

Reduction Mammoplasty in a Developing Country: A 10-year Review (2001-2010) at the National Orthopaedic Hospital, Enugu

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ABSTRACT

Context: Large breast is a major problem because of associated symptomatology and aesthetic concerns. Reduction mammoplasty (RM) resolves the symptom and at the same time improves the aesthetic appearance of the breast, hence improving self-esteem and social integration. **Aims:** To describe the pattern of RM in a hospital in the developing world and its impact on postgraduate surgical training. **Settings and Design:** A retrospective review of all the RMs done in the National Orthopaedic Hospital, Enugu (a major plastic surgery training center in Nigeria) over a ten-year period (2001–2010), in the developing country of Nigeria. **Subjects and Methods:** All RMs done in the hospital were reviewed after retrieving their records from operation register and medical records department. Fifteen (15) cases were retrieved and analyzed. **Data Analysis:** Data was analyzed with Microsoft excel 2007. **Results:** Average age of female patients who had RM was 26.5 years and 83.3% were single. The most common complaint was abnormally large breast (macromastia). Inferior pedicle technique was commonly used. **Conclusions:** The results of RM are remarkable as it impact positively on the quality of life of the patients. However, the level of awareness about the availability of this service is still low in the region as shown by few cases done over the period of review and this impacts negatively on the training. The need for public awareness cannot be overemphasized.

KEYWORDS: Developing country, macromastia, reduction mammoplasty

INTRODUCTION

Reduction mammoplasty (RM) is a surgery that can be done for therapeutic and aesthetic reasons. Interestingly, it is considered as an interface between reconstructive and aesthetic surgery. The procedure involves essentially the reduction in glandular, adipose and skin tissues with subsequent nipple areolar repositioning. The procedure aims at achieving weight and volume reduction of the breast as well as improved aesthetic outcome.^[1] Careful planning is mandatory in order to achieve symmetry.

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Macromastia with physical or psychological symptoms is the most common indication for this surgery. In developed countries like the United States, the request for the RM is comparatively higher making it the most common breast surgery done by plastic surgeons^[2] In 2007 alone, 106,179 reduction mammoplasties were done in the United States, although there was a 16% reduction in the following year because of economic recession^[2] On the other hand, in developing economies, plastic surgeons have not enjoyed same patronage. For example, in Nigeria there is paucity of literature on RM^[3-5] Most of the works done showed small sample sizes in comparison with the numerous western series with significantly large sample sizes.

Majority of patients reported in literature, in Nigeria, usually present because of symptoms associated with enlarging breast and not primarily due to cosmetic concerns^[3] In Ghana, a developing economy, the mean age of presentation is 28.5 years and the volume of patient presenting to Plastic Surgeons are comparatively small as well^[6] However, a different trend is noticed in the United States where a higher average age of females having RM is 47 years of age^[2]

An enlarged breast can impact negatively on the physical health of a woman^[7] producing the following symptoms: breast pain, back pain, intertrigo, susceptibility to carpal tunnel

syndrome.^[8] Poor changes in posture is a common association resulting from the weight of the breast or attempts at disguising the real size of the breast.^[9] Degenerative spine disorders have also been reported as a feature of macromastia.^[10] Albeit physical symptoms, the psycho-social limitations are expressed as self-consciousness, anxiety, poor self-esteem and negative body image.^[11] Despite the mixed bag of symptoms associated with macromastia, the major reason for presentation alluded to by women is essentially to relieve physical ones.^[12] Many studies have demonstrated the numerous benefits of the surgery like relief of breast symptoms, significant improvement in self-esteem and better appearance.^[13] However, the outcome of the surgery is affected more by psycho-social factors than changes in breast dimensions.^[14]

Most commonly used technique is the 'inferior pedicle' popularized by Goldwyn, Robbins and Courtiss.^[15] The technique is easier, learning curve is gentle and the results are predictable. The largest series involving 60 patient in a ten-year period, in the region, supports the usefulness of the above mentioned technique.^[4] The advantages such as preservation of nipple sensation and lactation are highly desired by most patients. Breast shape and symmetry were also found to be satisfactory.

The low volume patient turnover at plastic surgery clinics in training centers will indeed have an impact on specialized training as the frequency of exposure to such procedures will be minimal in a period of training, hence affecting the proficiency of surgeons in this area.

SUBJECTS AND METHODS

This is a retrospective review of all the patients that had RM at the National Orthopaedic Hospital, Enugu South East Nigeria within a 10-year period (January 2001-December 2010). The hospital is a regional specialist plastic and orthopedic surgery center. The services are utilized by south-east, south-south, mid-west and middle belt regions of Nigeria populated by over 27million persons. It is a core training center for most plastic surgeons in Nigeria.

Patients' hospital numbers were retrieved from theatre records and operation register. The records/folders were recovered from the medical records department. The following data were extracted from their records such as: Age, marital status, address-urban or rural, level of education, indication for surgery, procedure, technique, site of surgery, use of transfusion, duration of hospital stay, co-morbidities and post-operative complications.

