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RESEARCH ARTICLE

A RELATIVE STUDY OF FINE NEEDLE ASPIRATION CYTOLOGY AND CORE NEEDLE BIOPSY WITH HISTOPATHOLOGICAL EXAMINATION OF BREAST LUMPS IN TRIBAL POPULATION OF EAST-SINGHBHUM, JHARKHAND

***Shailendra Nath Paul, Saket Kumar and Anjana Kumari**

Department of Pathology, M.G.M Medical College and Hospital, Jamshedpur (Jharkhand), India

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ABSTRACT

Aims: The aim of this study was to evaluate and compare the results of FNAC and CNB in breast masses with HPE in MGM Medical College, Jamshedpur, Jharkhand.
Materials and Methods: This study consisted of 130 cases having palpable breast lumps collected from our outpatients department during the period september, 2013 to june, 2015. FANC, CNB and surgical biopsies were done by the surgeon and their results were compared.
Results: The correct diagnosis in FNAC was 116 (89.23%) cases, while the correct diagnosis in CNB was 118 (90.77%).
Conclusion: This study presented almost equal detection rates by FNAC and CNB when comparing with HPE. Both procedures are reliable, simple, easy, safe and cheap. So combined techniques could be used as a reliable alternative to surgical biopsy of breast lumps.

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INTRODUCTION

Majority of females attending obstetric and gynecology OPD have benign breast lumps. A palpable lump in the breast whether benign or malignant produce fear for the patient and her family and the surgeon. Result of HPE is a universally accepted means of definitive diagnosis .With the advent of FNAC and CNB there was a decrease in the incidence of open biopsies for breast lumps. CNB is almost replacing the incision or excision biopsy in the breast lesions, as it can be carried one in OPD with minimal intervention. In the article 130 patients having breast lumps were subjected to FNAC and CNB as outpatients and followed by operative treatment with a his to pathological diagnosis, which were compared with HPE. Main purpose of this research is to compare the results of FNAC and CNB in breast lumps with HPE. Variables like age, duration, size, marital status and site of lump were used in this study.

MATERIALS AND METHODS

130 female patients presenting to pathology department, MGM Medical College, Jamshedpur were subjected to FNAC and CNB.

****Corresponding author: Shailendra Nath Paul,***
Department of Pathology, M.G.M Medical College and Hospital, Jamshedpur (Jharkhand), India.

All the Patients underwent surgery depending upon the report of FNAC and CNB and finally all the reports of the methods were compared with histopathological results of the excised issue.

FNAC: A 23 gauge needle with an attached 10 ml disposable syringe had been used. First of all, explained the procedure of FNAC to the patient clearly. Then prepared the area with the sterile swabs. Needle is inserted into the lesion and aspiration done with multiple passes without taking the needle out. Then the aspirated material put in the glass-slide and then smeared. Two types of smears were prepared air dried smears and alcohol fixed wet smears. Air dried smears were stained with Giemsa stain and wet smears with H&E stain. Then examined the smears under light microscope.

CNB: Disposable trucut needle was used. For local anaesthesia, 2 ml disposable syringe, gloves and 2% xylocaine solution are needed. The breast lump is fixed and skin is cleaned and then the local anaesthesia is infiltrated. The needle is inserted and 2-3 core of specimens are taken for HPE. After fixation in 10% formalin, sections were prepared from paraffin embedded blocks and stained with H&E stain and examined under microscope.

TCNB materials

RESULTS

FNAC and CNB with HPE were done in all 130 participants in our study in the pathology department, MGM Medical College, Jamshedpur, Jharkhand. Final diagnosis was benign in 66 breast lumps and malignant in 64 breast lumps. Assay of results was done in benign and malignant disease separately. Out of 66 patients with benign breast lumps 46 were married. The highest incidence in this group was in the third decade (35.38%) of life [Fig-1].

