

# Conservative Treatment of Breast Cancer and Oncoplasty at the Teaching Hospital Mother and Child of Jeanne Ebori Foundation in Libreville (Gabon)

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## Abstract

**Introduction:** Breast cancer is currently the most common malignant tumour in women worldwide. **Objective:** To evaluate conservative treatment of breast cancer and oncoplasty at the teaching hospital Mother and Child of Jeanne Ebori Foundation (CHUMEFJE). **Patients and methods:** This is an observational, descriptive study, which took place from August 2019 to December 2021 at CHUMEFJE. Data were collected using patients' medical records, and operative and pathological anatomy reports. **Results:** Conservative treatment and oncoplasty were performed in 12 (34.2%) patients. Of these patients, 8 (66.7%) benefited from an external technique and 2 (16.7%) from a pamectomy. Post-operative complications were dominated by lymphocele in 5 (41.6%) patients. Ten (83.3%) patients were satisfied with the post-operative aesthetic result. At the time of updating the records, 1 (8.3%) patient had died and 11 (91.7%) were alive. **Conclusion:** Conservative treatment and oncoplasty are giving satisfactory results at the CHUMEFJE in Libreville.

## Keywords

Breast Cancer, Conservative Treatment, Oncoplasty, Aesthetics, Satisfaction

## 1. Introduction

Breast cancer (BC) is currently the most common cancer in women worldwide [1]. It is a major public health problem [2]. It is now the most common malig-

nant tumour in women worldwide. In Gabon, since 2012, according to data from the Libreville Cancer Institute, it has accounted for between 18% and 20% of female cancers, making it the leading cancer in Gabon [3]. It is diagnosed late in 62.5% of cases [3]. The opening of the Cancer Institut of Libreville (ICL) and the introduction of screening campaigns for gynaecological and breast cancers in Gabon by the Sylvia BONGO ONDIMBA Foundation in 2012 have led to the increasingly early discovery of this condition, which requires relatively easy management and conservative surgical treatment. Conservative breast treatment is breast surgery consisting of removal of part of the breast, removing the tumour and leaving a margin of macroscopically healthy breast tissue around it. Several teams report that conservative treatment by lumpectomy followed by radiotherapy is the reference treatment when lesions are diagnosed at an early stage [2] [4] [5]. It gives results equivalent to those of mastectomy, in terms of overall survival and recurrence-free survival [5]. The success of conservative treatment depends on complete removal of the cancer with satisfactory surgical margins to ensure that the breast is cleared tumour while retaining the natural appearance and shape of the breast, thus improving patient satisfaction and body image. Achieving both objectives in the same procedure is difficult, and standard conservative treatment does not give satisfactory aesthetic results in all cases [6] [7]. One of the main criteria limiting the quality of tissue that can be removed is not only absolute breast volume but also tumour size and location. If none of these objectives can be achieved, the patient is frequently referred for mastectomy. Another option is to use chemotherapy or hormone treatment to shrink the tumour before surgery. However, neoadjuvant treatment does not work for all tumours. The inability of standard conservative treatment to solve these problems has encouraged the development of new breast surgery techniques, such as oncoplastic breast surgery [8]. Breast oncoplasty involves glandular excision off the tumour, using specific skin incisions with areolar repositioning and glandular remodelling [2]. Oncoplastic surgery has developed over the last two decades. The combination of bulky tumour resection by the breast surgeon and immediate breast reconstruction by the plastic surgeon has many advantages, including safer resection with wider margins and immediate aesthetic results [9]. A pooled meta-analysis of the included studies showed that conservative treatment with oncoplasty was significantly superior to standard conservative treatment in most criteria [10].

The aim of our work was to evaluate the conservative treatment of breast cancer with breast plasty at the Centre Hospitalier Universitaire Mère Enfant Fondation Jeanne Ebori (CHUMEFJE) in Libreville.

