

# Breast-Reduction Surgery in a Low Resource Setting

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## Abstract

The disproportionately large breast has been associated with severe physical and psychological symptoms. Unfortunately, nonsurgical treatments often provide little or no relief. Plastic surgery in low-resource countries like Nigeria is plagued with many challenges including, Inadequate awareness of the public and some medical personnel of the Practice of Plastic Surgery, Shortage of trained personnel, cost of surgery, culture, and beliefs, patients' expectations, and complications from surgery. The high cost of having a much-needed mammoplasty in Nigeria has put patients with macromastia in a lot of physical discomforts resulting from the weight of their breasts and emotional distress or a more significant mental health problem as a result of their large breasts. The author aims to share his experience, outcomes, techniques, and patient satisfaction with patients that require a breast-reduction procedure in Nigeria.

10 patients were randomly selected for a free-breast reduction surgery to alleviate the physical and psychological symptoms that are associated with macromastia. All consent was given for their information to be taken. Pre- and post-surgery pictures were taken. The technique used for breast reductions aims to reduce the symptoms the patient has presented with and also reduce the risks associated with the technique used viz a viz the nipple sensation and loss of Nipple-Areola Complex (NAC). The Use of the inferior and internal mammary and isolated lateral pedicle was the technique used in this study to ensure both breast reductions and also the preservation of both the sensation and vascular supply to the breast. Trends observed with the average age, weight of breast tissue excised, the weight of patients, duration of surgery, estimated blood loss, and patient satisfaction were reported. The mean age of the patient presented for the procedure was 27.8 years, the mean weight of the patient was 87.5 kg, and the mean weight of breast tissue excised was 1.7 kg from both sides of the breasts. Based on patients' satisfaction post-surgery, aesthetically pleasing results and a significant improvement in the earlier presented physical and psychological symptoms were achieved. Demand for a much-needed breast-reduction surgery has been affected by the high cost of the procedure in Nigeria. Patients who had their breast-reduction procedures were subsequently satisfied with the result of the procedure that assured them a better quality of life.

**Keywords:** Breast-reduction Surgery • Mammoplasty • Challenges • Low-resource Countries

## Introduction

Disproportionately large breast, macromastia has been associated with severe physical and psychological symptoms in women [1].

Patients with macromastia (Figure 1) may be limited physically because of the pains that may be experienced in the upper torso resulting from the amount of weight in the breasts straining the muscles and nerves which could lead to headaches, shoulder pain, spinal pain, neck pain, dermatitis of the inframammary fold, and pressure on the brachial plexus by brassiere straps [2,3]. They may also be exposed to an increased obesity risk associated with difficulty exercising due to breast size impacting posture and upper spinal movement [4].



Figure 1. Pictures Macromastia Patients

No evidence exists to confirm that non-operative management provides effective long-term relief of the symptoms associated with macromastia [5]. Instead, symptomatology may also require chronic administration of pain medication, emergency room evaluations, physical therapy, and missed work and/or school days [6]. Breast reduction mammoplasty is a surgical procedure designed to reduce excess glands, tissue, and skin to treat symptoms of macromastia or as an aesthetic procedure [7].

Plastic surgery in Nigeria as a specialty date back many years ago and has made tremendous progress over the years with a history that dates back to the post-independent era, beginning with expatriate surgeons such as Mr. Michael Norbert Tempest, a British Surgeon at the premier university, the University College Hospital, Ibadan. Pioneer indigenous surgeons of plastic surgery in the early 1970s include Prof Oluwasanmi, the first indigenous plastic surgeon in Nigeria and Dr. Aranmolate and later Prof. Oluwatosin in the west, and Drs J.C Nwozo, Iregbulem, and Onyia in the East who have made a tremendous effort in the establishment and the growth of the plastic surgery as a specialty in both the national and regional postgraduate medical training colleges which has been instrumental to the growth of the specialty in Nigeria [8].

Plastic surgery in a low-resource country like Nigeria is however plagued with many challenges including, Inadequate awareness of the public and some medical personnel of the Practice of Plastic Surgery, cost of surgery, Shortage of trained personnel, culture and belief, patients' expectations and complications from surgery [8].

The high cost of having a much-needed mammoplasty in Nigeria has put patients with macromastia in a lot of physical discomforts resulting from the weight of their breasts and emotional distress or a more significant mental health problem as a result of their large breasts. The author thus aims to share his experience, outcomes, techniques, and patient satisfaction with 10 patients that were randomly selected for a free-breast reduction surgery to alleviate the physical and psychological symptoms that are associated with macromastia.

## Case Presentation

10 patients were randomly selected for a free-breast reduction surgery to alleviate the physical and psychological symptoms that are associated with macromastia. All consent was given for their information to be taken. Pre- and post-surgery pictures were taken.

Several techniques of breast-reduction surgery have been used over the years, especially for large breasts including (i) Vertical technique for tissue excision less than 1 kg (ii) Wise pattern with inferior pedicle >1 kg (iii) Breast amputation and NAC grafting for tissue >2 kg. The technique used for breast reductions aims to reduce the symptoms the patient has presented with and also reduce the risks associated with the technique used viz a viz the nipple sensation and loss of nipple-areola complex (NAC). The Use of the inferior and internal mammary and isolated lateral pedicle was the technique used in this study to ensure both breast reductions and also the preservation of both the sensation and vascular supply to the breast.

