

Fine needle aspiration cytology in a palpable breast lump



Pathology

KEYWORDS: Fine Needle Aspiration , breast Lump, Fibroadenoma, Ductal Carcinoma

Dr Rosy Khandelia

Demonstrator, Department of pathology, Gauhati Medical college and hospital, Guwahati, 781032

Dr Rupjyoti Gogoi

Post Graduate, Department of Orthopaedics, Gauhati Medical college and hospital, Guwahati, 781032

ABSTRACT

Introduction: Fine Needle Aspiration Cytology (FNAC) is an important tool for the pre-operative diagnosis of breast lesions. **Materials and methods:** A retrospective hospital based study was done in which a total of 110 cases of palpable breast lump were included. All cases are categorized according to risk for cancer into unsatisfactory sample, benign proliferative breast disease without atypia, Benign proliferative disease with atypia, Inflammatory breast disease, suspicious for malignancy and malignant lesions. **Results:** Out of 110 cases, 60 cases were benign, 35 malignant, 5 suspicious, 7 inflammatory and 3 were unsatisfactory lesions. Cytological and histopathological correlation found in 54.5% of cases. Most common benign breast lesion was fibroadenoma while the commonest malignant lesion was invasive ductal carcinoma. **Conclusion:** We conclude that FNAC is a simple, safe, minimally invasive and reliable technique for preoperative evaluation of palpable breast lumps.

Introduction: Fine needle aspiration (FNA) for cytological evaluation of breast lesions has a long history. Martin and Ellis (1930) were the first investigators to report on FNA of tumours of different anatomic sites including the breast. Zajdela (1954) recommended the use of FNA for the diagnosis of palpable breast lesions and, in 1969 Verhaeghe and Cornillot formalized the triple test, combining clinical, radiological and cytological examination for the diagnosis of breast lesions. Since then numerous reports attesting the value of FNA in the cytological evaluation of breast lesions have appeared in the literature and breast FNA has become a routine diagnostic procedure worldwide.¹ A breast mass is generally palpable when it exceeds 2cm in size. The likelihood of a palpable mass being malignant increases with age.² Only 10% of breast masses under the age of 40 are malignant compared to 16% of masses over the age of 50 years.³

Materials and methods: A retrospective study was done in department of pathology of a tertiary care hospital for a period of one year. A total of hundred and ten cases of palpable breast lesions, attending the outpatient and inpatient wards of surgery department of a tertiary care hospital were included in the study. The cases were thoroughly interrogated, clinically examined and relevant investigations done. FNAC procedure was explained to the patient and patient was placed in a comfortable position. They were then subjected to fine needle aspiration cytology. Aspirations were carried out with 21 or 22 gauge needles of varying lengths with 10 ml syringes in a syringe holder after careful clinical examination of the breast mass. The aspiration and non-aspiration technique with minimum 3-4 passes was used to minimize haemorrhage. The samples were placed on a glass slide and smears were made by inverting second glass slide over the drop and as it spreads, pulling the slides apart horizontally or vertically. The aspirations were air dried, stained with the May Grunwald Giemsa method and examined microscopically. The smears were screened under low and high magnification and diagnosis was made as: 1) Unsatisfactory 2) Benign proliferative breast lesion without atypia 3) Benign proliferative breast lesion with atypia 4) Inflammatory breast lesion 5) Suspicious for malignancy 6) Malignant breast lesion.

Results and observations: Maximum number of cases was observed in age group 21-30 years and there were 107 female and 3 male cases in our study as shown in Table 1. Benign breast lesions were more common in the age group of 21-30 years while malignant breast lesions were common in the age group of >50 years.

TABLE - 1 AGE AND SEX DISTRIBUTION OF SUBJECTS

AGE	FEMALE	MALE
11-20 Years	05	0
21-30 Years	33	2

31-40 Years	28	0
41-50 Years	05	1
51-60 Years	29	0
61-70 Years	06	0
71-80 Years	01	0
81-90 Years	00	0
TOTAL	107	3

Out of 110 cases, 60 cases were benign, 35 malignant, 5 suspicious and 7 inflammatory breast and 3 were unsatisfactory lesions as shown in table 2.

TABLE - 2 CYTOLOGICAL DIAGNOSIS

CYTOLOGICAL DIAGNOSIS	CASES%
Benign without atypia	45
Benign with atypia	15
Inflammatory	07
Unsatisfactory	03
Suspicious	05
Malignant	35
Total	110

Cytological and histopathological correlation was found in 54.5% out of 110 cases. Most common benign breast lesion was found to be fibroadenoma as shown in figure 1 while the commonest malignant lesion was ductal carcinoma as shown in figure 2. Out of 55 cases of benign breast lesions without atypia, fibroadenoma 30(54.54%) was the most common diagnosis followed by fibroadenosis 10(18.18%), fibrocystic change 08 (14.54%), fat necrosis 02 (3.6%), phyllodes 3 (5.4%); and gynaecomastia 02(3.6%).

