

FINE NEEDLE ASPIRATION CYTOLOGY OF BREAST LESIONS : AN ASSESSMENT

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SUMMARY

Two hundred nine cases of breast lesions were subjected to Fine Needle Aspiration Cytology (FNAC). The study revealed that fibrocystic disease of breast (FDB) outnumbered (35%) all lesions; malignant lesions of breast and fibroadenoma (25.5% and 15% respectively) were next in order of frequency. Incidence of different types of lesions were almost equal in both the breasts having 40.7% and 41.2% incidence. 87 of the total number of 209 cases were not confirmed by H P study. Of them 49 cases were confirmed therapeutically by anticancer therapy in cases of malignancy; by hormones and vit E therapy in FDB cases. False observation was noted in 20 cases by subsequent H P examination. False positive was only 10% out of 20 and false negatives were the bulk (90%). Analysis of this fallacy and the possible causes were discussed.

Introduction

Since the introduction of Fine Needle Aspiration Cytology (FNAC) in Scandinavian countries (Zajicek, 1965) for the purpose of preoperative microscopic diagnosis, it is gaining importance and wide acceptance.

This study has been undertaken to assess the accuracy of the procedure in diagnosing breast lumps particularly in malignant conditions of breast which is second common malignancies among females in India (Jussawalla & Gan-

gadharan, 1974).

Materials and Methods

A total of 209 cases of breast lumps were subjected to FNAC during the period of March 1987 to March 1989. The monolayer smear technique of Zajicek et al, 1970 and H & E stains were routinely followed. Specials stains like May Grunwald stain, PAS stain, stain for Iron, stain for AFB etc were done as and when necessary. Histopathology could be done in 122 cases out of 209 cases after incisional or excisional biopsy, and H P correlation could not be done in 87 cases.

Results and Comments

Among 209 cases the distribution of lesions were almost equal in right (40.7%)

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and left (41.2%) breasts (Table I). Simultaneous lesions in both breasts were also not insignificant (17.6%) which showed fibrocystic disease of breast (FDB) having 20.5%, benign neoplastic lesions of breast (6.5%) and only 1 case of tuberculosis. (Table I). In order of frequency, the present study recorded, FDB (35%), malignant neoplasm (25.4%) fibroadenoma (15%), abscess of breast (11.5%) and cysts of breast (7.5%) out of total 209 cases. (Table I).

Thus the observation of highest number of FDB followed by malignant lesions and fibroadenoma of breast are contrary to the findings of Dandapat & Panda, 1986, who had more than 50%

cases of malignancies (48 out of 81 cases). But the present study is in agreement with the observations of Sreenivas et al, 1989 having 3/4th of lesions to be benign and rest 1/4th of the lesions to be malignant.

Correlation of FNAC diagnosis with HP diagnosis could be done in 122 cases only (Table II). Of the total number, 38 cases (19.1%) did not turn up subsequently for HP study. Of them 16 cases were malignant and 20 cases were benign lesions as diagnosed by FNAC. In other 49 (23.4%) cases HP was not done as those were not surgically treated. Among them, 19 cases were clinically inoperable carcinomas and

TABLE I

Lesions of breast	Site of lesion				Total	
	Right	Left	Both	Axill.tail	No	%
Malignant neoplasm	28 (50.9)	27 (49.1)	-	-	55	25.5
Fibroadenoma	10 (32.3)	19 (61.2)	2 (6.5)	-	31	15.0
Fibrocystic disease	23 (28.7)	37 (50.8)	15 (20.5)	-	73	35.0
Retention Cyst	7 (46.6)	8 (53.3)	-	-	15	7.5
Lipoma	-	1 (100)	-	-	1	0.5
Tuberculosis of breast	3 (60.0)	1 (20.0)	1 (20.0)	-	5	2.4
Filariasis of breast	-	1 (100)	-	-	1	0.5
Abscess	13 (52.0)	10 (40.0)	1 (4.0)	1 (4.0)	25	11.5
Neurofibroma	1 (100)	-	-	-	1	0.5
Dry tap	-	2 (100)	-	-	2	1.5
Total	85	96	20	1	209	99.9
%	40.7	41.2	17.6	0.5	100	

