"HISTOPATHOLOGICAL CORRELATION OF CORE NEEDLE BIOPSY WITH EXCISION BIOPSY IN CASES OF PALPABLE BREAST LUMPS": RIMS, RANCHI, (JHARKHAND)

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ABSTRACT Breast cancer is the second most common malignancy of women, with over 180,000 new cases diagnosed each year in the United States[1]. However, early breast cancer is asymptomatic, and the only way to detect it is by population-wide screening programs that include regular mammography and physical examination[2].

KEYWORDS : Core, Excision, Biopsy, Carcinoma, Needle, Benign ,malignant.

Introduction :-

Breast cancer is the second most common cancer in women and a leading cause of cancer death world wide. It is a major public health problem for women throughout the world. Breast cancer is a heterogeneous disease with varied morphological appearances, molecular features, behaviour, and response to therapy[3,4].

The presence or absence of carcinoma in a suspicious clinically, radio-logically or pathologically detected abnormality can only be reliably determined by tissue sampling.[3] A biopsy remains the standard technique for diagnosing both palpable and non palpable breast abnormalities. The use of core biopsy for the diagnosis of mammographic abnormalities is cost effective and increases the likelihood that the patient will be able to undergo a single surgical procedure or definitive treatment. Core cutting needle biopsy has many of the advantages of FNA, but provides a histological specimen suitable for interpretation.

Open surgical biopsy is the "gold standard" or "reference standard" method of evaluating a suspicious breast lesion because it is thought to be very accurate in diagnosing these lesions.

Materials and method:-

This study was conducted in the department of pathology, RIMS, Ranchi (Jharkhand) during the period of **August 2012 to December 2017.** A total of 200 cases were included. Core Needle Biopsy of 200 cases was done in the operation theatre and its histopathology was done in Department of Pathology, RIMS, Ranchi. Finally, Haemato - xylin and Eosin stained Core biopsy and Excision biopsy were compared.

Basic core-needle biopsy uses a special 14 and 16-gauge needle (the smaller the gauge, the larger the diameter of the needle). Tissue for histo- pathological examination was obtained in the form of post-operative material.

Results :-

Female patients with palpable breast lump either benign or malignant, of any side (Right or Left or both), in the age group of 15-80 years were included in the study.

TABLE – 1 Distribution of cases in different age groups (200 cases)

Age groups(in years)	No. of cases	Percentage of cases
Less than 20	10	5
21 – 40	110	55
41 – 60	65	32.5
61 – 80	15	7.5
Total	200	100

In this study, the maximum number of 110 cases (55%) was found to be within the age group of 21-40 years, followed by 65 cases (32.5%) in the age group of 41-60 years. 15 cases (7.5%) were from 61-80 years age group while only 10 cases (5%) were from less than 20 years of age group. In this study 120 cases (60%) were from middle class and 80 cases (40%) were from lower class.

Table - 2 Family history of Breast Carcinoma

Family history	No. of cases	% of cases
Positive	70	35
Negative	130	65
Total	200	100

In this study, 70 cases (35%) have positive family history of breast carcinoma and 130 cases (65%) have no significant history.

Table - 3 Relation of breast lump with Parity

Parity	No. of cases	% of cases
Nulliparous	60	30
Multiparous	140	70
Total	200	100

In the present study of 200 cases, 140 cases (70%) were found to be multiparous women and 60 cases (30%) were nulliparous.

Table - 4 Laterality of lump

Laterality	No. of cases	% of cases
Right side	50	25
Left side	140	70
Bilateral	10	5
Total	200	100

In the present study of 200 cases of Breast lump, 140 cases (70%) were found to be in the left side and 50 cases (25%) were in the right side. Only 10 cases (5%) presented bilaterally.

Table - 5 Pattern of lump

Pattern	No. of cases	% of cases
Localised	50	25
Diffuse	150	75
Total	200	100

In this study, pattern of lump were found to be diffuse (vague) in 150 cases (75%) and localised (circumscribed) in 50 cases (25%).

Table - 6 Finding of Core Biopsy in breast lump

Category	No. of cases	% of cases
Benign	40	20
Malignant	120	60
Inconclusive	40	20
Total	200	100

In this study, results of Core Biopsy were compared. 120 cases (60%) were malignant lesion, 40 cases (25%) were benign lesion, and 40 cases (15%) were found to be inconclusive.

