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# Epidemiological, Clinical and Therapeutic Aspects of Benign Mastopathy in Adolescent Girls in the Gynecology Department of the University Hospital of Treichville

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## Abstract

**Introduction:** Benign mastopathy encompasses all non-cancerous alterations within the breast glandular tissue. These conditions are prevalent among young premenopausal women, with breast adenofibromas being the most common. The diverse clinical presentations and prognostic implications of benign mastopathies necessitate a varied therapeutic approach. This study aimed to investigate the frequency, sociodemographic characteristics, and clinical and therapeutic aspects of benign mastopathies. **Patients and Methods:** This retrospective descriptive study was conducted over a seven-year period within the gynecology department of Treichville University Teaching Hospital. Adolescent girls diagnosed with benign mastopathy and followed in the department were included in the study. Parameters analyzed included sociodemographic, clinical, paraclinical characteristics, and treatment modalities. Quantitative variables were expressed as mean ± standard deviation, while qualitative variables were presented as proportions. **Results:** The incidence of benign mastopathy was 13.29%. The mean age of adolescent girls was 17.03 years, with the majority (most) falling within the 16 - 19 age group. The primary reasons for specialist consultation were nodules (58.78%) and breast pain (21.10%). Lesions were predominantly located on the right side in 38.46% of cases. The upper-outer quadrants (left: 29.8%, right: 19.2%) were most commonly affected. Breast nodules were present in 77.9% of cases. No axillary adenopathies were observed. Breast ultrasound was the most frequently performed paraclinical examination (61.6%). Adenofibromas were detected in 62.5% of cases. Histological analysis of Tru-cut biopsies and cytological examination of fine-needle aspiration biopsies revealed adenofibromas in 62.5%

and 75% of cases, respectively. **Treatment:** Medical management was employed in 43.27% of cases, surgical intervention in 39.42%, and a watchful waiting approach (therapeutic abstention) in 17.31%. **Conclusion:** Benign mastopathies are frequently encountered in breast consultations, and breast ultrasound serves as the gold standard diagnostic imaging modality. Fibroadenoma is the most prevalent histological subtype.

## Keywords

Benign Mastopathy, Adolescent, Adenofibroma

## 1. Introduction

Benign mastopathy encompasses all non-cancerous alterations within the glandular tissue of the breast. It is a hormone-dependent condition that predominantly affects young premenopausal women [1] [2].

Common types of benign mastopathy include fibrocystic changes, adenofibromas, papillomas, Aschoff's nodules, and cysts, among others. These conditions are observed in both developed and developing countries [3].

Among these conditions, breast adenofibromas are the most prevalent, constituting 75% of cases in women under 20 and 50% of all breast biopsies overall [4].In Guinea Conakry, a study conducted in the surgical departments of Ignace Deen Hospital revealed a predominance of benign tumors (63.2%) compared to malignant forms (36.8%) [5]. In Benin, benign breast tumors account for 75% of all breast tumors, with fibroadenoma constituting 59% of these benign tumors [6].

The wide spectrum of clinical presentations and prognostic implications of benign mastopathies necessitates a varied therapeutic approach [3]. In sub-Saharan Africa, and specifically in Côte d'Ivoire, limited research has been conducted on benign mastopathy, particularly among adolescent girls. This study aimed to determine the frequency, socio-epidemiological characteristics, clinical manifestations, and therapeutic approaches associated with benign mastopathy in adolescent girls.

## 2. Patients and Methods

This retrospective, cross-sectional descriptive study was conducted over a seven-year period (January 2015 to December 2021) within the gynecology department of Treichville University Teaching Hospital. The study focused on adolescent girls who presented with breast-related concerns during this period.

Inclusion Criteria: Adolescent girls who sought consultation at the department for breast problems and were subsequently diagnosed with benign breast disease were included in the study.

Exclusion Criteria: Adolescent girls who were lost to follow-up or had incomplete medical records were excluded from the study.

Data Collection: The parameters investigated included sociodemographic characteristics, menstrual cycle patterns, clinical manifestations, paraclinical findings, and treatment modalities. Data were collected using a structured survey form.