Figure in paranthesis indicate percentage of total of individual lesions.

were treated by anticancer therapy showing regression. The other 30 cases were FDB and mostly in the peripubertal age. They were treated with hormone and Vit E showing good result as was noted by London et al, 1980 and 1982, and Khanna et al, 1983. Subjective parameters were relief of pain, heaviness and tenderness, objective parameters were reduction of nodularity of the breast by palpatory examination. But in 5 of these cases the diffuse lump disappeared after therapy and a small mobile residual lump was noted. This was diagnosed as fibroadenoma on subsequent FNAC and then treated surgically and confirmed by HP. (Table II). In nearly half of the cases (46.4%), the FNAC diagnosis was corroborated by HP examination (Table II). The total number of false positive/negative by FNAC came out in 9.6% cases out of 122 cases on HP. Therapeutic response without HP study was noted in 49 cases as already mentioned earlier. This indirectly increases the number of confirmed FNAC

diagnosis from 46.4% to 69.8%. Thus the incidence of false diagnosis / confirmed diagnosis becomes comparable with other authors like Furnival et al, 1975; Kreuzer & Boquoi, 1976; Coats et al, 1977 and Dandapat et al, 1986. (Table II).

Out of 20 cases (9.6%) of false positive/negative, 2 were of malignant neoplasms and rest 18 were of miscellaneous conditions. False negative diagnosis were mainly confined to miscellaneous group and practically negligible (3.6%) in malignant lesions which very nearly corroborated the results of Zajdela et al, 1975; Kline, 1981 and Dandapat et al, 1986. (Table II).

The present study did not reveal any false diagnosis with benign neoplasms and FDB, but Kline 1981 claimed the poor diagnostic ability with FDB. (Table II).

Analysis of false diagnosis on malignant neoplasm (Table III), reveal that 2 cases were false positives fibroadenosis by HP, 8 cases were false negative (chronic

TABLE II
CORRELATION OF FNAC DIAGNOSIS WITH HISTOPATHOLOGICAL DIAGNOSIS.

FNAC Diagnosis		Histopathological diagnosis			Therapeutic Confirmation
		CONFID	False POS/NEG	Not done	
Malignant neopl	{55}	18 (32.7)	2 (3.6)	16 (28.8)	19 (34.6)
Benign neopl	{31}	21 (67.7)	-	10 (32.3)	-
FDB	{73}	33 (45.2)	-	10 (13.7)	30 (41.1)
Miscellaneous/ Cyst/Inflamma	{50}	30 (60.0)	18 (36.0)	2 (4.0)	-
Total	{209}	102 (46.4)*	20 (9.6)*	38 (19.1)*	49 (23.4)*

Figure in ()* indicate percentage of total 209 cases.

Figure in () indicate percentage of total of individual lesions.

Figure in { } indicate total number of individual lesions.

CONFID = Confirmed diagnosis. FALSE POS/NEG = False positive/Negative.

TABLE III
ANALYSIS OF FALSE DIAGNOSIS BY FNAC

FNAC Diagnosis		H P Diagnosis	
Malignant neoplasm	(2)	Fibrocystic disease of breast	(2)
Chronic nonspecific Inflammation	(5)	Malignant neoplasm	(5)
Tuberculous lesion	(3)	Malignant neoplasm	(3)
Milk cyst	(10)	Fibroadenosis of breast	(10)

Figure in () indicate number of cases.

inflammation (5) and tuberculous lesions (3) by HP). FNAC diagnosis of 10 cases of milk cysts were diagnosed as FDB by subsequent HP examination. (Table III).

The probable causes of failure, on further analysis, came out to be as follows:

a) The atypical proliferation of glandular epithelium having epitheliosis in FDB was mistaken for malignancy. Also it is now known that the subgroup of FDB susceptible to become malignant shows intraductal hyperplasia, sclerosing adenosis or papillomatosis (Wertheimer, 1984).

b) Aspiration of necrotic material and inflammatory cells in plenty misled to the false diagnosis of chronic nonspecific inflammation in cases of malignancy.

c) Aspiration of caseous like material and presence of macrophages from necrotic site of malignancy misled to the diagnosis of milk cysts in cases of fibrocystic disease of breast.

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