

Sure Cut Biopsy of Palpable Breast Lump: A Clinical Value

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ABSTRACT

Background: Many methods are now exists for breast biopsy. Most suitable technique of biopsy for a patient depends upon different factors including appearance, location, characteristics of abnormality and size. There is one of the reasonable techniques, which is known as Sure Cut Biopsy, to diagnose histological palpable breast masses.

Aim: To assess the clinical value of sure cut biopsy in breast masses.

Methods: The study was conducted during 30.05.2017 to 29.12.2017 at Shalamar Hospital, Lahore. One hundred and four (104) female patients were selected in this study, which have palpable breast lumps. In all 104 patients, sure cut biopsy was done and after excision results were compared to histological findings.

Results: Overall rate of accuracy was 92.3%, the rate of sensitivity was 94.1% and 91.4% was specificity. 94.1% sensitivity was same after excluding insufficient specimen for histology obtained by sure cut needle from calculations while specificity was 100%. In this study, there was no false-positive or false-negative was found.

Conclusion: The technique of sure cut biopsy is well accepted to patients. It is a simple biopsy method and no need for hospitalization. In present study we never found any complication as it is a safe process.

Keywords: Histological Diagnosis, Breast Masses, Sure Cut Biopsy, Palpable Breast Lumps.

INTRODUCTION

Needle aspiration method is not new as diagnostic tool. This technique was used since 1833 when liver abscess diagnose was confirmed by needle aspiration.^[1] However, in 1920 much work was done on needle biopsy by Ellis and Martin at Memorial Hospital New York.^[2] From many decades in USA needle biopsy did not achieve broad acceptance as diagnostic tool because of fright of diffusion of malignancy in track of needle or by means of lymphatic and blood vessels.^[3] There was also reported the disinclination of pathologists to report on aspirated smears therefore did not support the method.^[4] Early 1950 cytology and fine needle aspiration become well accepted method with growing interest⁵.

Afterwards to diagnose the tumors wide bore needle was used. The major benefit is that diagnose histologically is made in contrast to diagnose cytologically. Tissue biopsy has benefit that in this method tumors histological classification is possible. Prediction of differentiation and degree of invasion is another advantage⁶. Various types of wide bore needles are available. Recently reported that guidelines and consensus conferences stated that 90% breast lesions should underwent pre-operative sure cut biopsy⁷. In this study, from breast masses specimen take through menghini aspiration biopsy needle (sure cut biopsy needle) and their diagnostic yield was assessed.

MATERIALS AND METHODS

Present study was conducted at Shalamar Hospital, Lahore during 30.05.2017 to 29.12.2017. Total 104 female patients were selected with palpable breast lumps. For the purpose of biopsy take the specimen from lump using 18g, 50mm length Manghini aspiration needle (sure cut biopsy needle). 2% xylocaine, a local anesthesia, was penetrated, assistant fixed the lump. The skin was pierced by needle and moved the needle through hypoderm with vigilant movement, keep needle perpendicular to surface of skin, the syringe plunger

being automatically locked (syringe being aspirated). Keep the syringe in aspiration, needle moved to proper needle depth, then the needle was completely withdrawn, locking device of the syringe plunger was unlocked and take specimen of biopsy from needle lumen directly into bottle of specimen by pushing plunger. At another site in lump this process was repeated. Before sending these specimens to laboratory for histology, these were preserved with formalin. In operation theatre lump was excised after needle biopsy and send to laboratory for histological diagnosis. Sure cut biopsy results were compared to open biopsy.

The correctness of sure cut biopsy was computed as percentage of accurate diagnosis made through sure cut biopsy as compare to final diagnose on excised lump in all the cases.

RESULTS

For histological diagnosis, sufficient specimen was required from 98(94.2%) patients through sure cut biopsy out of total 104 patients.