## 2. Patients and Methods

This was an observational, descriptive, retrospective study conducted over a period of 28 months, from August 2019 to December 2021. It was carried out at the Mother Pole of the CHUMEFJE in Libreville. The target population of our study

consisted of women who came for early diagnosis of breast cancer, those who consulted for a suspicious sign or symptom of breast cancer, those referred by another facility for suspected breast cancer, and those referred by the Libreville Cancer Institute (ICL) for breast cancer surgery. In our department, women presenting with abnormalities on clinical examination of the breasts undergo additional tests to make a precise diagnosis. These include breast ultrasound and/or mammography. Lesions classified as ACR 1 or ACR 2 on breast ultrasound and/or mammography are considered benign and require no surveillance. For ACR3 lesions, surveillance is recommended. However, when these ACR3 lesions are large (size greater than or equal to 4 cm), or symptomatic, a micro biopsy or lumpectomy may be necessary. Similarly, if the patient is aged  $\geq 30$  years, or if the woman's personal and/or family history reveals a background at risk of breast cancer. However, for lesions classified as ACR4 or ACR5, a micro-biopsy or cytological puncture is performed to determine the histological nature of the lesion. If the histology is normal or non-contributory, the lesion is biopsied again, or undergoes an enlarged lumpectomy directly, for a diagnosis of certainty. Women who present with a very advanced tumour on physical examination (ulcerated, budding or ulcerating-budding) benefit directly from a micro biopsy or surgical biopsy. If cancer is diagnosed, the patient is given an extension assessment, including a thoraco-abdominopelvic computed tomography (CT) scan for classification. Her case is then prepared and presented at a multidisciplinary consultation meeting (MCM) for a treatment decision. Patients who had undergone conservative treatment for SC with oncoplasty were included in the study. Patients eligible for this type of surgery in our department are those with breast cancer less than or equal to 5 cm in size, those whose tumour size/breast volume ratio is satisfactory for conservative treatment with oncoplasty, those with no distant metastases and those who give their informed consent for this type of surgery after discussion with the surgeon. Conversely, patients with tumour size greater than 5 cm, inflammatory tumours, multifocal or multicentric tumours and distant metastases were not eligible for this type of surgery. Patients who could not be included in the study and patients who were lost to follow-up were excluded. All these cancers were presented and discussed at a MCM at ICL in order to choose an appropriate treatment option. The MCM takes place once a week. The indication for surgery is decided at the end of this meeting. After the RCP, patients were contacted by telephone to arrange an appointment to inform them of the treatment options chosen. Between treatments, the patients' files were presented again to the RCP to decide on the therapeutic option. Once the surgical option has been decided at the RCP, a pre-operative assessment is carried out. After the assessment, the patient is referred to the anaesthetist for a pre-anaesthetic consultation (CPA). The patient was then scheduled for surgery. All patients underwent conservative treatment. The plasty technique used was decided the day before the operation. The surgical approach was direct depending on the location. All patients underwent a wide lumpectomy with classic glandular remodelling. The resection was wide up to the pectoral

plane, taking the tumour with it. All lumpectomies were reshaped by the use of two sliding flaps. Epidermal removal was performed when the technique allowed, with recentring of the nipple-areolar plate (NAP). Axillary lymph node dissection was performed either through a vertical axillary incision, or using the same incision made for the lumpectomy. Symmetric plasty was not performed on the opposite breast. The surgical specimen was sent for pathological anatomy. We considered 10 mm to be the minimum distance for a healthy margin. The first dressing was applied on the 3rd post-operative day. If there were no complications, the patient was discharged on postoperative day 5. Dressings were made every 2 days and the patient returned for a consultation with the gynaecologist on the 14th post-operative day. Patient data were collected using a pre-designed data collection form based on the patient's medical records and operative and pathological reports. The variables studied included socio-demographic data (age, sex, profession, marital status), clinical data (history, risk factors, circumstances of discovery, functional signs, general signs, physical signs), paraclinical data (mammography, breast ultrasound, biopsy, anatomical-pathology), and the results of the clinical studies, biopsy, pathological anatomy, immunohistochemistry, computed tomography, magnetic resonance imaging), therapeutic data (chemotherapy, radiotherapy, type of surgery, hormone therapy), and evolutionary data (post-operative complications, healing, aesthetic satisfaction, recurrence, survival). The data were entered using Excel 2012 and analysed using Epi info software version 7.2.5.0. Quantitative data were expressed as mean  $\pm$  standard deviation. Qualitative data were described as percentages. This study was conducted in accordance with the Declaration of Helsinki, good clinical practice and with the approval of the CHUMEFJE scientific committee. Confidentiality and anonymity were respected.