TABLE- 7 Finding of excision biopsy in breast lump

Category	No. of cases	% of cases
Benign	50	25
Malignant	145	72.5
Inconclusive	5	2.5
Total	200	100

In this study, 145 cases (72.5%) were malignant lesion, 50 cases (25%) were benign lesion and 5 cases (2.5%) were inconclusive.

TABLE- 8

Category	Mean	S.D	t-value	p-value
Excision biopsy	66.25	8.83	-6.6	0.02
Core biopsy	25	0.01		

These values are calculated on the basis of percentage of benign and malignant cases. Thus according to p-value (0.02), a statistically significant correlation was observed between benign and malignant cases diagnosed by Core and Excision biopsy.

Discussion:-

Francis et al (1996) noticed that the peak incidence of carcinoma breast was in the age group of 51-60 years. **Ellis IO et al (2000), Kumar Vinay et al (2004), Hugher LE et al (1985)** also recorded the peak incidence of breast carcinoma in peri -menopausal women (40-50 years).

According to recent UK incidence statistics, nearly half (48%) of cases of breast cancer are diagnosed in the age group of 50- 69 years. According to NHS breast cancer screening programme in U.K, breast cancer is rare in women in their teens or early twenties and uncommon in women under 35. After this age, the risk begins to increase, rising sharply after the menopause. In cross-sectional studies of adult populations done by **American Cancer Society 2012**, 5% to 10% of women have a mother or sister with breast cancer, and about twice as many have either first-degree relatives or second-degree relatives with breast cancer. The risk conferred by a family history of breast cancer has been assessed in both case-control and cohort studies, using volunteer and population-based samples, with generally consistent results. In a pooled analysis of 38 studies, the relative risk (RR) of breast cancer conferred by a first-degree relative with breast cancer was 2.1 (95% confidence interval [CI], 2.0–2.2). Risk increases with the number of affected relatives and age at diagnosis.

The sensitivity of NCB for malignancy was 87.7%, with a specificity and positive predictive value of 99.3% and 98.5%, respectively. The sensitivity of excision biopsy range from 98-99%.

Conclusion:-

Breast cancer is a heterogeneous disease with varied morphological appearances, molecular features, behaviour, and response to therapy [1,2]. The primary goal of initial biopsy of any abnormality is to diagnose the abnormality as benign or malignant[5].

A total number of 200 cases with palpable breast lump were observed during the study period. All the 200 cases were selected for core and excision biopsy. Out of which, 145 malignant cases of infiltrating ductal carcinoma (NOS) and 10 cases of infiltrating lobular ca were diagnosed on **excision biopsy**. 40 cases were inconclusive (**core biopsy**) i.e. unsatisfactory/ normal on core biopsy but were malignant on excision biopsy.

Core needle biopsy is of great value but it has its own limitations also -

I.) It requires operation theatre. It can only be done under local anaesthesia.

ii.) It's a time taking process; from fixation, processing and staining of slide.

iii.) Core biopsy failure may occur due to inadequate sampling, needle entry into normal site, cell morphological alteration by compression by the hollow canal.

Therefore, Excision biopsy remains the standard technique for diagnosing both palpable and non palpable breast abnormalities.

References:-

1. Sorlie T, Tibshirani R, Parker J, et al. Repeated observation of breast tumor subtypes in independent gene expression data sets. Proc Natl Acad Sci U S A 2003;100(14):8418.
2. Devita, Hellman and Rosenberg, CANCER, Principles and Practice of Oncology; 8th editon: 43.
3. Perou CM, Sorlie T, Eisen MB, et al. Molecular portraits of Rakha EA, Ellis IO. An overview of assessment of prognostic and predictive factors in breast cancer needle core biopsy specimens. J Clin Pathol 2007 Dec;60(12):1300-1306. PMID: 17630399
4. Bluemke DA, Gatsonis CA, Chen MH, et al. Magnetic resonance imaging of the breast prior to biopsy JAMA 2004;292(22):2735.
5. Rakha EA, Ellis IO. An overview of assessment of prognostic and predictive factors in breast cancer needle core biopsy specimens. J Clin Pathol 2007 Dec;60(12):1300-1306. PMID: 17630399.