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Fine Needle Aspiration Cytology Of Palpable Breast Lumps In Patients Attending In Pathology Department Of MGM Medical College, Jamshedpur From April 17- April 2018.

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I. Introduction

All breast lesions are not malignant, and all the benign lesions do not progress to cancer; however the accuracy of diagnosis can be increased by a combination of preoperative tests (like physical examination, mammography, fine-needle aspiration cytology, and core needle biopsy). These modalities are more accurate, reliable, and acceptable when compared with a single adopted diagnostic procedure despite of having their own technical limitations.

"As fine-needle aspiration (FNA) has become a critical component in the investigation of palpable breast masses; false-negative diagnoses have become a major concern, prompting re-evaluation of the definition of specimen adequacy. Although cytopathologists agree that a number of parameters relate to the adequacy of an FNA specimen, there is no concsensus on the role of epithelial cell quantitation in the determination of an adequate FNA. To better understand the significance of epithelial cellularity, false-negative FNA samples from palpable breast lesions were reviewed"

It is considered a successful and less complicated procedure with excellent results; however the main factors influencing success should be considered before its procedure to increase its accuracy and these are "the aspirator, the small size of many cancers, and the occult nature of the lesions seen only on mammography.

Fine-needle aspiration cytology (FNAC) is widely used in India as a reliable, rapid, cost-effective, complication free, and an accurate diagnostic modality for the evaluation or management of breast lumps. A study was conducted to see the usefulness of fine-needle aspiration (FNA) in screening of palpable breast masses at the Department of Pathology, MGM Medical College, Jamshedpur (Jharkhand).

II. Material and Method

Total 360 cases of FNAC breast in 1 year duration, April 17 - April 2018 were done. Proper consent form and proper history was included in Performa.

A written consent was taken before performing the FNAC with 10 ml disposable syringe and 22 gauge needle. The slide was prepared and was fixed in 95 % methanol. Papanicolou and Hematoxylin and Eosin (H & E) were done.

III. Result

Total number of 360 cases of Fine Needle Aspiration Cytology of Palpable Breast Lumps were reported at Pathology Department of MGM Medical College between April 17 – April 18. Most of the cases were between 16 yrs to – 62 yrs, with a mean age group of 36 years. The results observed were as follows.

1) Among the type of lesion fibro adenoma showed the highest above about 75 % of incidence (270 cases)
2) Duct carcinoma breast in 8 % (30 cases).
3) Fibro cystic diseases of breast 9 % (33 cases)
4) Breast abscess 4 % (15 cases)

Rest 12 cases of were insignificant comprising of Lipoma Cyste or fluid aspirate.
Highest number of fibroadenoma was the age group of 20- 34 yrs of age.
Maximum carcinoma were between 40- 48 yrs of age.
Inflammatory reason was maximum seen in 25- 32 yrs

Fine-needle aspiration cytology is widely used in the diagnosis of breast cancer because it is an excellent, safe, and cost-effective diagnostic procedure. One can get on site immediate report with minimal cost

using inexpensive equipments and a simple technique. The most significant advantage of FNAC is the high degree of accuracy, rapid results, and a less invasive procedure than a tissue biopsy. FNAC of the breast can reduce the number of open breast biopsies .

The frequency of inadequate cases are variable is different studies ranging from 0 to 57.2% depending on various factors. The main causes for inadequate smears may be due to either lack of technical experience in performing FNA, preparation, and fixation of smears. FNA of ill-defined masses like or lesions with hyalinization and deeply located lumps may also be contributed to the inconclusive diagnosis .

Many inflammatory breast lesions create confusion as these are presented as a palpable mass. "Mammographic, sonographic, and magnetic resonance imaging findings may not always distinguish some of the benign lesions like duct ectasia, fat necrosis from a malignant lesion." Fine-needle aspiration (FNA) is a well-accepted diagnostic modality and procedure for the diagnosis of inflammatory swellings of breasts. We are using this technique in such lesions, and results are variably accepted by our consultants and clinicians with varying degrees of acceptance rates, accuracy, and results. Fine-needle aspiration is the most accurate diagnostic modality for these lesions and cell blocks accentuate the reliability of the diagnosis in these benign inflammatory and curable lesions without requirement of excision biopsy or other second-line investigations. In this study, these were reported as benign inflammatory diseases and their histopathologies was followed and were further categorized into different lesions. Cell blocks were prepared after making the required smears and were processed for histopathology .

There were 85 (20%) cases of benign inflammatory lesions, and the majority of these were of acute and chronic mastitis. "Granulomatous mastitis is a rare chronic inflammatory breast lesion that mimics carcinoma clinically and radiologically" . There were 2 (2.3%) cases of tuberculosis; definitive diagnosis of the tuberculosis mastitis was based on identification of typical histological features under microscopy and detection of tubercle bacilli on Ziehl-Neelsen stain. There were 8 (9%) patients of duct ectasia whose histological diagnosis was based on observing dilatation of major ducts which contained eosinophilic granular secretions and foamy histiocytes both within the duct epithelium and in the lumen. Two cases of fat necrosis were also reported on histopathology, characterized by "anucleated fat cells surrounded by histiocytic giant cells and foamy macrophages". Our findings are consistent with Nemenqani et al. that primary tuberculous mastitis is very rare in India .

FNAC has some pitfalls in the diagnosis of Fibrocystic disease (FCD), adenosis, epithelial hyperplasia with or without atypia, apocrine metaplasia, radial scar, and papilloma . "Fibroadenoma and these benign lesions are more common in our setup. Various types of adenosis have also been described, of which sclerosing adenosis and microglandular adenosis merit detailed description and most of these lesions mimic malignant lesions".