Data Analysis: Data were processed using Microsoft Word, Office 2011, and Epi Info 6.0 software. Quantitative variables were presented as mean ± standard deviation.

## 3. Results

During the study period, 113 adolescents were initially identified with benign mastopathy among 850 patients who presented with breast-related concerns. After applying the inclusion criteria, 104 patients were included in the final analysis, resulting in a benign mastopathy frequency of 13.3%.

The mean age of the adolescent participants was 17.03 years, with an age range of 12 to 19 years. The majority of patients (76%) were aged 16 - 19 years.

Regarding educational background, secondary school was the most common level of education (77.88%). The majority of participants (92.31%) belonged to the average socioeconomic level.

Finally, 96.15% of the participants were single.

The gynaecological and obstetric history is described in Table 1 below.

**Table 1.** Gynaecological and obstetrical history of the study participants.

| History of gynaecology and obstetrics | Numbers | % |
|---|---|---|
| Menarche | | |
| before 14 years | 100 | 96.2 |
| [15 - 19 years] | 4 | 3.8 |
| Menstrual cycle | | |
| Regular | 50 | 48.1 |
| Irregular | 54 | 51.9 |
| Gestity | | |
| Nulligravida | 99 | 95.2 |
| Primigravida | 3 | 2.9 |
| Paucigravida (2-3) | 2 | 1.9 |
| Parity | | |
| Nulliparous | 101 | 97.1 |
| Primiparous | 3 | 2.9 |
| Notion of contraception | | |
| Yes | 1 | 1.0 |
| No | 103 | 99.0 |
| If yes, please specify | | |
| Oestroprogestatif | 1 | 1.0 |

89.6% of the adolescent girls had no family history of benign or malignant breast disease.

On questioning, lesions were discovered by autopalpation in 90.38% of cases. Nodules and breast pain were the most common reasons for consultation in 58.8% and 21.1% of cases respectively.

Nodules associated with breast pain, breast swelling and breast discharge were found in 11.5%, 5% and 1.9% respectively, and more rarely breast pruritus in 1% of cases. The delay between the date of discovery and consultation was greater than six months in 39.4% of cases. No treatment had been carried out prior to the consultation in 97.1% of cases.

There were no skin abnormalities adjacent to the lesion in 93.3% of cases. The lesions were mostly found on the right in 38.5% of cases. The upper and lower quadrants were most affected in 29.8% and 19.2% of cases respectively. Breast nodules were present in 77.9% of cases. The nodules were located in both the right and left breast. They were firm (90.1%), regular (90.1%), single (67.9%), mostly between 2 and 5 cm in diameter in 65.4% and mobile in 98.8% of cases. There were no axillary adenopathies in 99% of cases.

Among the 104 teenagers who consulted, a complementary paraclinical examination was required in 82.7% of cases.

Breast ultrasound was the most commonly used paraclinical examination in 61.6% of cases. However, ultrasound combined with Tru-cut biopsy and mammography were performed in 7.7% and 4.8% of cases, and more rarely, ultrasound combined with fine needle aspiration biopsy. Cytobiopsy and microbiopsy were performed in 2.9% and 3.8% respectively.

Breast ultrasound suspected adenofibromas in 62.5% of cases. Mammary cysts, fibrocystic mastopathies, mastoses and benign masses were found in equal proportions (7.8%). Rarely, simple adenoses were found in 3.1% and phyllodes tumours and folliculitis in the same proportions in 1.6%.

Histology of Tru-cut biopsies and cytology of fine needle aspiration biopsies revealed adenofibromas in 62.5% and 75% of cases respectively.

Medical treatment was given in 43.27% of cases, surgical treatment in 9.42% and no treatment in 17.31% of cases.

## 4. Discussion

The incidence of benign mastopathy in our study was 13.29%, aligning with its recognition as a common condition in breast pathology and a significant public health concern [3]. Gueye *et al.* [7] reported that approximately half of all women experience benign mastopathy at some point in their lives, highlighting its prevalence as the most common breast disease.

