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Locally Advanced Breast Cancer: Therapeutic and Prognostic Aspects in the "A" Surgery Department of the Point G University Hospital/ Bamako/Mali

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Abstract **Original Research Article**

Objective: To evaluate the management and prognosis of locally advanced breast cancer in the Surgery Department A of the Point G University Hospital. ***Patients and Methods:*** This was a retrospective, single-center study of patients treated for locally advanced breast cancer in the Surgery A Department of the Point G University Hospital over a 5-year period from January 2015 to December 2020. ***Results:*** The study included 81 patients, representing 66.6% of breast cancer cases operated on in the department during the study period. The average age was 46.33 years, with extremes of 20 and 79 years. In 49.4% of cases, the patients had no formal education. In 48% of cases, the time between the onset of symptoms and consultation was more than one year. In 32.1% of cases, the breast was inflammatory. The right breast and the upper outer quadrant were the most affected, accounting for 48% and 34.6% of cases, respectively. Breast fine needle aspiration was performed in 32.1% of patients. Non-specific invasive carcinoma was the most common histological type, accounting for 96.2%, with SBR Grade II being the most prevalent, accounting for 92.1% of cases. Immunohistochemistry was performed in 18 patients (22.2%), with triple-negative tumors being the most common (55.5%). The tumor was stage IIIB in 79% of patients. The combination of surgery and chemotherapy was the most commonly used treatment, accounting for 76.5% of cases. Neoadjuvant chemotherapy, hormone therapy with tamoxifen, and radiotherapy were performed in 90.1%, 14.8%, and 6% of patients, respectively. Total mastectomy combined with axillary lymph node dissection (ALND) was performed in all patients. Postoperative complications included lymphedema in 8.6% of cases and tumor recurrence in 22.2% of cases. Tumor recurrence was observed in 88.9% of patients who did not undergo radiotherapy. In 37.5% of cases, patients who did not receive neoadjuvant chemotherapy experienced recurrence. The survival rate was 79% at 1 year; 72.8% at 2 years, 70.4% at 3 years, 65.4% at 4 years, and 65.4% at 5 years. ***Conclusion:*** In Mali, breast cancer is characterized by its occurrence at a young age, delayed diagnosis, and the unavailability of adequate therapeutic resources, thus making it life-threatening.

Keywords: Cancer, breast, locally advanced, CHU Point G, Bamako/Mali.

INTRODUCTION

Locally advanced breast cancer is defined by the presence of a tumor measuring more than 50 mm, a tumor that has spread (to the skin, chest wall muscles, or more than 3 lymph nodes), and an inflammatory tumor. It includes stages IIB, IIIA, IIIB, and IIIC of the 2017 AJCC classification [1]. The need to identify this clinical form arose due to specific problems posed by its management. This was marked by a high rate of locoregional control failure despite all the efforts made by surgeons to this end [2].

Breast cancer is a real public health problem. According to the World Health Organization, it ranks second in terms of incidence with more than 2 million cases per year and is the fourth leading cause of death worldwide, accounting for 666,103 deaths in 2022. It is the leading cancer among women worldwide. [3]

In sub-Saharan Africa, breast cancer is the most common cancer among women, with 129,000 women newly diagnosed in 2020. The percentage of women diagnosed at an advanced stage (stage III or IV) varies considerably from one country to another; in total, 50% to 90% of women are diagnosed with locally advanced or metastatic breast cancer [4]. It is responsible for high morbidity and mortality rates due to late diagnosis. Treatment is mainly surgical due to the financial and/or geographical inaccessibility of other therapeutic options such as radiotherapy and chemotherapy [5,6].

In Burkina Faso, Somé O. *et al.*, reported that 45.7% of breast cancers were diagnosed at stage III [7].

In Mali, according to the cancer registry, it has been the leading cancer among women since 2022 [8].

This study was initiated to assess the current situation in terms of diagnosis, treatment, and prognosis for breast cancer.

PATIENTS AND METHODS

This was a retrospective, single-center study of patients with locally advanced breast cancer treated in the "A" surgery department of the Point G University Hospital over a five-year period from January 2015 to December 2020.

The target population consisted of patients with breast cancer treated in the "A" surgery department of the Point G University Hospital, from which we identified patients with locally advanced breast cancer. Our study included histologically confirmed invasive breast cancers classified as Stage IIB and III. Medical records that were incomplete or could not be found were excluded from our study.

The variables studied were: patient identity, personal and family history, circumstances of discovery/reason for consultation, clinical and paraclinical examination findings, therapeutic approach, monitoring, progression, and prognosis.

Data was collected using a survey form completed with reference to the department's data records. The patients were then contacted by telephone for an interview about the progression of the disease. The data sources were: hospitalization records, consultation records, surgical reports, and multidisciplinary team meeting reports, as well as medical observations of patients in our department and in the medical oncology department.

The texts and tables were entered using EXCEL and Word 2013 software. The database was created and the data processed using SPSS 21.0 software.