In this study, 338 FNA aspirations were correlated with histopathology to evaluate the diagnostic sensitivity, specificity, and accuracy of this diagnostic modality. Among these lesions 171 (40%) were benign proliferative lesions. In our center, we further categorized these lesions into three main groups; namely fibroadenoma, fibrocystic disease, and benign proliferative diseases. The spindle cell lesions were diagnosed as benign Phyllodes on cytology reports. These results were confirmed by histopathology from the cell blocks and tru-cut biopsies. In our study, no malignancy was seen while few discrepancies were seen in making final categories like out of 70 FNAC diagnosed FA, there were 60, 6,3, and 1 FA, FCD (When there were mixture of cysts, fibrosis, and proliferating ductal epithelium), FAN (overgrowth of both fibrous stroma, and of epithelial elements, i.e., ducts and lobules, in differing proportions), and benign Phyllodes on histopathology. From 90 FCD, there were 70 FCD on histopathology while other were 10, 5, 3, 1, and 1 cases of FA, FAN, florid epithelial hyperplasia (FEH), atypical epithelial hyperplasia (AEH), and benign Phyllodes, respectively.

In our experience, FNAC results are more reliable regarding malignant lesions; however the category of "Suspicious for Malignant Lesions" needs histopathological evaluation before performing surgical measures. Self-assessment, mammography, and tru-cut biopsy may help in the accuracy of these lesions.

It is widely accepted that FNA is a less traumatic and easy technique than core needle biopsy because we repeated the FNAC in case of inadequate smears without any delay, difficulty, trauma, and getting highly accurate results. This statement is not applicable for open biopsy as it is a time consuming and cumbersome technique which requires fixation, processings, staining and so forth. It is also expensive procedure costing Rs 700 (9.5 USD) as compared to Rs 200 (2.5 USD) for each FNA while it is also expensive in advanced countries. In a study Rubin et al. has mentioned a saving of 1000$ with this cost effective procedures [4]. In our study the accuracy of FNA aspiration was increased by repeating the process within 24 hours and was found to be significant (). There were many reasons for inadequate smears like size, type of lesions, experience of the technical staff, and cooperation of patients in our study.

We have a proper and permanent FNAC modality room, onsite service, technical trained staff, expert consultants, and a large number of postgraduate students available for FNA service. We provide 90% free services; however, our charges are 1.2 USD for the affording cases. We have direct interaction with the

clinicians, patients, and our laboratory technical staff. In our study, no false negative cases were reported when compared with histopathology.

Only four cases were observed as being false positives (1.7%). False positives were interpreted as "suspicious for malignancy" that were later on reported as benign proliferative lesions on histopathology. All benign and malignant reported aspirates showed 100% accuracy. In this study the sensitivity was 100%, and the specificity was only 98% because of false positives when compared with the histological reports.

There is a wide range of false results regarding the credibility of FNAC. The rate of false negatives, false positives varied from 0% to 10% in various studies. Our results are consistent with our previous study and other studies in India and other areas. "The overall results in our previous study for sensitivity, specificity, accuracy, PPV, and NPV were 97%, 100%, 97%, 100%, and 87%, respectively". The reasons for such a large range of variable results are multifactorial and the main factors being the small number of cases of FNA published, lack of onsite service, and coordination between surgeons, radiologists and pathologists.

IV. Conclusion

The cytological examination of breast lesions prior to surgical treatment serves as a rapid, economical, and valuable diagnostic tool. Adhering to the principle of "Triple test," and acquisition of technical, observational, and interpretative skills will further enhance the diagnostic accuracy of proliferative conditions with atypia or suspicious lesions of breast

Bibliography

1. Bukhari MH, Arshad M, Jamal S, Niazi S, Bashir S, et al. (2011) Use of fine-needle aspiration in the evaluation of breast lumps. Patholog Res Int 2011: 689521.
2. Rupom TU, Choudhury T, Banu SG (2011) Study of Fine Needle Aspiration Cytology of Breast Lump: Correlation of Cytologically Malignant Cases with Their Histological Findings. BSMMU J 4: 60-64.
3. Lacambra M, Thai TA, Lam CC, Yu AM, Pham HT, et al. (2011) Granulomatous mastitis: the histological differentials. J Clin Pathol 64: 405-411.
4. Rahman MZ, Sikder AM, Nabi SR (2011) Diagnosis of breast lump by fine needle aspiration cytology and mammography. Mymensingh Med J 20: 658-664.
5. Bukhari MH, Akhtar ZM (2009) Comparison of accuracy of diagnostic modalities for evaluation of breast cancer with review of literature. Diagn Cytopathol 37: 416-424.
6. Rosa M, Mohammadi A, Masood S (2010) The value of fine needle aspiration biopsy in the diagnosis and prognostic assessment of palpable breast lesions. Diagn Cytopathol.
7. Zhao C, Raza A, Martin SE, Pan J, Greaves TS, et al. (2009) Breast fine-needle aspiration samples reported as "proliferative breast lesion": clinical utility of the subcategory "proliferative breast lesion with atypia". Cancer 117: 137-147.
8. Sandhu DS, Sandhu S, Karwasra RK, Marwah S (2010) Profile of breast cancer patients at a tertiary care hospital in north India. Indian J Cancer 47: 16-22.
9. Park IA, Ham EK (1997) Fine needle aspiration cytology of palpable breast lesions. Histologic subtype in false negative cases. Acta Cytol 41: 1131–1138.

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