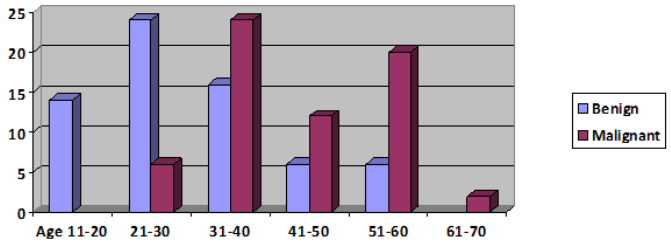

Fig.1. Showing Age Status

Whereas in 64 malignant breast lumps all were married (100%) peak age incidence was in fourth decade. The duration of maximum benign breast lumps was less than three months (38 cases out of 66) and peak incidence of malignant breast lumps was 4-6 months. Only 10% of breast masses in women younger than age 40 are malignant as compared with 60% of masses in women older than age 50. Approximately 50% of carcinomas are located in the upper outer quadrant, 10% in each of the remaining quadrant and about 20% in the central or subareolar region. The majority of cancers that have the capacity to metastasize, reach a size about 2-3 cm.

In our study, the maximum incidence of benign and malignant breast lumps were 2-4 cm in size. FNAC results gave the correct diagnosis in 116(89.23%) cases, while in 12 cases the result was false negative and in 02 cases no opinion could be made. The sensitivity is 90.63% and specificity is 100%. The PPV(Positive Predictive Value) is 100% while NPV(Negative Predictive Value) is approximately 90%. In one percent, unsatisfactory smear obtained, which was not taken for analysis. Overall accuracy of FNAC is 98%. CNB with HPE results gave the correct diagnosis in 118 (90.77%) cases, 4 false negative cases with 8 cases the biopsy was inadequate to give any diagnosis. The sensitivity of CNB was 97% and specificity was 100%. In the same time, the PPV and NPV was 100% and 97% respectively.

DISCUSSION

All conclude on the requirement for quick diagnosis of any breast lesion. Hence research all over the world are in search of a technique which can give an early as well as accurate diagnosis. The incision /excision biopsy is a well accepted diagnostic tool for breast lump, but both methods are traumatic and require operation theatre. Not long ago, much of highlights is laid on FNAC. Trucut needle is a simplified needle and core needle biopsy can be done in out patient clinics. Now- a- days FNAC is used broadly in the diagnosis of any types of lump. When martin and ellis introduced FNAC in 1934, this was not well accepted because of two reasons one was the high rate of false negative diagnosis and another was seedling of the cells along the needle track. But the dissemination of tumour cells is more in surgical biopsy as compared to FNAC. The false negative in carcinoma of the breast in FNAC is 0-11%. In our study had the same false negative rate. The correct diagnosis by FNAC in previous studies can be achieved in 85-96% cases. In the present study the correct diagnosis by FNAC in 89.23% cases. FNAC of breast lumps has many advantages because it is safe, accurate, relatively simple, inexpensive, less time-consuming OPD methods. On other hand TCNB (trucut needle biopsy) is safe and simple method. The patients acceptance is high and the complication is least. On positive diagnosis of malignancy by TCNB, a definitive surgery can be planned as no false positive results are reported by this method.

In our study, there were 4 false negative cases, and 8 cases the biopsy material was inadequate to give any diagnosis. In recent years there has been increased use of CNB in this setting as it can give a core of tissue sample. Both the methods have their own advantages and drawbacks. Some studies favour FNAC over CNB as less expensive, faster and more reliable. Some authors recommended combining the two methods.

Conclusion

The results of this study showed almost equal detection rates by FNAC (89.23%) and CNB (90.77%) when comparing with HPE. CNB was able to give a histological diagnosis and results correlated 100% with the final histology. In the OPD setting, we would like to recommend the use of FNAC for the diagnosis of suspicious breast lumps. However there is need for an excision biopsy to obtain a definitive histology before proceeding to definitive surgery as more have been cases of false positive results for FNAC. Lastly it can be concluded that if FNAC can find a diagnosis one can go ahead with a definitive operation. If FNAC is negative but the patient is suspected clinically then one should go for further investigation. In this situation TCNB is ideal for getting the HPE report and according to histopathology report, patient can be planned for surgery.

