

Cytopathological Aspects of Breast Discharge in Women without Palpable Breast Mass in Yaounde, Cameroon

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Abstract

Objective: Describe cytopathological characteristics of nipple discharge.

Methods: Four years retrospective cross-sectional study in Yaounde, Cameroon. We included all complete files of adult women with cytopathological analyses of breast discharge without palpable mass.

Exclusion Criteria: Pregnant or breastfeeding women, puerperium and first 4 weeks post-abortum. Cytological modifications were classified as benign or malignant.

Results: We retained 153 cases. Mean age was 41.2+/-14.4 years. Cytological modifications were malignant in 27 (17.65%) and benign in 126 (82.35%) cases. Of the 27 malignant cases, 18 (11.77%) were carcinomas and 9 (5.88%) were lymphomas. Upon histological analyses, all suspected lymphomas were confirmed while only 1 case of suspected carcinoma turned to be an atypical ductal hyperplasia. Of the 126 cases with benign modifications, 54 (35.29%) had inflammatory lesions, 48 (31.38%) had non inflammatory lesions and 24 (15.69%) had papillomas.

Conclusion: Cytology of breast discharge can enhance early detection of breast cancers.

Keywords: Cytopathology, Cytology, Breast discharge, Carcinoma, Inflammation, Cameroon.

Introduction

Breast cancer is the most frequent malignant tumor in women. The World Health Organization (WHO) in 2012 estimated that it constituted 11.9 % of all malignant neoplasias worldwide and 23.0% of all cancers in women in less developed countries.¹ In Cameroon, cancers of the breast and the uterine cervix occupy the top position of the list of female cancers, each representing 11%.² Unfortunately, majority of breast cancers are discovered lately with poor prognosis.³ Breast

discharge out of the breastfeeding context can be an early manifestation of the disease, but this symptom is often neglected by women until a palpable mass appears which will lead to a medical consultation. Breast discharge can be due to inflammatory diseases, benign and malignant lesions.⁴ We did not find data on cytopathology of breast discharge in absence of palpable mass in Cameroon. This study aims to provide preliminary data and to highlight to which extent cytology of breast discharge could contribute to the early detection of breast cancer in women.

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Materials and Methods

This retrospective and cross-sectional study was carried out in the unit of pathology of the Yaounde Gyneco-Obstetric and Pediatric Hospital (YGOPH) during four years (January 1, 2009 to December 31, 2013). The YGOPH is a university teaching and a reference hospital, specialized in breast and gynecologic cancers. Cytopathological reports, registers and clinical files of women seen for breast discharge without a clinical nodule or breast mass were examined. Conventional smear was routinely performed in the laboratory with 95 % alcohol fixation and stained following the Papanicolaou's method. The slides were examined by two pathologists. Patients with unilateral or bilateral breast discharge, either spontaneous or following mild expression, without any clinically palpable nodule or mass were enrolled in the study. We excluded pregnant women, breastfeeding women, women in their puerperal period (first six post-partum) and women in the first 4 weeks following abortion. Data retrieved were anonymously compiled on a pre-tested

technical form. Analysis was done by a statistician using SPSS version 13[®] software.

Results

Socio-demographical Characteristics

A total of 153 women, 18 to 78 years old, were enrolled in the study. Mean age was 41.2+/-14.4 years. Twenty-one of our participants (13.7%) were under hormonal contraceptives at the time of diagnosis.

Macroscopic Aspects of Discharge

As shown in table 1, breast discharge was unilateral in 129 cases (84.3%) and bilateral in 24 cases (15.7%). Out of the 153 cases, discharge was bloody in 72 (47.1%) cases, milky in 54 (35.3%) cases, serous in 15 (9.8%) cases and brown in 12 (7.8%) cases.

This table shows clinical aspects of breast discharge. Bilateral breast discharge accounted for 129 out of 153 cases (84.3%). Discharge was bloody in 72 out of 153 cases (47.1%).

Clinical characteristics	Frequencies (%)
Type of breast discharge	153 (100%)
Unilateral	24 (15.7%)
Bilateral	129 (84.3%)
Aspects of the secretions	153 (100%)
Milky	54 (35.3%)
Bloody	72 (47.1%)
Clear serous	15 (9.8%)
Brown	12 (7.8%)
Contraceptive methods	153 (100%)
None	117 (76.5%)
Hormonal	21 (13.7%)
Intra-uterine device	15 (9.8%)

N=153

Table 1. Clinical aspects of breast discharge

Microscopic Aspects of Discharge

Cytological analysis of smears (table 2) revealed that 27 out of 153 (17.6%) cases were malignant lesions. Malignancies were dominated by carcinomas that accounted for 18 out of 27 cases (88.9%). 54 out of 153 (35.29 %) smears were inflammatory, 24 (15.68 %) were consistent with

papilloma and 48 (31.38 %) were non inflammatory.

This table shows proportions of different cytological lesions. Cytological lesions observed were mainly benign (82%). 89% of malignant lesions were carcinomas.

Types of lesions	Frequencies (%)
Malignant lesions	27 (17.6%)
Carcinoma	24 (15.9%)
Lymphoma	3 (1.7%)
Benign lesions	126 (82.4%)
Inflammatory lesion	54 (35.3%)
Papilloma	24 (15.7%)
Non inflammatory lesion	48 (31.4%)
Total	153 (100%)

Table 2. Distribution of cases following cytological lesions

Furthermore, all the cases with malignant cytology were hemorrhagic (table 3). The hemorrhagic aspect of the discharge did not point to malignancy as 45 cases of hemorrhagic discharge out of 72 (62.5%) were non malignant, but presented mainly non inflammatory lesions (30 cases out of 72 (41.7%)).