The data was analyzed with Microsoft Excel and interpreted accordingly.

RESULTS

A total of 15 female patients were recruited with a mean age of 26.5 years and a range of 18-42 years. About 80% (12)

of total sample were single female while the remaining three were married. The married constituted the upper values of the age range. The most frequent complaint at presentation was abnormal increase in breast size resulting in frequent change of brassiere to larger sizes over a period of time [Table 1], whereas the clinical symptoms were less complained about.

The proportion that lived in urban area and possibly had access to various information media was 93.33%, whereas 6.67% (1) lived in the rural areas [Figure 1].

The educational level of patients that presented showed that 80% (12) attained tertiary level (university/polytechnics/colleges) while 13.33% and 6.67% attended primary and secondary levels of education, respectively [Figure 2].

The most common indication for the procedure was macromastia (14 cases), whereas giant fibroadenoma accounted for one case of RM. Bilateral reduction mammoplasty was done on all the patients except for the patient that had a unilateral giant fibroadenoma.

Inferior pedicle technique was commonly used (93.33%) while breast amputation with nipple-areolar grafting was used in one case.

Blood was used in all cases except one. In 53.3% of cases autologous blood transfusion was used. Patients usually donated

Table 1: The symptomatology associated with the cases

Symptoms	Frequency (%)
Abnormal increase in breast size	12 (80)
Back pain	3 (20)
Breast pain	3 (20)
Intertrigo	2 (13.33)
Brassiere strap markings	2 (13.33)
Chest pain	1 (6.67)
Neck pain	1 (6.67)
Breast mass	1 (6.67)

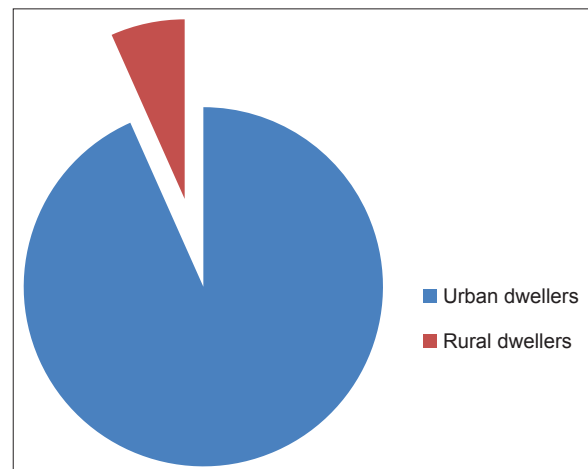
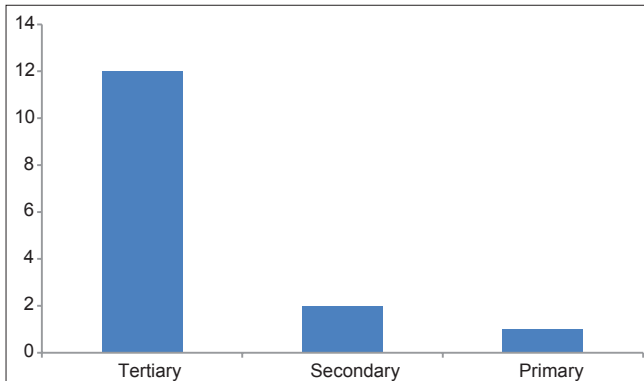


Figure 1: Distribution of patient residence

Table 2: The transfusion used in the sample

Type of transfusion	No. of cases (%)
Autologous	8 (53.33)
Allogenic	6 (40)
Bloodless	1 (6.67)

**Figure 2: Level of education of patient**

and stored before surgery [Table 2]. On the average, 2 units of blood were used per patient.

The overall complication rate was 33.33% with wound dehiscence being the most common (20%). Other complications were poor nipple sensation and hypertrophic scarring being 6.67% each.

DISCUSSION

Reduction mammoplasty is an uncommon procedure in our center as shown by the small sample size over a period of ten years. This translates to an average of 1.5 cases per year. This is a common trend in the region as shown by small number noted in the limited literature available in this topic from the region.^[3,4] The reason for the small sample size may be related with the culture and awareness and not that the cases are not there.

Looking at our results, there seems to be probable lack of awareness that the problems of macromastia can be relieved and improved by plastic surgeons with surgery. This is shown by the fact that in our center, majority (93.33%) of the cases lived in urban areas [Figure 1] and were highly educated (tertiary level) [Figure 2]. Economic constraints were not considered probable mitigating factor to accessing the service as most of our patients had good jobs and surgery cost was based on usual cheaper public hospital rates. The influence of urbanization and education may be linked with the image portrayed by the media of what a good breast should look like-usually large, round, sits high on the chest and looks firm.^[16] These media will include the prints, television and internet. Accessibility to the media will be easier in the urban areas or in an environment where people compulsorily use the media by virtue of educational activities. In the later, patient will likely be influenced by what the media has to say or are likely to get informed advice from others around them. In the region, the hospitals that offer plastic surgery consultations

are located in the urban areas and hence limiting awareness and access to the rural dwellers.