### 3. Results

During the study period, 142 BC were diagnosed and 41 underwent surgery. Of these, 15 underwent conservative surgery, including 12 who underwent conservative treatment with oncoplasty (29.2%). The mean age of the patients was  $41.9 \pm 8$  years, with extremes of 31 and 62 years. **Table 1** shows that 7 (58.3%) patients were between 30 and 40 years of age.

The reason for consultation was a breast nodule in 10 (83.3%) patients. Pain was associated in 6 (50%) of them. One (8.3%) patient had presented with a nipple discharge and axillary adenopathy was found in 66.7% ( $n = 8$ ) of cases. Eleven (91.7%) patients discovered their disease during breast self-examination, and 1 (8.3%) had her disease discovered during the "Pink October" mass screening (**Table 2**). Five (41.7%) patients consulted a doctor one month after the discovery of symptoms, 4 (33.3%) after six months and 3 (25%) after one year (**Table 2**). The mean size of the breast tumours was 2.8 cm, with extremes of 2 and 5 cm. The tumour was located at the QSE in 8 (66.7%) cases and at the junction of the upper quadrants in 2 (16.7%) cases (**Table 2**). Invasive ductal carcinoma was found in 10 (83.3%) patients. The Scarff, Bloom and Richardson

**Table 1.** Distribution of patients according to sociodemographic characteristics.

Parameters	N = 12	
	n	%
<b>Age</b>		
30 - 39 years	7	58.3
40 - 49 years	3	25
50 - 59 years	1	8.3
>60 years	1	8.3
<b>Occupation</b>		
Civil servant	6	50
Factory worker	3	25
Unemployed	3	25
<b>Marital status</b>		
Married	6	50
Bachelor	6	50

**Table 2.** Distribution according to clinical and paraclinical signs.

Parameters	N = 12	
	n	%
<b>Family history</b>		
Breast cancer	1	8.3
Cervical cancer	1	8.3
<b>Circumstances of discovery</b>		
Self palpation	11	91.7
Screening	1	8.3
<b>Consultation deadline</b>		
1 months	5	41.7
6 months	4	33.3
12 months	3	25
<b>Tumor site</b>		
QSE	8	66.7
QSI	1	8.3
JQS	2	16.7
JQI	1	3
<b>Additional tests</b>		
Mammography	9	75

**Continued**

Ultra-sound	12	100
Echo-mammography	9	75
Micro-biopsy	12	100
Pathological anatomy	12	100
Immunohistochemistry	1	8.3
<b>Assessment of extension</b>		
TDM TAP	12	100

(SBR) histopronostic grade was type III in 8 (66.6%) patients. According to the UICC classification, 6 (50%) patients were stage IIA and 4 (33.3%) stage IIB (Table 3). In terms of treatment, 1 (8.3%) patient received neoadjuvant chemotherapy, 5 (41.7%) adjuvant chemotherapy and 11 (91.7%) radiotherapy (Table 4). The external technique was performed in 8 (66.7%) patients and pamectomy in 2 (16.7) patients (Table 4). The surgical margins of the surgical specimens were healthy. Lymph node dissection yielded between 10 and 14 lymph nodes. Node invasion was noted in 4 (33.3%) patients. Immediately after the operation, 5 (41.6%) patients presented with a lymphocele and 2 (16.7%) with sensory problems such as hypoesthesia (Table 4). Healing was complete and satisfactory in all (100%) patients, with a reduction in the volume of the operated breast in 2 (16.7%) of them. Ten (83.3%) patients were satisfied with the post-operative aesthetic result (Table 4). At the time of updating the files, 1 (8.3%) patient had died and 11 (91.7%) were alive.

