSTRACT

Benign as well as malignant breast lesions are quite common in Indian population. In the present prospective study, 107 patients with palpable breast lumps were studied. After history, clinical examination, FNAC was performed with their consent. Aspirated materials were stained with Haematoxyline-Eosin and Leishman's stain. Biopsy or surgery has been performed on all breast lumps and histopathological reports of the same lesion were studied from pathology laboratory. The histopathological reports were compared with FNAC reports.

Out of 107 palpable breast lumps studied, we have found diagnostic accuracy of FNAC (consistent with histopathology) is 98.59% in benign cases and 87.50% in malignant cases. FNAC was false negative in 12.50% in malignant cases and false positive in 1.3% benign cases. The overall success rate of FNAC was 95.33% in breast lumps. FNAC is useful in diagnosis and further planning of treatment. FNAC is a technique utilized in the diagnosis of palpable breast lumps owing to its advantage of being sensitive, specific, economical and safe.

INTRODUCTION:

Breast lumps are a fairly common presenting feature in our OPD, mostly benign and are of no serious consequences but malignancy contribute a significant percentage of palpable lumps. There is increasing awareness among women. Because of anxiety and stress, they perceive every symptom in breast as cancer which compels the patients to seek medical advice. Breast carcinoma is the leading cause of malignancy. Benign as well as malignant breast lesions are quite common in Indian population. Currently 75000 new cases of breast cancer are detected in India yearly. (1) The diagnosis is often made by fine needle aspiration cytology. The application of FNAC for diagnosis of palpable breast lumps was first introduced by Martin and Ellis in 1930 (2).

The main purpose of fine needle aspiration cytology is to confirm cancer preoperatively and to avoid unnecessary surgery in specific benign conditions.

Aims and objectives of the study:

1. To diagnose palpable breast lumps by FNAC.
2. To study accuracy of FNAC in benign and malignant breast lumps.
3. To confirm cytological diagnosis by correlating with histopathological study.

Materials and Methods:

This prospective study was carried out at Dr. D.Y. Patil Medical College, Kolhapur. 107 patients with palpable breast lumps attending OPD of surgery department were studied. Appropriate approval of the institutional ethical committee was obtained for the study. Informed written consent from each patient was also obtained.

Inclusion criteria- all patients with palpable breast lumps and in whom further biopsy/surgery has been performed.

FNAC was performed using 23 gauge needle after history and clinical examination of the patient. Aspirated material was expressed to glass slide and slide was immersed in fixator of 95% methyl alcohol. Slides were stained with Hematoxylin-Eosin and Leishman's stain.

FNAC study is categorized into benign and malignant lesions depending upon findings. (table:1)

FNAC Categories.

Clinical diagnosis	Cytological diagnosis		Histopathological diagnosis	
	Benign	Malignant	Benign	Malignant
Benign-75	74	1	75	-
Malignant-32	4	28	-	32
Benign	-suggestive of benign lesion. -no evidence of malignancy.			
Malignant	suggestive of malignancy. -suspicious of malignancy.			

Table : 1

Results:

Among 107 case studied, 102 were female patients and 5 were male patients. Among 5 male patients with breast lumps, 4

Table:2

had gynaecomastia and one had infiltrating duct carcinoma. In all these cases FNAC findings were consistent with histopathological study.

Benign lesions:

Out of 75 benign lesions, 71 patients were females while 4 were male patients. In all 4 male patients with gynaecomastia FNAC was consistent with histopathology. In 71 female patients, FNAC was suggestive of benign lesion in 70 cases (98.59%) and was consistent with histopathology. (Table:2) But in 1 case (1.3%), FNAC was suggestive of malignant in whom histopathology was benign lesion. (false positive). (Table:3)

Figure 1 and figure 2 shows FNAC and histopathological findings of benign breast lesion i.e fibroadenoma respectively.

Following benign breast lesions studied-

Histopathological diagnosis	No of cases	Cytological diagnosis	
		Consistent	Inconsistent
Fibroadenoma	60	59	1
Fibroadenosis	1	1	-
Fibrocystic disease	3	3	-
Cystosarcoma phylloides	3	3	-
Abscess	3	3	-
TB Mastitis	1	1	-
Gynaecomastia	4	4	-

Table:3

Malignant lesions:

Out of 32 malignant lesions, 31 were female patients while

I was male patient with infiltrating duct carcinoma. Out of 32 cases FNAC was suggestive of malignancy in 28 cases (87.50%) and was consistent with histopathology, while in 4 cases (12.5%), FNAC suggestive of benign lesion and histopathology was malignant (false negative). (Table:4)

Following malignant breast lesions studied-

Histopathological diagnosis	No of cases	Cytological diagnosis	
		Consistent	Inconsistent
Infiltrating duct carcinoma	29	25	4
Medullary carcinoma	3	3	-

Table:4

Figure 3 and figure 4 shows FNAC and histopathological findings of malignant breast lesion i.e. infiltrating duct carcinoma respectively.