Almost all the patients presented because of one clinical symptom in addition to excessive increase in breast size usually described by frequent change of brassieres [Table 1]. This agrees with findings in most studies even though that post operatively, the psychosocial benefits receive greater emphasis and impact heavily on the woman's personality^[9,11-13] instead of the absence of the presenting symptoms. None presented specifically to improve appearance, self-image and self-esteem even though this was achieved indirectly. Most patients could not verbalize the later which were achieved indirectly at presentation, but were extracted by the surgeons after persistent questioning as very important reasons but remotely placed. This is significant in this report. The dominant cultural environment/belief about cosmetic surgery may be another big factor limiting most prospective patients from presenting for merely aesthetic reasons. There are anecdotal reports that pursuing such cosmetic treatments may be tantamount to querying your Creator. This stands in stark contrast with reasons for presentation in the western world where some may present purely for improved appearance, self image and esteem.^[7] The former may prevent many from accessing help while suffering with problems of macromastia. Another major and significant constraint that may influence access to plastic surgical care of macromastia is the poor appreciation amongst other medical and surgical specialties of the scope of work of the plastic surgeon in the region.^[17] This will affect appropriate referrals to the plastic surgeons when cases present to them. Further compounding the matter is the ability of the medical personnel to remember that macromastia is a differential when patients present with symptoms^[7-10] associated with this condition as noted in the introduction and try to evaluate it properly. However, this is actually being overcome gradually with the increase in number of trained Plastic Surgery Specialist now offering services in hospitals where such did not exist in the past. We recommend that Plastic Surgeons should create awareness of what they do through personal communications, multidisciplinary interaction, information booklets/pamphlets and specialized breast clinics where possible. Interactive radio/television programs that address problems of macromastia and treatment options can be quite helpful.

The mean age of presentation in our center is 26.5 years while it is two years higher in Ghana.^[6] This implies that mostly younger females present for the surgery in the region. This is in contrast with studies in US where the average age of presentation is almost 20 years older.^[2] This can be extrapolated to explain the psyche of the female folk in the different regions. In Nigeria and Ghana, the mean age in the studies coincides with a time when most educated females usually prepare to marry or get married and as such will be conscious of their looks and attractiveness, hence presenting for surgery. Our study showed that 80% of the patients were mainly single females who naturally will be keen about their body image. It could also be that incidence of macromastia is higher in the

younger in the region. The later assertions should be subjects for further studies in our region.

Giant fibroadenoma could be a cause of symptomatic breast enlargement requiring RM to achieve symmetry after lumpectomy. This should be ruled out during evaluation of such patients as this may influence the amount of breast tissue to be excised. It was the etiology in unilateral breast enlargement resulting in the only case of unilateral RM in the series. The general surgeons should be encouraged to parley with the Plastic Surgeon when managing such cases thereby offering the best to the patients. This interaction is still at a budding stage in the region and this should be improved.

The 'inferior pedicle' is the most common technique used in my center. It gives good, predictable result and the learning curve is gentle for residents.^[18] Breast amputation and nipple-areolar grafting were carried out in gigantic breasts only. This technique is rarely used unless indicated in severe macromastia (usually >2500gm of breast weight).^[18] It is fraught with the risk of loss of the nipple areolar complex (NAC) sensation/erection or loss of the free NAC. The use of transfusion was at the rate of two units per patient. This may be high compared to the Ghana series that had 63 patients over 6 years period in which no transfusion was used at all^[6]. We may need to evaluate our blood conservation techniques to further reduce transfusion needs and perhaps employ the use of dermoglandular infiltration with 1:500,000 lignocaine in adrenaline, which has been shown to minimize blood loss significantly in inferior pedicle technique^[19]. However, more than 50% were autologous [Table 2], further reducing the risk of disease transmission.

Wound dehiscence was found to be the most common complication. This usually occurs at the junction of the vertical and horizontal limbs of the inverted 'T' incisional scar.^[19] Wound dehiscence is a common association in series involving the inferior pedicle technique.^[19] However, our complication rate (33.33%) is higher compared to an European study,^[20] in which only inferior pedicle technique is used and surgery was done during the periovulatory period, hence reducing blood loss and subsequent hematoma and seroma formation. The later increases rate of wound infection and subsequent dehiscence. Our surgeries were done within this same period. This implies that we may need to review our aseptic methods and techniques.

The frequency of RM in our region is still low. The low patient turnover will greatly impact on postgraduate training. To assist the growing number of plastic surgery trainees who may not have appropriate exposure to this life-changing surgery, there may be need for case pooling at designated center where the expertise is available so that maximum number of trainees will benefit. Otherwise, workshops could be set up with live surgeries incorporated at such pooling center with minimal cost to sustain the program.

There is also need to improve the awareness of availability of this procedure to the public in order to make easy access. The benefits of the procedure to those with symptomatic macromastia should be given profound publicity. Interactive radio and television programs may be quite useful.

In conclusion, I strongly believe that there will still be an increase in demand for RM in near future. Plastic Surgeons need to brace up to this task in near future and the populace need to be made to understand that this service is available.

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