#### 4. Discussion

The limitations of this study are those of a retrospective study, involving poorly preserved and archived medical records and poorly kept registers, sometimes with several missing values for certain variables, making them difficult to use.

Our work shows that 12 patients out of 41 benefited from conservative treatment with oncoplasty, *i.e.* a frequency of 29.2%. Dimassi *et al.* report a frequency of 23.8% [4]. Mahfoudi *et al.* in Morocco found a frequency of 31.1% [5]. The management of BC by conservative treatment with oncoplasty for tumours smaller than 3 cm is no longer in doubt. Dimassi *et al.* in Tunisia found that this rate rose from 4% in 1987 to 33% in 2012 [4]. This increase can be explained by the gradual introduction of conservative surgery into breast cancer management practices, but also by the gradual spread of screening programmes [4]. The mean age of our patients was  $41.9 \pm 8$  years, with extremes of 31 and 62 years. Age is a major risk factor for BC. In Europe and the United States, breast cancer mainly affects women with an average age of between 50 and 70 years. Mahfoudi in Morocco found an average age of 52 years [5]. Assoumou *et al.* in Gabon report an average age of 50 [3]. The symptoms of BC are generally very varied. They may be discovered during targeted screening or in response to clinical signs. In

**Table 3.** Distribution according to UICC classification.

Stage	N = 12	
	n	%
I	1	8.3
IIA	6	50
IIB	4	33.3
IIIA	1	8.3

**Table 4.** Distribution according to treatment.

Parameters	N = 12	
	n	%
<b>Therapeutic Sequences</b>		
Chemotherapy neo-adj	1	8.3
Chemotherapy adj	5	41.7
Radiotherapy	11	91.7
Surgery	12	100
<b>Surgical Technique</b>		
External technique	8	66.7
Pamectomy	2	16.7
Internal technique	1	8.3
Round block	1	8.3
<b>Complications post-op</b>		
Lymphocele	5	41.6
Forearm hypoesthesia	2	16.7
<b>Other treatments</b>		
Neoadjuvant chemotherapy	1	8.3
Adjuvant chemotherapy	5	41.7
Radiotherapy	11	91.7
<b>Satisfaction</b>		
Very satisfying	6	50
Satisfying	4	33.3
Not satisfied	2	16.7

our study, the discovery of a breast nodule during autopalpation was the most frequent reason for consultation in 10 (83.3%) patients. Dimassi *et al.* in Tunisia found that the breast nodule was the most frequent reason for consultation in 68% of cases [4]. In Morocco, Mahfoudi *et al.* reported that 95.6% of patients

