



DISEASE PATTERN OF PALPABLE BREAST LESIONS ON FINE NEEDLE ASPIRATION: AN ANALYSIS OF INCREASE IN NUMBER OF BENIGN LESIONS CORRESPONDING TO LAUNCH OF NCD PROGRAMME.

Pathology

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ABSTRACT

Aim: This study is to find the distribution of various breast lesions on fine needle aspiration (FNA). To understand disease pattern presenting in this institution as well as to appraise the various breast cancer screening methods and studies conducted for evaluating screening test for the detection of breast carcinoma.

Material and methods: The 2174 person who presented with palpable breast lump from January 2011 to December 2015 at GMKMC Hospital, Salem. Frequency distribution of various breast lesions were analysed after staining with haematoxylin and Eosin.

Results: out of 2174 patients Benign lesion predominates 1191. Two year data after the launch of NCD programme^{1,2,3} show Increase in health awareness through NCD programme campaign. As part of prevention of carcinoma breast screening done for all women in reproductive age group and post menopausal women who is attending hospital as patient or accompanying person either referred from various department or voluntarily attending surgery clinics or NCD clinic^{1,2}.

Conclusion: FNA is a simple, cost effective. Fibroadenoma, fibrocystic change and mastitis form the major bulk of benign breast lesions

KEYWORDS

Breast, benign, cytology, FNA, malignant, NCD screening

INTRODUCTION

Breast lumps are major constitute of female surgical cases in both developed and developing countries. Most of them benign. It is important to diagnose benign lesions and malignant lesions preoperatively for definite line of treatment[3,4]. The triple test includes physical breast examination, mammography and fine-needle aspiration (FNA) is the reliable method for accurate diagnosis of palpable breast lumps.

FNA of breast lump is valued and continues to be used worldwide, and is widely accepted as a reliable technique for evaluation of palpable breast lumps.[3,5,6,7]. Nowadays FNA used in identifying the subtypes of benign, malignant lesions and residual disease to plan therapeutic protocol and follow-up[8]. This study is intended to analyse the distribution of various lesions of palpable breast lumps.

MATERIALS AND METHODS

The present study is a retrospective and prospective study over a period of five years from January 2011 to December 2015 in 2174 patient and volunteer attending Surgery department and NCD clinic at Government Mohan Kumaramangalam Medical College, Salem, Tamilnadu who presented with palpable breast lump. Review of data collected from NCD clinic and Department of pathology were analysed. FNA done for all the patients in cytology lab after obtaining informed written consent. FNA done with standard procedure and under aseptic precautions by using 10 cc disposable syringe and 22 gauge needles[9]. Aspirated material was smeared on glass slides. Slides were stained with Hematoxyline and Eosin [H and E] and Papanicolaou stains. Ziehl Neelsen (ZN) staining was done when tuberculous lesion was suspected. If aspirated material obtained was not satisfactory, a repeat aspiration was done. If only inflammatory material obtained repeat FNA done after antibiotic therapy. In case of more than one swelling, aspiration was done from each swelling. USG was done in 1041 patient. Both USG and Mammography done in 329 patient. During the study period surgical specimens of 833 breast lumps and mastectomy specimen were received for histopathological examination. Tissues were 10% formalin fixed and paraffin processed. The 3-4 µm thick sections were stained with H and E stain. Ziel Neelson staining was performed for tuberculous lesion.

Diagnosis of breast lump was based on physical examination, FNA, mammography/USG features. If specimen sent for histopathological examination histological features compared with FNA findings[16]. Cytology grading of breast carcinomas done by using Robinson's grading system[9]. Carcinomas were graded into Grade I, II and III. Out of cytology reported 434 breast carcinomas, surgical specimens were received in 282 cases. Histology grading was done by Elston and Ellis's modification of Bloom-Richardson method based on histological features, proportion of tubule formation, nuclear pleomorphism and mitotic count/10 hpf. Cytology grading was correlated with histology grading in 211 cases.

RESULTS

Out of 2174 patients, 71 were male and 2103 were female. Age of the patients ranged from 17-72 years. 1191 had benign breast lumps and 434 had malignant breast lumps. In 33 patients, FNA was inconclusive and repeated FNA yielded same result so considered as nonneoplastic lesion and clinical correlation with follow up advised.

Table : Year wise disease pattern of FNA breast lump

Year	Non Neoplastic	Benign	Malignant	Total
2011	66	184	80	330
2012	59	130	78	268
2013	87	403	81	576
2014	176	266	98	540
2015	155	208	97	460
Total	543	1191	434	2174

FNA breast lesion Data in table 1 showing 2 year before, during and 2 year after the launch of NCD programme with sudden and sustained increase of incidence of breast lump with increase incidence in benign lesion.