The comparison of proportions was performed using the Chi-square test. The significance threshold was set at a p-value of less than 0.05. The anonymity and confidentiality of the information were respected during data collection.

RESULTS

Frequency: During the study period, we recorded 120 patients who underwent breast cancer surgery, including 81 cases of locally advanced breast cancer. The frequency of locally advanced breast cancer was 66.6%.

Sociodemographic data: The average age was 46.33 years, ranging from 20 to 79 years. 49.4% of patients had no formal education.

Clinical and paraclinical data: The time between symptom onset and consultation was greater than one year in 48% of patients (n=47). A history of breast lumpectomy was found in 16% of patients (n=13). A family history of breast cancer was found in 7.4% of patients (n=6). First-degree family history of breast cancer accounted for 85.7%. In 37% (n=30) of cases, breast cancer was discovered through self-examination. The most common reason for consultation was an increase in breast volume, accounting for 43.2% (n=35) of cases. The breast was inflammatory in 32.1% of cases (n=26). The right breast and the upper outer quadrant were the most commonly affected, accounting for 48% (n=42) and 34.6% (n=28) of cases, respectively. Mammography was not performed in 56.8% of patients (n=46). Breast fine-needle aspiration was the most common type of sample collection, accounting for 32.1% (n=26) of cases. Non-specific invasive carcinoma was the most common histological type, accounting for 96.2% (n=49) of cases, while SBR Grade II was the most frequently observed, accounting for 92.1% (n=47) of cases. Immunohistochemistry was performed in 18 patients (22.2%), with triple-negative tumors being the most common (55.5%, n=10). The tumor was stage IIIB in 79% of patients (n=64).

Therapeutic aspects: The therapeutic procedure was decided during the Multidisciplinary Team Meeting (MDT). Surgery combined with chemotherapy was the most commonly used therapeutic approach, at 76.5% (n=62). Seventy-three patients, or 90.1%, underwent neoadjuvant chemotherapy (Table I). The AC60+Taxane chemotherapy protocol was the most commonly used, at 95.9% (n=70). A proportion of 14.8% of patients received hormone therapy with tamoxifen and approximately 6% of patients underwent radiotherapy. Total mastectomy followed by axillary lymph node dissection (ALND) was performed in all patients (n=81). Postoperative complications included lymphedema in 8.6% of cases and tumor recurrence in 22.2% of cases (Table II).

Tumor recurrence was observed in 88.9% of patients who did not undergo radiotherapy (Table III).

Prognosis: The one-year survival rate was 79%; 72.8% at two years, 70.4% at three years, 65.4% at four years, and 65.4% at five years (Table IV and Figure 1).

Table I: Distribution of patients according to treatment methods

Treatment methods	**Number**	**Frequency**
Surgery	4	4,9
Surgery + Chemotherapy	**62**	**76,5**
Surgery + Chemotherapy + Hormone Therapy	6	7,4
Surgery + Chemotherapy + Radiotherapy	6	7,4
Surgery + Chemotherapy + Hormone Therapy + Radiotherapy	3	3,7
Total	81	100,0

Table II: Distribution of patients according to postoperative outcomes

Postoperative outcomes	**Number**	**Frequency**
Postoperative outcomes	3	10,3
Surgical site infection	7	24,1
Recurrence	**18**	**62,1**
Keloid	1	3,4
Lymphedema	1	3,4
Total	29	100,0

Table III: Distribution of patients according to radiotherapy in relation to tumor recurrence

		Radiotherapy		Total
		Yes	No	
Tumor recurrence	Yes	2(11,1)	**16(88,9)**	18
	No	23(36,5)	40(63,5)	63
Total		25	56	81

Table IV: Distribution of patients according to 5-year follow-up

5-year follow-up	**Number**	**Frequency**
Alive	**47**	**58**
Deceased	27	33,3
Lost to follow-up	7	8,6
Total	81	100,0