discovered their tumour by the autopalpation method [5]. The time taken to consult the BC is an important factor in prognosis, especially in surgical management. The average consultation time in our series was 5.4 months, with extremes of 1 and 12 months. Dimassi and Mahfoudi found a delay of 3.3 and 7 months respectively [4] [5]. The longer the delay, the greater the risk of metastasis, the more difficult the management and the poorer the survival. Assoumou *et al.* in Gabon report an average consultation time of 8 months, explaining the advanced stage of the disease at the time of diagnosis [3]. Delays in consulting breast cancer patients remain a major problem in the management of this disease in sub-Saharan Africa. It explains the advanced stage of the disease at the time of diagnosis. This long delay could be linked to the difficulty of accessing health facilities, and the inadequacy of awareness and screening campaigns in rural areas. Socio-economic and cultural constraints are so important in our societies that they may largely explain the reasons for this delay [11]. In our study, as in most African series [3] [4] [5], this delay in consultation explains the discovery of the disease, for the most part, by autopalpation. In European series, however, BC can be detected in almost 40% of cases [12]. Delayed diagnosis of this disease contributes to delaying the widespread use of conservative treatment and oncoplasty, compared with Western series where the percentages easily reach 60% to 75% [13]. Conservative treatment depends on the size of the tumour at the time of diagnosis. It is currently the reference treatment for small breast tumours [5]. In our study, the average size of breast tumours was 2.8 cm, with extremes of 2 and 5 cm. Conservative surgery requires systematic screening by mammography. This would explain the progress made in identifying small or even sub-clinical lesions. It therefore seems imperative to reinforce and perpetuate the gynaecological and breast cancer screening campaigns already initiated in our environment [14]. The external technique was used in the majority (66.7%) of our patients. The choice of oncoplastic techniques is influenced by the location of the tumour. In our series, the tumour was mainly located on the QSE. This explains the high frequency of the external technique. However, 2 (16.6%) pamectomies were performed for central retroareolar tumours. Currently, breast conservation in retroareolar tumours is made possible by techniques derived from plastic surgery involving removal of the PAM [4]. Oncoplastic breast surgery is a new trend in conventional breast conserving surgery that merges the concepts of oncology and plastic surgery to achieve satisfactory results both oncologically and aesthetically [10]. It allows the removal of significantly larger tumours because it has become an alternative to mastectomy for tumours larger than 4 cm and for locoregional tumours [5] [9] [10] [15] [16] [17]. In addition, it provides quality of life scores comparable to conventional breast-conserving surgery, while safely allowing resection of larger tumours [19]. The higher postoperative morbidity in the case of oncoplasty, according to certain series, does not seem to significantly affect patients' quality of life [18] [19]. These are essentially seromas, haematomas and skin necrosis [15]. In our study, 5 (41.6%) patients presented with lymphorrhoea and 2 (16.7%) with sensory



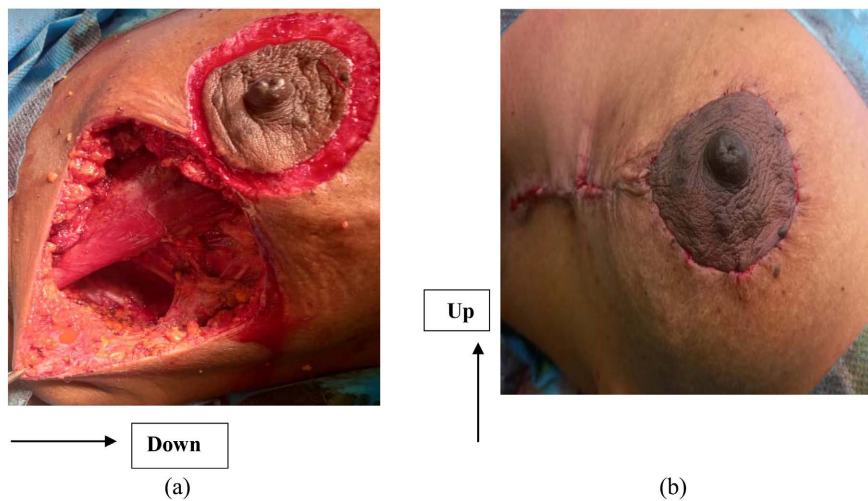
problems such as hypoesthesia, related to axillary curage. Post-operative morbidity specific to oncoplasty was not found in any of our patients. In 20% - 30% of cases, standard conservative treatment of breast cancer is accompanied by sequelae related to surgery and irradiation. These sequelae mainly consist of volume asymmetry or areola position asymmetry; breast deformity due to loss of glandular substance or skin retraction; an enlarged, retractile and unsightly scar, or a scar flange [4]. Oncoplastic surgery makes it possible to reduce the after-effects of conservative treatment by remodelling the breast as well as possible and avoiding major post-treatment deformities. Glandular filling techniques using glandular detachments and flaps with transposition of the nipple-areolar plate and breast plasty make it possible to retain a satisfactory shape to the breast with fairly high lumpectomy volume/breast volume ratios. In our series, healing was complete and satisfactory in all patients, with a clear reduction in the volume of the operated breast in 2 (16.7%) patients. 10 (83.3%) patients were satisfied with the aesthetic result and 2 (16.7%) were not very satisfied. The 2 patients with low satisfaction were those who had undergone pamectomy. This could be explained by the loss of their PAM. The rate of satisfaction with the aesthetic result in our study is in line with several series [5] [9]. The rate of local recurrence after conservative radiosurgical treatment of invasive breast cancer varies between 4 and 20% at five years depending on the series [5] [9] [20]. This rate does not exceed 2% in the most recent series with well-selected patients and Boost radiotherapy on the tumour bed [9] [15] [21]. In our series, the rate was 8.3% after 2 years. The prognosis for breast cancer is generally good, with a survival rate of 90% for all stages in developed countries [15]. However, mortality is higher in less developed countries. The advanced stage of the disease at the time of diagnosis and the prevalence of triple-negative tumours may explain this high mortality in less developed countries [15]. Also, the lack of access to appropriate cancer therapies in these countries exacerbates this mortality. The overall survival of our patients at 2 years was 91.7%. El Mahfoudi in Morocco reports an overall survival at 2 years of 97% [5]. Western series report overall survival at 10 years of 91.4% after conservative treatment and oncoplasty [15]. The survival rate of our patients is close to those of North African and Western countries. This may be explained by the group of patients concerned. The patients who benefit from conservative treatment are those whose disease was detected early. This group represents approximately 21.5% in our country [3]. Also, our survival figures should be treated with caution due to the short follow-up time of our patients (around 2 years), compared with the results found in Western series. However, in our department, the 2-year survival rate (91.7%) of patients who had undergone conservative treatment was higher (62.74%) than that of those who had undergone mastectomy. The size of the tumour at diagnosis and the presence of local or distant metastases may explain this difference in survival. Promoting conservative treatment and oncoplasty in our country requires training medical staff and stepping up campaigns to raise awareness and screen for female cancers so that they can be diagnosed early (Figures 1-4).