REFERENCES

Akeil, M., Karaagaolu, E., Demirhan, B. 2008. Diagnostic accuracy of FNAC of palpable breast masses:An SROC curve with fixed and random effects linear meta-regression model. *Diagn Cytopathol, 36*:303-10.

Ballo, M.S., Sneige, N. 1996. Can core needle biopsy replace FNAC in the diagnosis of palpable breast carcinoma?.Cancer,78:773-7.

Berner, A., Davidson, B., Sigstal, E., Risbey, B. 2003. FNAC Vs core biopsy in diagnosis of breast lesions. Diagn.Cytopathol. Dec:29(6):344-8.

Dennison, G., Anand, R., Makar, S.H., Pain, J.A 2003. A prospective study of role of FNAC and core biopsy in diagnosis breast carcinoma J . Nov-Dec;9(6):491-3.

Dixon, et al. 1978. Fine needle aspiration cytology in relationship to clinical examination and mammography in the diagnosis of a solid breast mass. *British Journal Surgery*,71:593-596.

Elmadhoun, W.M., Almobarak, A.O., Ibrahim, A.M., Bushara S., Noor, S.K., Husain, N.E. O.S. Ahmed, M.H. 2015. Cytomorphology of palpable breast lesions:Diagnostic utility of FNAC in a developing country. *Diagn. Cytopathol*.43:825-829.

Homesh, P.G., ISSA MA, El-Sofiani, H.A. 2005. The diagnostic accuracy of FNAC Vs CNB for palpable breast lump. *Saudi Med J.,* Jan:26(1);42-6.

Ibrahim, A.,Bateman, A.C., Theaker, J.M., Low, J.L., Addis, B.,Tidbury, P. et al. 2001. The role and histological classification of needle core biopsy in comparison with FNAC in the preoperative assessment of impalpable breast lesions. *J Clin Pathol.,* 54:121-5.

Kaufman, Z., Shpitz, B., Shapiro, M. et al. 1994. Triple approach in the diagnosis of dominant breast mass:combined physical examination, mammography and fine needle aspiration. *J Surg Oncol.,* 56:254-7.

Moschetta, M., Telegrafo, M., Carluccio, D.A., Jablonska, J.P., Rella, L., Serio, G. et al. 2014. Comparison between FNAC and CNB in the diagnosis of breast lumps.11 Giornale Di Chirurgia, 35:171-176.

Poole, G.H.,Willsher, P.C., Pinder, S.E., Robertson, J.F. Elston, C.W., Blamey, R.W. 1996. Diagnosis of breast cancer with core biopsy and FNAC. AustNZ *J surg.,* Sep: 66(9):592-4.

Schnitt, S.J. 2003.Benign breast disease and breast cancer risk: morphology and beyond. *Am J Surg Pathol., 27*:836.

Shabot, M.M., Goldberg, I.M., Schick, P., Nieberg, R., Pilch, Y.H. 1982. Aspiration cytology is superior to trucut needle biopsy in establishing the diagnosis of clinically suspicious breast masses. *Annals of surgery,* 196(2):122-126.

Westened, P.J., Sever, A.R., Beckman-devolder, H.J., Liem S.J. 2001.A comparison of aspiration cytology and core needle biopsy in evolution of breast lesions. Cancer April25;93(2);146-52.

Yong, W.S., Chia, K.H., Poh, W.T. and Wong, C.Y. 1999. A comparison of tru cut biopsy with fine needle aspiration cytology in the diagnosis of breast cancer. *Singapore Med J.,* 40: 1-2.

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