This table shows the distribution of cytological lesions following aspects of discharge. Milky discharge consisted mainly of inflammatory lesions (39 out of 54). Two thirds of brownish discharges were papillomas. All carcinomas were observed in bloody discharge.

Aspects of discharge	Cytological abnormalities					Total
	Carcinoma	Lymphoma	Inflammatory Lesions	Papilloma	Non inflammatory lesions	
Milky	0	0	39	3	12	54
Bloody	24	3	6	9	30	72
Serous	0	0	9	6	3	18
Brown	0	0	0	6	3	9
Total	24	3	54	24	48	153

Table 3. Distribution of cytological lesions according aspects of discharge

Malignant cytology affected patients (women) aged between 39 and 58 years while inflammatory pathology concerned all age groups (table 4).

cytological lesions. Two thirds of carcinomas (12 out of 18 cases) and lymphomas (6 out of 9 cases) were observed in women aged between 39-58 years. Mean age was 41.2+/-14.4 years.

This table shows the age distribution of

Age (years)	Cytological abnormalities					Total
	Carcinoma	Lymphoma	Inflammatory Lesions	Papillomas	Non Inflammatory Lesions	
18-38	3	3	36	15	18	75
39-58	18	0	15	6	18	57
59-78	3	0	3	3	12	21
Total	24	3	54	24	48	153

Table 4. Age-wise Distribution of cytological abnormalities age

Discussion and Conclusion

Breast discharge is a common complain during consultation in specialized unit.^{5,6} Several aspects of nipple discharge have been described: milky, multicolored and sticky, purulent, clear and watery, yellow or serous, pink or sero-sanguinous, bloody or sanguinous.⁶ In developed countries, patients with breast discharge consult early while in developing countries like Cameroon, this symptom is usually neglected by patients who seek medical advice late after its onset.³ A study has shown that 70 to 80 % of breast cancers in

Cameroon are discovered at late stages with poor prognosis.³ The proportion of breast discharge varies from 2 % to 17 %.^{2,6,7} We did not find data on breast discharge in our environment. The sensitivity and specificity of cytology in breast cancer are high: 97.7% and 98.8% respectively.⁸ In low resource health settings, particularly in rural areas, cytology report could be used for the selection of cases of cancer to be referred in specialized centers.

Our smears were obtained from spontaneous secretions or by mild expression of the breast. The

simple intraductal aspiration method by intravenous catheter though reported to be more accurate for cytodiagnosis,⁹ was not routinely used in Cameroon and its extension to rural areas could be difficult.

Our series included 153 patients aged from 18 to 78 years with a mean age of 41.2 +/-14.4 years though some authors have reported cases of breast discharge under 18 years old.^{6, 10} Non cancerous breast discharges were predominant in our series (126 out of 152 (82.4%)). They were all observed before 48 years. This proportion is high compared to what is observed in some developed countries; in New Zealand, Gupta et al. observed 64.2% benign secretions, 6.6% inflammatory modifications, 15.8% papilloma and 42.9 % benign non inflammatory lesions.⁵ In our series, non inflammatory modifications accounted for 35.3% (48 out of 153) cases, papilloma accounted for 15.7% (24 out of 153) and inflammatory lesions accounted for 31.4% (54 out of 153). The high proportion of inflammatory lesions may be due to poor hygienic conditions, leading to infections, cracks and abscesses.

Malignant smears represented 17.7% of our cases including 1.8% lymphomas. Out of the 24 cytologically diagnosed cases of carcinoma, 23 (95.8%) were confirmed by histology and 1 case turned to be an atypical ductal hyperplasia. All cases of lymphoma were confirmed by histology. The proportion of lymphomas (1.8 %) may appear to be high but seems to be in relation with the level of prevalence of HIV (Human Immunodeficiency virus) infection that is 5.6 % in Cameroon.¹¹ Indeed, out of the three cases of lymphoma, 2 were HIV positive.

The mean age of carcinomas in our series was 43 years, which is close to that observed in Togo and Ivory Coast.^{12,13} This observation may be explained by the fact that life expectancy of women is lower in developing countries like Cameroon. Moreover, patients with breast cancer in Cameroon are younger than in rich countries.^{3, 14}

Bilateral discharge accounted for 84.3% (129 out of 153) of cases and all of them had benign cytology. This may be explained by the fact that 80% of breast carcinomas are ductal cell carcinomas and are usually unilateral in Cameroon.³ The bloody and milky aspects were predominant, accounting for 47.1% (72 out of 153) and 35.3% (54 out of 153) of cases respectively. This is variable from one study to

another as it partly depends on breast infectious and inflammatory process.^{6,15-17}

Hormonal contraceptives were used by 13.8 % (21 out of 153) of participants. The influence of these drugs on breast cancer in the Cameroonian female population is not known and the protective role of multiparity is questionable as most women with breast cancer in Cameroon and other African countries are multiparous.¹⁸⁻²⁰

Cytopathological examination of breast discharge may contribute to early detection of breast cancer in Cameroon. This is based on the fact that smears could be performed in rural remote areas with low level health facilities and then sent to specialized laboratories for screening and diagnosis. Patients with cancer or with suspicious smears could then be sent to reference hospitals for appropriate management.

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