Literature consistently demonstrates a higher incidence of benign breast tumors among adolescents and young adults. Our findings corroborate this, with a mean age of 17.03 years among the adolescent girls in our study (range: 12 - 19 years). This result differs from that of Bendifallah *et al.* [8], who reported a mean

age of 23.47 years, potentially attributable to variations in the study populations. Notably, contraceptive use was low in our cohort (1%), suggesting a potential protective effect of hormonal contraception against benign breast tumors [9].

Breast nodules (58.7%) and breast pain (21.1%) were the primary reasons for consultation, consistent with their established roles as frequent clinical manifestations of mastopathy. Our results are higher than those of Lutula S [10] (45.9% for breast nodules) but lower than those of Foko I [11] (91.9% for breast nodules). These discrepancies may be attributed to differences in sample size.

The predominance of lesions on the right or left side varies across studies. In our series, 38.46% of breast lesions were located in the right breast. Involvement of the superolateral quadrants was most prevalent, with 29.8% in the left breast and 19.2% in the right. This superior-external distribution of lesions aligns with established literature, likely explained by the greater abundance of glandular tissue in the central and superolateral regions of the breast [12]. This finding is consistent with Lutula S, who observed 40.6% involvement of the superolateral quadrant [13].

Breast ultrasound was the most frequently utilized paraclinical examination (61.6%), consistent with its role as the first-line investigation in young individuals with dense breast tissue. Ultrasound plays a crucial role in differentiating between solid and fluid masses [14] [15].

While cytopuncture is the gold standard diagnostic procedure, even with suggestive radio-clinical findings, confirmation through histopathological examination (histology) remains essential. Histology has largely replaced microbiopsy in recent years. Cytology may suffice when the cyto-radio-clinical triad is concordant and performed by an experienced operator. However, histology should be considered in cases of uncertainty [16]. In our study, cytopuncture diagnosed adenofibromas in 75% of cases. Among the 17 patients who underwent surgery, 14 (92.86%) had histological confirmation of adenofibromas. These results align with those of Foko I (72%) and Lutula S (33.33%) [10] [11], supporting the dominance of fibroadenoma in adolescent benign breast tumor pathology, as described in the literature [17]. Fibroadenoma is particularly prevalent in young individuals (15 - 25 years), often referred to as juvenile fibroadenoma, accounting for 30-50% of breast masses [18]. It exhibits higher incidence in Black patients, constituting 70 - 95% of biopsies for breast nodules [19].

Therapeutic approaches for benign breast pathologies vary depending on the nature of the lesion. While surgery is often indicated, a watchful waiting approach or medical treatment may be sufficient for certain conditions. Some authors suggest that in cases where all ultrasound criteria for benignity are met, and the mass is less than 30 mm, reassurance may be sufficient, with no biopsy or surveillance recommended. Patients should be advised to seek further evaluation only if the mass increases in size or changes in consistency [13] [20]. However, the National Cancer Institute recommends an interventional biopsy or surgical removal if the increase in size exceeds 20% in volume or occurs rapidly [19]. In our study, no

treatment was observed in 17.31% of cases, aligning with Kane SM's findings (20.6%) [20] but lower than Gueye's report (52%) [7].

Medical treatment (43.2%) and surgical treatment (39.42%) were observed at higher rates compared to Gueye's study (28%) [7]. The primary aim of medical treatment was to alleviate symptoms, often involving analgesics and progestin-based gels or tablets [2].

Immediate post-operative follow-up after surgical excisions was straightforward in 100% of our patients, consistent with Kane's findings (97.7%) [20].

## 5. Conclusion

Benign mastopathy is a frequent occurrence in breast cancer consultations among adolescent girls. The 16 - 19 age group is most affected. Breast nodules were the primary reason for consultation. Breast ultrasound serves as the primary paraclinical examination. Fibroadenoma is the most common histological type. Given the high prevalence of breast tumors in this age group, any breast anomaly warrants clinical evaluation and further investigation to facilitate early diagnosis and address the anxiety and discomfort associated with benign mastopathies in adolescents.

## 6. Study Limitations

**(1) Retrospective and Descriptive Design with a Small Sample Size:**

The retrospective and descriptive nature of the study, along with its relatively small sample size, may limit the generalizability of the findings to the broader population.

**(2) Clinical Selection Criteria:**

The primary reliance on clinical criteria for participant selection may have introduced bias into the study.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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