



General Surgery

COMPARATIVE STUDY BETWEEN FNAC AND TRUCUT BIOPSY IN CLINICALLY SUSPICIOUS PALPABLE BREAST LESIONS.

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ABSTRACT **Aims and objectives:** To compare the results of fine needle aspiration cytology (FNAC) and Tru-cut biopsy in order to detect pathology in clinically suspicious palpable breast lumps in outpatient setting. Furthermore, to evaluate the diagnostic usefulness of further histopathological details obtained with tru-cut biopsy, and its effect on preoperative planning of surgical treatment. **Material and methods:** A total of 50 women who presented to surgery OPD from January 2023 to December 2023 with clinically suspicious palpable breast lump at tertiary care medical college hospital in central Rajasthan, India were included in this prospective study. After detailed history and physical examination, both FNAC and tru-cut biopsy were performed in an outpatient setting. **Results:** The sensitivity of F.N.A.C. was 95%, specificity was 100% and diagnostic accuracy was 96% while sensitivity of Trucut biopsy was 100%, specificity was 100% and diagnostic accuracy was 100%. **Conclusion:** Tru-cut biopsy is more accurate than FNAC. Tru-cut biopsy was able to give histological diagnosis and results correlated 100% with final histopathology report, with further information about tumour type, grade, lymph vascular invasion, and receptors status. It also permitted the eventual use of preoperative adjuvant therapy.

KEYWORDS : Breast Malignancy, Breast Lumps, Fine Needle Aspiration Cytology, Tru-cut Biopsy.

INTRODUCTION:

Fine-needle aspiration cytology (FNAC) and Trucut biopsy are both used in the evaluation of breast lesions and play an important role in their management. Fine-needle aspiration cytology is a fast and simple procedure but highly operator-dependent requiring special training on the part of the pathologist. Consequently, a wide range of different results have been reported. [1–3,10] Trucut biopsy takes more time, often requires anesthesia, and, as with cytology, pathologists, radiologists, and surgeons need to be familiar with core biopsy technique to avoid certain pitfalls. [4]

This study compares the results of FNAC and Trucut biopsy taken from the same suspicious palpable breast lesion by the same operator in one session.

MATERIALS AND METHODS:

The study entitled “Comparative study between FNAC and TRUCUT Biopsy in clinically suspicious palpable breast lesions.” was undertaken in Department of Surgery, R.V.R.S Medical College and Associated Group of Hospitals, Bhilwara, Rajasthan, serving the urban and rural population.

From the January 2023 to December 2023 both FNAC and Trucut biopsy was performed on 50 suspicious palpable breast lesions by one person. The first procedure was always FNAC performed with a 21-gauge hypodermic needle on a syringe with application of a vacuum. Trucut biopsy was performed with a 16-gauge needle with a length of the sample notch 1.9 cm on a spring-loaded biopsy gun. Cylindrical cut of tissue of lump sends in 10% formalin for histopathological examination. At the end Finally the diagnosis given by the histopathologist.

Inclusion criteria:

All female with palpable breast mass/lumps undergoing FNAC followed by Trucut biopsy.

Exclusion criteria:

1. Patients with recurrent malignancy.
2. Patients who underwent FNAC but did not give consent for Trucut biopsy.
3. Patients undergoing chemotherapeutic treatment.

These cases were analyses in view of age and sex with detail cytological observation, the cytological result was compared with

Trucut biopsy. The percentage of accuracy, sensitivity, specificity with false negative and false positive result was analyses.

RESULTS:

Table 1: Age wise distribution.

S. No.	Age (yrs.)	Total No. of case	Percentage %
1	20 – 30	10	20
2	31 – 40	10	20
3	41 – 50	15	30
4	51 – 60	5	10
5	>60	10	20

Table 1 shows age wise distribution of 50 cases. The maximum number of case are seen in 5th decade i.e. 15 cases (30%) followed by equally distributed 10 cases (20%) in 3rd, 4th & 7th decade, followed by 5 cases from 6th decade.

Table 2: sex wise distribution.