DISCUSSION

FNA is world wide accepted standard technique in the initial evaluation of palpable breast lumps. It is simple, safe, cost-effective, minimally invasive, rapid and as sensitive as biopsy.[3,5,8] Primary goal of FNA is to distinguish benign lesions from malignant lesions for the purpose of planning the therapeutic protocol and treatment follow-up.

In our study, age of the patients ranged from 17-68 years with 171 male patient and 2003 female patients. Out of 2174 patients, 1191 patients had benign lesions. Malignant lesions were found in 434. It has been emphasised in the past that most of the breast lumps are benign lesion. [9,10,11,12]

Fibroadenoma was the most frequently diagnosed lesion on FNA a total of 816 cases reported as fibroadenoma. Definitive FNA diagnosis was made in all cases. patients based on diagnostic triad of cellular smears with bimodal pattern, numerous single bare bipolar nuclei and fragments of fibromyxoid stroma. [13,14]. Definitive diagnosis was made by correlating FNA features with clinical and radiological features.

Second common benign breast lesion in this study was fibrocystic change is a total of 281 cases. Some of these lesions simulate carcinoma clinically. Most of the fibrocystic change were non-proliferative and FNA smears showed many macrophages, apocrine cells with or without scanty chronic inflammatory cells. Small clusters of ductal epithelial cells without atypia were seen. Proliferative fibrocystic change with or without atypia has relative risk of

developing carcinoma[13]. Diagnosis of benign phyllodes Tumour made through mammography and ultrasound examination. Very large size masses are suggestive of phyllodes. 19 cases of benign phyllodes seen in our study. definitive diagnosis was given based on predominance of stromal components over epithelial, fragments of highly cellular myxoid stroma and numerous single spindle shaped bare nuclei. Nuclear atypia and mitotic figures were absent. FNA smears in some cases had low cellular yield and showed few small cohesive sheets of ductal epithelial cells with occasional myoepithelial cell in clusters and few bare nuclei. Rest of the cases were fibroadenosis, papilloma and dermoid cysts. cysts without epithelial cells lining subsequently proved as benign in histopathological examination and categorised as simple cysts.

Among 543 non-neoplastic cases acute Mastitis was seen in 127 patients, granulomatous mastitis seen in 33 patient Abscesses seen in 92, galactocele in 14 cases, fat necrosis in 42 and gynaecomastia in 156, duct ectasia in 46 and rest showed no specific finding despite multiple repeated aspirate. Those inconclusive case were advised for further evaluation and biopsy.

Out of 434 malignant lesions, 430 were female patient and 4 were male patient. most common diagnosis was infiltrating duct carcinoma(NOS type). In 413 cases, with all four male patient having infiltrating duct carcinoma (NOS type), mucinous carcinoma 7, invasive papillary carcinoma 4, malignant phyllodes tumour 5, medullary carcinoma 2, metaplastic carcinoma 2, lobular carcinoma 1, Non- Hodgkin lymphoma 1. Histopathology diagnosis was available in cases.

Breast cancer is the second most common cancer among Indian females next to cervical cancer. In experienced hands, FNA is highly accurate diagnostic procedure with sensitivity and specificity over 95% for palpable breast lesions.[15]. With the advancement in very sophisticated mammography, neo-adjuvant therapy and breast conservation surgery in breast carcinoma, cytology grading can be used for selection of neoadjuvant therapy. FNA allows the assessment of tumors without any surgical procedure in order to avoid elaborate surgeries associated with more morbidity in low-grade tumors can be avoided[12,13].

CONCLUSION

Most of breast lumps are benign and mainly occur in second and third decade. Fibroadenoma and fibrocystic change are the major category of benign breast lesions in our study. FNA is simple, cost effective and less morbid investigation in the evaluation of palpable breast lumps. When combined with physical and radiology examination FNA gives accurate diagnosis in most of the benign lesion. Grading of malignant lesions on cytology smears must be done for selecting neoadjuvant therapy. Malignant lesions are now common in younger age like early third decade of life. To bring down the breast cancer related morbidity and mortality health education and awareness should be done continuously as part of NCD programme (NPCDCS programme) about Self breast examination, clinical breast examination and mammography screening in females from late second decade of life onwards for early detection of breast carcinoma.

No ethical issues

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Conflict of Interest: None declared.

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