Table 1: In all cases histological diagnosis by sure cut biopsy:

Sure Cut Biopsy Diagnosis	n
Benign	64
Carcinoma	32
Suspicious	02
Obtaining Insufficient Tissue	06

Table 2: Histological diagnosis through sure cut biopsy verified carcinoma by open biopsy

Diagnosis	n	%age
Benign-False Negative	-	-
Carcinoma	32	94.1%
Suspicious	02	5.9%
Obtaining Insufficient Tissue	-	-

In all cases excision biopsy was done and there was no need for repeat needle biopsy in any case. Insufficient specimen for histological diagnosis labeled by pathologist

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in 6(5.76%) cases. Out of 34 final diagnosis of malignancy cases, 32(94.1%) cases were accurately diagnosed by sure cut biopsy. In 70 benign cases, 64(94.1%) cases were accurately diagnosed by sure cut biopsy needle. 94.1% was the sensitivity of sure cut biopsy while 91.4% was specificity. Sensitivity and specificity difference is not significant statistically. P value is less than 0.05 from calculations when we exclude the cases of obtaining insufficient tissue, the sensitivity was 94.1%, which was same, and specificity was 100%.

Table 3: Histological Diagnosis through Sure Cut Biopsy in 70 Open Biopsy verified Benign Lumps:

Diagnosis	n	%age
Benign	64	9.1%
Malignant-False Positive	-	-
Suspicious	-	-
Obtaining Unsatisfactory Tissue	6	8.6%

Table 4: In all cases accurateness of sure cut biopsy:

Diagnosis	n	Open Biopsy	Sure Cut Biopsy Accurateness
Benign	64	70	91.4%
Carcinoma	32	34	94.1%
Suspicious	02	-	-
Obtaining insufficient tissue	06	-	-

The overall accuracy is 92.3%.

Sensitivity is 94.1%. Specificity is 91.4%.

DISCUSSION

The reason of biopsy is to establish diagnosis. Histological diagnosis is excellent to cytological diagnosis because it can differentiate between non invasive and invasive malignancy. As no hospitalization is required, therefore in breast masses wide bore needle biopsy have advantages over excision biopsy. Further, it can also perform in any clinic or on outdoor basis. This method is well suitable to patients as compare to open biopsy. It is a better alternate of surgical process which have its own complications and problems of a surgical operation. 92.3% overall rate of accuracy of sure cut biopsy was observed. With other some published reports, this overall accuracy rate is comparable.^[8] In other published reports the accuracy is 91%. However, this accuracy rate was higher as compared to other studies in which accuracy rate 84% was reported. 93% sensitivity was reported by Alfonso et al which is also comparable to 94.1% sensitivity of the present study.^[8] Further, in present study the specificity is 91.4% which is remarkable low as compared to 100% specificity reported by Alfonso.^[8] However, if we exclude the insufficient specimens than specificity of present study equal to Alfonso reported specificity.

In this study, there was no any complication showed in sure cut biopsy although formation of hematoma in breast in case of wide bore needle biopsy has reported in literature¹⁰. It is helpful process of patients follow-up with malignancy treated by radiotherapy or chemotherapy. It may also useful process for patients follow-up with unwilling benign tumors or waiting for surgery.

The probability of implantation of needle track by pernicious cells remains theoretical since the needle track

usually include in the mastectomy specimen. Some researchers reported that in case of wide bore needle, there was total freedom from invasion of biopsy track by neoplasm^{11,12}. However, a published study of Denmark reported tumor cells appearance along needle track in patients of breast cancer diagnose by sure cut biopsy in two cases out of forty seven consecutive cases¹³. The other studies assert to have no harmful effect on local reappearance^{14,15}. However, false negative outcomes may obtain possibility of false positive outcomes are minimum. Zero percent false positive results reported in different published reports¹⁵. In present study false positive and false negative results were not obtained. The drawback of this method is that obtained tissue by sure cut biopsy may not be presented of tumor as whole therefore appropriate diagnoses may not possible.

CONCLUSION

Sure cut biopsy method is well accepted to patients. It is simple and safe biopsy method and no need for hospitalization. To decrease the possibility, in this study specimen obtained from two different places in the lump, it is suggested that negative diagnosis cases for malignancy by needle biopsy in presence of clinical suspicious diagnose for carcinoma either repeat needle biopsy or preferable open biopsy should be done.

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