## Procedure

Marking was done while the patient was in a standing position using the popular vertical scar incision (modified to incorporate internal mammary vessel and inferior pedicle supply to the breast). Measurement is then taken from the mid-clavicle to the assumed new position of the NAC, an imaginary sketching is done to delineate the inferior pedicle (inferior blood supply). De-epithelization is then carried out to create the new nipple area complex and excision of all tissue lateral to the imaginary line connecting the dermo-glandular area supplied by the internal mammary and inferior pedicle of the breast (Figure 2, 3).



**Figure 2.** Excision of the breast tissue.



**Figure 3.** Excised skin.

The lateral glandulocutaneous flap is created as a separate tissue flap which is supplied by the lateral thoracic and the intercostal arteries. The NAC was then sutured in place using vicryl 0 and vicryl 2/0 (Figure 4).



**Figure 4.** Suturing of the breast tissue after excision.

The medial/superior glandular flap is tucked under the lateral glandulocutaneous flap and sutured in place using vicryl 0 suture. The drain is fixed in situ and exits the lower incision site.

Excess breast tissue from one of the arm pit areas is excised and converted to a lower lateral flap as required as this is not applicable in all cases as one breast sometimes is usually bigger than the other (Figure 5).



**Figure 5.** Conversion of the excised arm pit area to a lower lateral flap.

The drain is then fixed in situ and exits the lower incision site with a vicryl 3/0 suture to ensure the fluid is constantly removed to avoid swelling and soreness, after which a compression vest is worn for a period of 6 weeks to prevent fluids or blood products from accumulating under breast area.

### Post-operative Care

Patients are discharged at least 3 days postoperatively, with early mobilization and resumption of sedentary activities at 2 weeks and normal activities at 4 weeks (Figure 6). Multiple follow-up consultations are also done within a period of 6 months to 2 years. During the recovery period, early mobilization is encouraged, and post-op care involves routine antibiotics, anti-inflammatories, and haematinics.

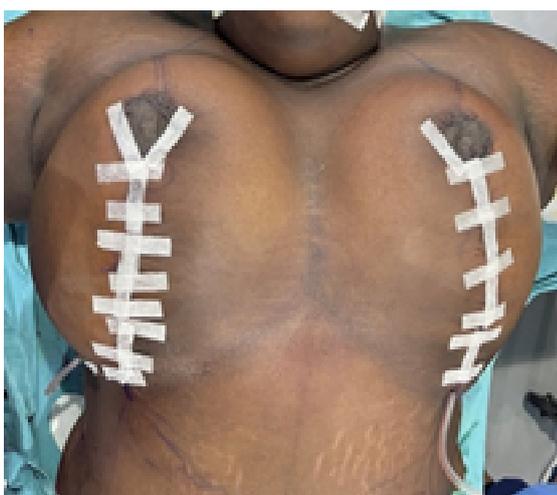


**Figure 6.** Pictures Pre- and Post-Surgery.

**Macromastia Patient's Pre And Post Surgery Process (Figure 7-9)**



**Figure 7.** Before surgery pictures of macromastia patient.



**Figure 8.** Immediately after surgery picture of patient.



**Figure 9.** 4 days post-surgery pictures.

**Discussion**

10 patients were randomly selected for this study. The mean age of the patient presented for the procedure was 27.8 years (range: 19 years-41 years), the mean weight of the patient was 87.5 kg (range: 60.4 kg-118.8 kg), the mean weight of breast tissue excised was 1.7 kg (900 kg-2600 kg) from both sides of the breasts.

The average duration of the procedure was 2 hours (range: 1 hr, 21 min to 3 hr, 10 min), the average estimated blood loss was 600 ml and the average volume of fluid used was 655.8 ml. The average nipple-areola complex (NAC) distance from mid-clavicle before surgery was 47cm and the average NAC distance from mid-clavicle post-procedure was 22 cm.

The table below summarizes the results of this study (Table. 1).

**Table 1.** Results from this study.

Age	27.8 years (Range: 19 years-41 years)
Weight of patients	87.5 kg (Range: 60.4 kg-118.8 kg)
Weight of breast tissue excised	1.7 kg (Range: 900 kg-2600 kg)
Duration of surgery	2 Hours Average
Estimated blood loss	600 ml
Estimated volume of fluid used	655.8 ml
Nac distance pre-surgery	47 cm
Nac distance post-surgery	22 cm

Aims of a reduction are to reduce the symptoms the patient has presented with including headaches, shoulder pain, spinal pain, neck pain, dermatitis of the inframammary fold, and pressure on the brachial plexus by brassiere straps, and also to reduce the risk associated with the technique used viz a viz the nipple sensation, loss of NAC.

All of the patients (100%) were satisfied with the outcome of their procedures immediately and 2 weeks after the procedure. Plans to follow- up for a period of 2 years post-operation are made and all future results will be reported.

**Conclusion**

Demand for a much-needed breast-reduction surgery has been affected by the high cost of the procedure in Nigeria. Patients who had their breast-reduction procedures were subsequently satisfied with the result of the procedure that assured them a better quality of life.

The technique used in this procedure was able to achieve the aims of a breast reduction surgery which is to reduce the symptoms the patient has presented with and also reduce the risk associated with the technique used, the nipple sensation loss and loss of NAC.

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