Discussion-

In present study FNAC was done in 107 cases of which 75 cases were benign and 32 cases were malignant. FNAC is helpful in diagnosis of benign breast lesions in 98.67% cases and 87.50% in malignant lesions. The overall accuracy of FNAC in breast lesions is 95.33% in present study. Wilson Stephanie L. et al (3) done study of FNAC in 48 cases of malignant lesions and found 92% accuracy with histopathological report. In another series of 2772 breast masses studied by Zajdela A., M.D. et al (4), FNAC was correlated with histopathological report in 88% of cases with malignant lesions and 89% of benign lesions. Nicholson S. et al (5) found that diagnostic sensitivity of FNAC for all patients was 88%. Bell Debra A. et al (6) after study of 1410 patients with breast lesions came to conclusion that 93% of malignant lesions were detected by the combination of clinical, cytologic and mammographic examination. Kahky Michel P. and et al (7) found 92% sensitivity and 97% specificity after a study of 115 cases. After a study of 464 breast masses by F.N.A.C., William H. Wolberg and et al (8) found 98% sensitivity and 94% specificity. FNAC was introduced as a primary test in the diagnosis of breast carcinoma. The procedure is safe, reliable and time saving outdoor procedure with little discomfort to the patient. FNAC is not only useful in diagnosis and further planning of treatment without need for biopsy, but also helpful in prognostication of the tumor factors such as nuclear grading, mitotic index, hormone receptor status and DNA contents. The slides can be prepared by cytopsin method or thin prep method. (9)

Conclusion:

FNAC is helpful in diagnosis of benign breast lesions in 98.67% cases and 87.50% in malignant lesions. The overall accuracy of FNAC in breast lesions is 95.33%. Fine needle aspiration cytology (FNAC) is safe, reliable and time saving outdoor procedure with little discomfort to the patient. FNAC is safe, quick, inexpensive, and convenient method in diagnosing breast lumps.

FNAC of Fibroadenoma:

Fig :1



Histopathology of Fibroadenoma:

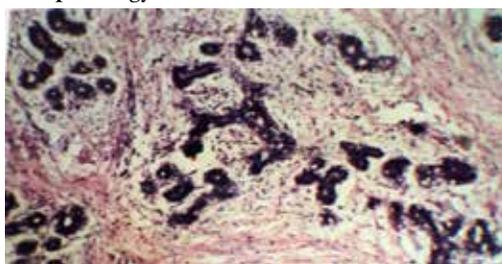


Fig:2

FNAC of infiltrating duct carcinoma

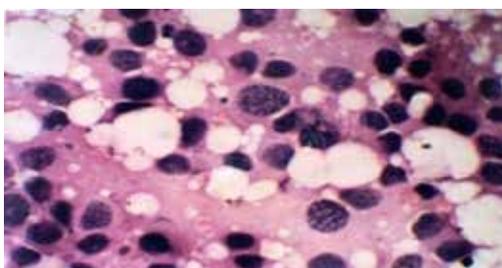


Fig:3

Histopathological structure of infiltrating duct carcinoma

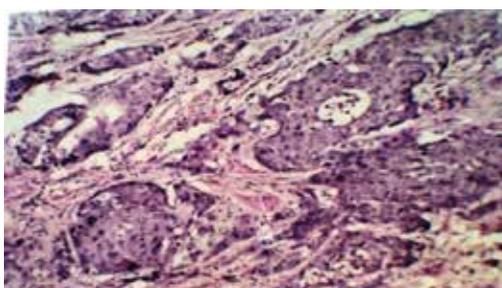


Fig:4

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REFERENCE

1. Chopra R. The Indian scene. J Clin Oncol. 2001;19:106-11. [pubmed] 2. Martin HE, Ellis EB. Biopsy by needle puncture and aspiration. Aaa. Surg. 1930. Aug;92(2):169-181. 3. Wilson Stephanie L. CT(ASCP) And Ehrmann Robert L. MD MIAC 4. Zajdela A. MD; Ghossein N. A. MD; Pilleron J. PMD and Ennuyer A. MD. The value of Aspiration Cytology In The Diagnosis of Breast Cancer: Experience At The Fondation Curie. Cancer vol. 35 P-499-506 1975. 5. Nicholson S; Sainsbury J.R.C.; Wadehra V; Needham G.K. and Farndon J.R. Use of Fine needle aspiration cytology with immediate reporting in the diagnosis of Breast disease. British Journal of Surgery vol. 75 P847-850 sept 1988. 6. Bell Debra A. MD; Hajdu Steven I. MD; Urban Jerome A. MD; And Gaston James P. MD. Role of aspiration cytology in the diagnosis and management of mammary lesions in office practice. Cancer vol. 51. P. 1182-1189. 7. Kahky Michael P. MD; Rone Rene V. MD; Duncan Diane L. CT(ASCP); Cruz Anatolio B. Jr MD; Graskill Harold VIII MD Needle Aspiration Biopsy of Palpable Breast Masses. American Journal of surgery vol. 156 P. 450 - 452 Dec. 1988. 8. Wolberg William H. MD; Tanner Martin A. PhD; Loh Wei-Yin PhD. FNAC for breast mass diagnosis. Arch-Surg-Vol 124:p-814-818 July 1989. 9. Meena SP; Hemrajni DK; Joshi N. A comparative and evaluative study of cytological and histological grading system profile in malignant neoplasm of breast-An important prognostic factor. Indian J Pathol Microbiol. 2006;49:199-202. [pubmed]