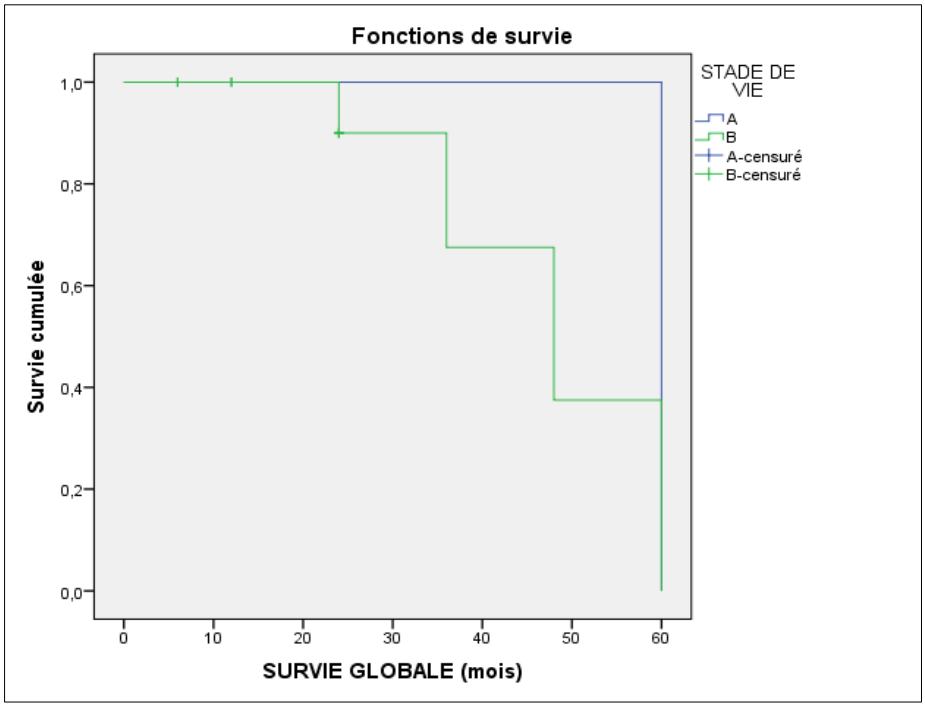

Figure 1: Five-year survival curve

DISCUSSION

Frequency of locally advanced breast cancers

During the study period, we recorded 120 patients with breast cancer. Among them, 81 patients had locally advanced cancer, representing a frequency of 66.6%, whereas the current trend is toward diagnosis at subclinical and localized stages. This high rate is not uncommon in sub-Saharan Africa. Rajesh reported that approximately 80% of breast cancers are diagnosed at a late stage [9]. A series from Burkina Faso reported a rate of 31.7% [7].

The high frequency of these locally advanced forms at the time of diagnosis can be explained by the delay in consultation often due to traditional therapy, the lack of an expanded screening program in the country and awareness, as well as the inaccessibility of diagnostic and therapeutic resources due to the poverty of the population [10].

Therapeutic aspects of locally advanced breast cancer: Surgery combined with chemotherapy was the most commonly used treatment in 76.5% of cases in our study. This rate is similar to that reported by Dembélé *et al.,* [11] (p=0.53), who reported 80.4%. The predominance of surgery and chemotherapy in our study could be explained, on the one hand, by its effectiveness and, on the other hand, by its accessibility or by the advanced stage of the tumor.

Patients received neoadjuvant chemotherapy in 90.1% of cases. This rate is comparable to those reported by Gueye *et al.,* in Senegal 2021 [12] (p=0.89) and Ahmed Hajji *et al.,* in Tunisia 2020 [13] (p=0.26), who found 89.5% and 95%, respectively. However, Bengaly *et al.,* in Mali in 2024 [14] (p< 0.05) reported a lower rate of neoadjuvant chemotherapy than ours (41.7%). This difference could be attributed to the patient selection criteria.

A proportion of 14.8% received tamoxifen treatment, which is lower than that found by certain authors: Dembélé *et al.,* in Mali in 2021, Mahjoub N in Tunisia in 2021, and Ba odo in Ivory Coast in 2024, who reported 35.71%, 49.3%, and 50% (p<0.05) [11, 15,16], respectively. This difference could be related to our patients' lack of resources for immunohistochemistry.

Total mastectomy with lymph node dissection (MCA) was performed in all patients. This high frequency of TSM in our study is consistent with studies conducted by Bengaly *et al.,* Mali [14] (p<0.05) and Gueye *et al.,* Senegal [12] (p=0.34). A predominance of conservative surgery was noted in the study conducted by Imane France *et al.,* 2022 [17] (p< 0.05). Conservative breast surgery remains ideal but must always be followed by radiotherapy. The locally advanced nature of the tumors and the unavailability of radiotherapy could explain the absence of conservative surgery in our study.

Prognosis for locally advanced breast cancer: The one-year survival rate was 79%; 72.8% at two years, 70.4% at three years, 65.4% at four years, and 65.4% at five years. The 3-year and 5-year survival rates were similar to those found by Mapoko *et al.,* in Cameroon (2023) at 65.11% (p=0.39) and 58.60% (p=0.29) respectively [18] but higher than those found by Somé *et al.,* in Burkina Faso (2022) with 50% and 22% respectively [7]; This difference could be explained by the locally advanced nature of the cancers in our study.

The 5-year survival rates for African American women and white American women after diagnosis are 73% and 85% (p<0.05) respectively [19]. Kong *et al.,* found a survival rate of 71.6% (p=0.22) in Malaysia [20], which is statistically higher than the studies conducted in Burkina Faso, Cameroon, and Mali. This difference could be explained in large part by delayed diagnosis. Tumor recurrence was observed in 88.9% of patients who did not undergo radiotherapy.

CONCLUSION

In Mali, breast cancer is characterized by its occurrence at a young age, delayed diagnosis, and the unavailability of adequate treatment options, all of which affect the prognosis

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