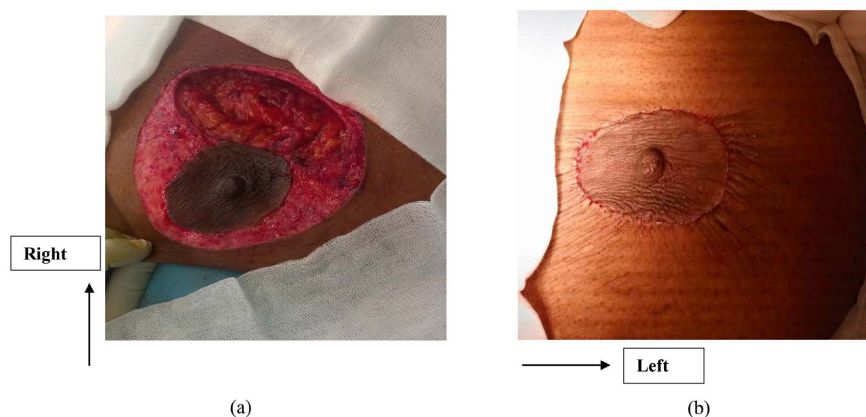
**Figure 1.** Thorax view from the front, after healing of a standard conservative for right breast cancer. Unsightly deviation of the nipple.



**Figure 2.** Front view of the chest, healing after conservative surgery with oncoplasty and radiotherapy for right breast cancer using an external technique.



**Figure 3.** (a) Oncoplasty by external technique of the right breast; lumpectomy, axillary dissection and epidermization completed; (b) Closure completed.



**Figure 4.** (a) Oncoplasty by Round Block in the left breast; tumorectomie; lumpectomy and epidermization; (b) Closure completed.

## 5. Conclusion

Breast cancer is currently the leading cause of cancer in women in Gabon. The technique of conservative treatment and oncoplasty is being promoted in our hospital. Few patients operated on for breast cancer benefit from this technique because of its rare indications. More than two years after the start of this practice in our hospital, the results observed are satisfactory, and complications rare. It is vital that medical staff are trained in the technique, and that awareness campaigns and screening for female cancers are stepped up to ensure early diagnosis.

## Conflicts of Interest

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

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