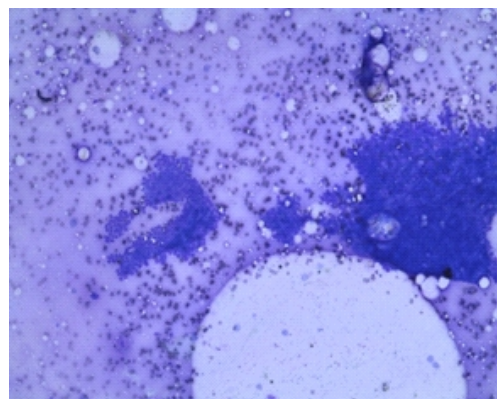


Fig 1: Cytology of Fibroadenoma.

Of the 35 cases of malignant lesions, ductal carcinoma 28(80%) was the commonest followed by lobular carcinoma 03(8.5%), and 02(5.7%) consisted each of papillary carcinoma and medullary carcinoma.

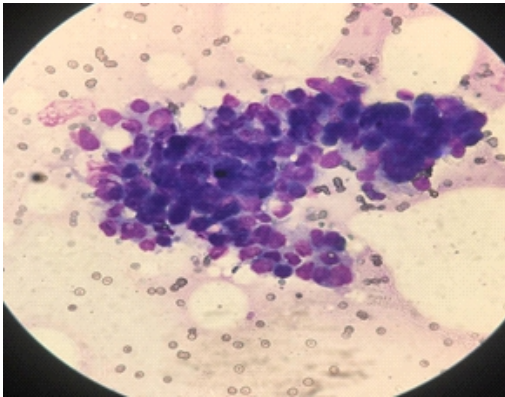


Fig2:Cytology of ductal carcinoma

Cytological and histopathological correlation was found in 54.5% of cases.

Discussion: FNAC of breast is cheap, safe and highly accurate preoperative method for diagnosis of breast lesions. Accuracy in FNAC can be increased by multiple sampling of appropriate sites by ultrasonography guidance and mammographic localization. FNAC can also be used to diagnose lesions of male breasts such as gynaeocomastia and carcinoma, accessory axillary breasts and their lesions, and status of the axillary lymph nodes, thereby reducing the number of open breast biopsies. Most common benign breast lesion in our study was fibroadenoma which was in accordance with the study done by Likhark S et al where most common benign breast lesion was fibroadenoma comprising 45.91% of cases.² But this was in contrast with the study done by Puja B Jarwani et al where most common cases were fibrocystic change and simple cyst (12.7%) followed by fibroadenoma in benign breast lesion.⁴ We found 2.7% cases as unsatisfactory. Other studies showed frequency of inadequate specimens varied tremendously from 0.7%-47%. Some authors provided the reasons for unsatisfactory specimens: One was the insufficient experience of the physician who performed the aspirations while another possibility was the nature of the lesions themselves. For example, hypocellular lesions (which contained few cellular components) and some malignant lesions frequently had unsatisfactory cytology.⁴ Our study had suspicious FNA diagnoses in 4.5% of cases, which correlates with other studies having a range of 4%-17.7%.⁵ The majority of our suspicious cases turned out to be malignant lesions from the subsequent histopathology.

Conclusion: FNAC is a reliable tool for conclusive diagnosis of a breast lesion. It is simple and time saving method, no anesthesia is required and operative risk of surgical biopsy could be avoided and can be repeated as and when necessary.

REFERENCES:

- [1] Malcolm M. M. Hayes Gia-Khanh Nguyen. "Cytodiagnosis of Breast Lesions" An Atlas and Text.2014
- [2] Likhark. K.S., Fatima. A., Hazari. R.A., Gupta. S. G, and Shukla. U.(2013), "Diagnostic role of FNAC in breast lesions". IJRRMS.3(1)
- [3] Susan C. Lister. The Breast. In, Kumar, Abbas, Fausto, Aster(Ed). Robbins and Cotran Pathologic basis of disease.8th edition. Philadelphia, Pennsylvania, Saunders, 2010; 1066-8.
- [4] Jarwani.P.B.,Patel.D.C.,Patel.S.M.,and Dayal.A.(2013), " Fine Needle Aspiration Cytology in A Palpable Breast Lump." GCSMCJ Med Sci, Vol (II) No (II)
- [5] ChaiwunB, SettakornJ,Ya-InC,etal.(2002)."Effectiveness of fine-needle aspiration cytology of breast: analysis of 2,375cases from northern Thailand.". Diagn Cytopathol, 26:201-5