	No. of cases	Percentage (%)
Female	49	98
Male	1	2
Total	50	100

Table 2 shows in the present study 49 cases (98%) are female subject and 1 cases is male subject

Table 3: shows comparison of diagnostic accuracy in FNAC and Trucut biopsy.

S. No.	F.N.A.C.			Trucut biopsy		
	Benign	Malignant	Inconclusive	Benign	Malignant	inconclusive
Total Cases	10	38	2	8	40	2
True positive	38			40		
True negative	10			8		
False positive	0			0		
False negative	2			0		
Inadequate sample	2			2		
Sensitivity	95 %			100%		
Specificity	100%			100%		
Inadequacy rate	1%			1%		

PPV	100%			100%		
NPV	83.33%			100%		
Diagnostic accuracy	96 %			100%		

Table 3: Shows a comparative study of F.N.A.C. and Trucut biopsy. The sensitivity of F.N.A.C. was 95%, specificity 100% and diagnostic accuracy was 96% while sensitivity of Trucut biopsy was 100%, specificity was 100% and diagnostic accuracy was 100%. In the present study out of 50 cases, inadequate material was obtained in total 2 cases, 2 cases in FNAC and 2 cases in Trucut biopsy. In FNAC total 2 cases were found for false negative reporting i.e. benign pathology which turned to ductal carcinoma in histopathology.

The finding of this study showed that Trucut biopsy is superior to F.N.A.C. in confirming suspicious lumps and it is able to give definite histology with further information about tumor types grade lymph vascular invasion and receptors.

DISCUSSION:

Accurate diagnosis of cancer has been a diagnostic dilemma since long. A differential diagnosis of the benign, traumatic and malignant lesions is very essential in early stages of the disease. It is extremely important that unnecessary surgeries or invasive treatment for benign diseases are minimized, and malignant lesions are managed aggressively in early stages.

The ideal approach for women with suspicious breast lump is the triple assessment approach including clinical, cytology, and mammography, [5] but this assessment is not sufficient for decision of treatment, [6] because FNAC reports still have percentage of uncertainty, also lack important information about the histopathological type, grade, receptors, and intrinsic behaviour of the tumour. All of this information are of great importance for correct preoperative evaluation by both surgeon and oncologist.[7]

Various studies have been done to determine the efficacy and usefulness of both FNAC and tru-cut biopsy; and the results vary. FNAC has been found to have a sensitivity ranging from 84% to 97.5% and a specificity of more than 99% to 100%. In our study the sensitivity of the FNAC to diagnose breast diseases was 95 % and the specificity was 100%. Sensitivity of FNAC obtained by various workers correlate with that work in our study. Tru-cut biopsy was reported to have a sensitivity of around 100% and a specificity 100%.

The Tru-cut biopsy of palpable breast lesions based on histological study of tissue specimens can provide all the reliable information. Trucut biopsy permits a preoperative knowledge of the histological type and prognostic parameters (receptor status, proliferative activity, ploidy, and expression of oncogenes and antioncogenes such as c-erbB-2 and p53), so Tru-cut biopsy will guide the surgeon and the oncologist for ideal modern therapeutic strategy in surgical decision making. [6,9] It also permits the eventual use of neoadjuvant therapy. The sensitivity, specificity, and diagnostic efficacy obtained in our study by tru-cut biopsy were comparable to those obtained with FNAC and to those reported in literature. The high efficacy of core biopsy obtained in our study of palpable lesions, in addition to its simplicity and safety, might also offer a new management strategy for patients with nonpalpable lesions with the use of ultrasound-guided core biopsy. With ultrasound-guided techniques,[8] it can be considered a safe alternative both to lumpectomy and intraoperative biopsy, which should be avoided in nonpalpable lesions. The core biopsy was well tolerated by patients, easy to perform, relatively inexpensive and suitable for use in outpatient clinics.[6]

CONCLUSION:

Tru-cut biopsy is more accurate than FNAC. Tru-cut biopsy was able to give histological diagnosis and results correlated 100% with final histopathology report, with further information about tumour type, grade, lymph vascular invasion, and receptors status. It also permits the eventual use of preoperative adjuvant therapy.

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