Journal of Cardiovascular Disease Research

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 01, 2024

Study of breast cytology in a tertiary care centre based on Yokohama sytem of reporting breast cytology.

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Abstract

A total of 200 cases were studied over an 18 month period from March 2022 to September 2023. The lesions were reclassified based on the Yokohama system of reporting breast cytology. Prior to the introduction of the new system, breast cytology was reported using the corresponding histological diagnosis which may not be appropriate for the limited diagnostic material and sampling issues assosciated with cytology reporting. Also the cytology reports did not offer any risk of malignancy or management guidelines to the treating clinician for further patient management. The YSRBC attempts to overcome these limitations. Hence, this study was attempted to validate the feasibility of incorporation of the new system in routine cytology reporting.

Introduction

A group of cytopathologists with expertise in breast cytology was assembled by the International Academy of Cytology (IAC), and together with doctors skilled in breast diagnosis and treatment, they created the IAC Yokohama System for Reporting Breast Fine-Needle Aspiration Biopsy (FNAB) Cytology. The first meeting of the cytopathology group during the 2016 International Congress of Cytology in Yokohama marked the beginning of the initiative. Five categories are defined by the IAC Yokohama System for reporting breast cytology. Each category has a definition, a risk of malignancy (ROM), a clear descriptive phrase, and a recommended care algorithm. The system highlights that high standards for FNAB performance and direct smear preparation, as well as skilled and experienced cytopathologists to interpret the results, are essential for diagnostic breast FNAB cytology. The performance metrics for breast FNAB, which include ROM, negative predictive value, positive predictive value, and specificity and sensitivity, were obtained from current research and presented in this study. Rapid on-site examination and the growing use of ultrasound guidance have led to changes in the current practice of breast FNAB. A range of ROM for the insufficient/inadequate group is 2.6–4.8%, benign 1.4–2.3%, atypical 13–15.7%, suggestive of malignancy 84.6–

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97.1%, and malignant 99.0–100%, according to two recent papers. Because there are variations in the way breast lesions are managed using FNAB and core-needle biopsy in those countries that use the "triple test" of clinical, imaging, and FNAB assessment, as well as differences in the accessibility of CNB and imaging in low- and middle-income countries, the management algorithm in the System offers options. The System was expected to encourage more debate and investigation, especially into the management suggestions and the cytological diagnostic characteristics of particular lesions within each group. This may result in potential changes to the IAC Yokohama System as well as ongoing advancements in the treatment of patients with breast lesions.[1][2][3].

Material and methods:

A total of 200 cases were studied over a 18 month period from March 2022 to September 2023. The demographics, clinical details and cytological diagnosis were obtained from the departmental records.

The cases were reclassified based on the Yokohama system of reporting breast cytology 2016.

Table1.

10-19	27
20-29	60
30-39	41
40-49	39
50-59	19
60-69	09
70-79	04
80-89	01

Table 2

Insufficient for a definite diagnosis	12
Benign	136
Atypia of undetermined significance	22
Suspicious for malignancy	09
Malignant	21

Table. Subclassification of benign entities

Duct Ectasia	06
Galactocoele	07
Fibrocystic disease	49
Fibroadenoma	74

Table. Subclassification of malignant entities

Ductal carcinoma,NOS	21

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Results:

200 cases of breast carcinoma were studied over an 18 month period from March 2022 to September 2023. The most common age group involved was 20 -29 years. 12 cases were classified as insufficient for diagnosis, 136 cases as benign, 22 cases as atypia of undetermined significance, 9 cases as suspicious for malignancy and 21 cases as malignant according to the Yokohama system of breast cytology.

Discussion:

The International Academy of Cytology (IAC) brought together a panel of cytopathologists with experience in breast cytology, and in collaboration with medical professionals proficient in breast diagnosis and treatment, they developed the IAC Yokohama System for Reporting Breast Fine-Needle Aspiration Biopsy (FNAB) Cytology. The endeavor started with the cytopathology group's inaugural meeting at the 2016 International Congress of Cytology in Yokohama. The IAC Yokohama System for reporting breast cytology defines five categories. A definition, a risk of malignancy (ROM), a succinct description, and an algorithm for suggested care are provided for each group. The System emphasizes the need for highly qualified cytopathologists to evaluate the results and high requirements for FNAB performance and direct smear production in order to facilitate breast cancer diagnosis.The study's specificity, sensitivity, and positive predictive value were gathered from recent studies. The modern standard of breast FNAB has changed as a result of rapid on-site assessment and the expanding application of ultrasound guidance. Two recent articles have reported that the range of ROM for the insufficient/inadequate group is 2.6–4.8%, benign 1.4–2.3%, atypical 13–15.7%, indicative of malignancy 84.6–97.1%, and malignant 99.0–100%. The management algorithm in the System provides options because there are differences in the accessibility of CNB and imaging in low- and middle-income countries, as well as differences in the management of breast lesions using FNAB and core-needle biopsy in those countries that use the "triple test" of clinical, imaging, and FNAB assessment. The System will promote further discussion and research, particularly about the therapy recommendations and the cytological diagnostic features of specific lesions within each category. This could lead to continued improvements in the treatment of patients with breast lesions as well as possible modifications to the IAC Yokohama Syste

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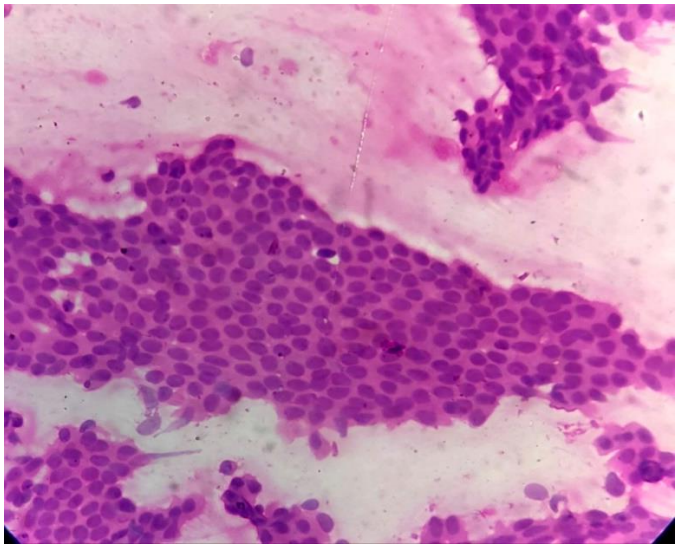

Fig 1. Monolayered sheets and clusters of benign ductal epithelial cells along with bare nuclei.(Hand E, 40x)

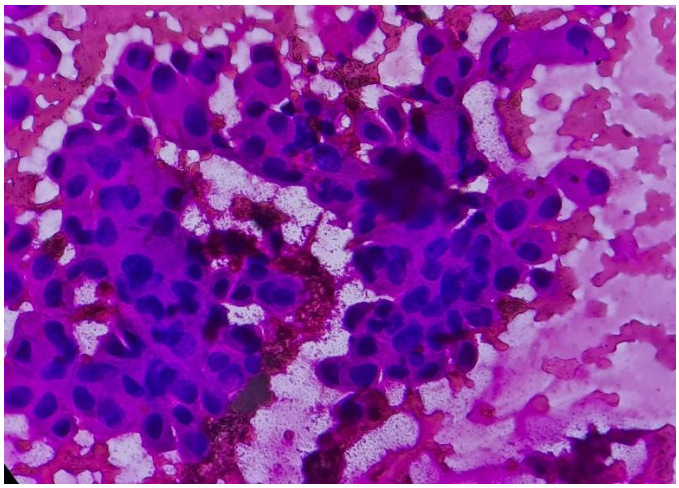

Fig 2. Dyscohesive clusters of ductal epithelial cells exhibiting overcrowding of nuclei, anisonucleosis and prominent nucleoli..(Hand E, 40x)

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ISSN: 0975-3583,0976-2833 VOL15, ISSUE 01, 2024

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