

Reduction Mammoplasty: The Experience In Ile-ife, Nigeria.

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Background: Reduction mammoplasty is a frequently performed aesthetic surgical procedure in the female adolescent and adult Caucasian population. We reviewed the cases of reduction mammoplasty performed at the Obafemi Awolowo University teaching hospital, (OAUTH), Ile-Ife.

Patients and Methods: A retrospective review of all patients who have had reduction mammoplasty at the OAUTH over a 20 year period was carried out.

Result: Ten patients requested reduction mammoplasty during the period. Two patients declined surgery while one required, and was treated by chemotherapy. Seven patients had surgery. Outcomes were uniformly satisfactory.

Conclusion: We conclude that request for reduction mammoplasty in our surgical practice is uncommon. Request for purely cosmetic reasons is even rarer. Most patients had massive breast enlargements with physical symptoms and gross disfigurement with or without an underlying breast disease which was the usual reason for presentation.

Key words: Breast, Reduction mammoplasty, Gigantomastia

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INTRODUCTION

Reduction mammoplasty (RM) is a well-recognized and accepted cosmetic plastic surgical procedure in the Caucasian population. It is one of the most frequently performed cosmetic procedures and publications on this subject in the Caucasian population by far exceeds that on any other aesthetic surgical procedure.^{1,2} There are numerous causes of abnormal or disproportionate breast enlargement for which patients request reduction mammoplasty.^{3,4} The female breast is by far the more common site of pathologic enlargements. Such enlargement may however be physiologic. The disproportionate increase in the size of the breast, when it occurs, often leads to requests for RM as a purely cosmetic procedure. The aim of RM is to achieve appropriate reduction of the breast to a size that is

physically and psychologically satisfying to the patient.^{5,6} Although the ideal breast size is difficult to determine, guidelines have been suggested to enable the surgeon achieve precision in fashioning the acceptable size of the breast during RM.⁷

Breast reduction may be required not only in adolescents and adults but occasionally in the premenarchal juvenile⁸ and the extent of surgical involvement may be the same as in the adult cases.

The frequency of performing this procedure among Caucasians is high. In south Eastern Nigeria, a series on RM has also been reported.⁹ We set out to review all the patients who had RM at the OAUTH, Ile-Ife, Nigeria. The purpose of this review is to highlight the frequency, indications, underlying pathology, as well as the postoperative outcomes in these patients.

PATIENTS AND METHODS

This is a retrospective review of all patients who have had RM at the Obafemi Awolowo University Teaching Hospital, Ile-Ife, Nigeria, between January 1986 and November, 2006. Demographic data, duration of symptoms, physical characteristics of the enlargement and associated pathology, relevant investigations, operation performed and outcome of treatment, were retrieved and analyzed. The mean age, mean duration of symptoms patients' summary and available clinical photographs are presented.

RESULTS

A total number of 10 patients requested breast reduction during the study period. Two of them declined surgery, one because a scar less surgery could not be guaranteed and the other for fear of surgery. One other patient had a primary bilateral breast lymphoma that was managed by chemotherapy and all three are excluded.

The remaining seven patients were females and their age ranged from 19 to 41 years, and the mean age was 24.7 years. The duration of their symptoms varied from 6 months to 17 years with a mean of 4 years three months.

All patients had mammary hypertrophy that required RM. Five of them were bilateral while the other 2 were unilateral making twelve breasts operated upon. Only one of these patients had surgery for purely cosmetic reasons.

Table I. Summary of the patients.

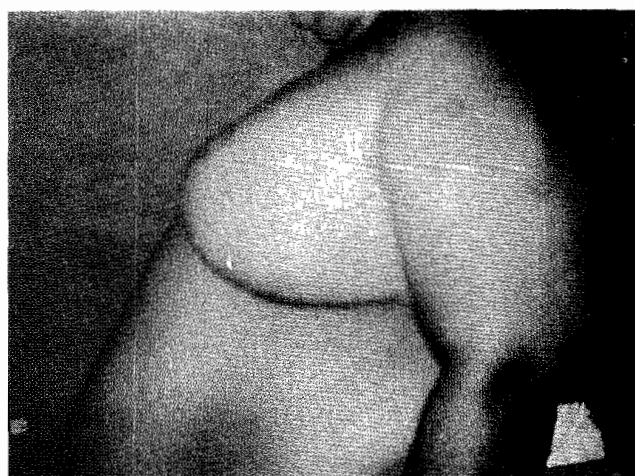
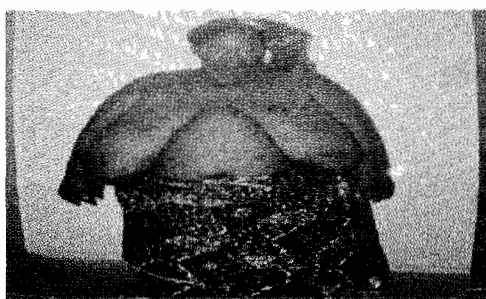
Serial no	Age in years	Sex	Duration of symptoms	Side of pathology	Parity	Hormone profile	Family history	Weight	Height	Histology	Outcome of treatment
1	30	F	6 years	Bilateral	3	hyperprolactinemia	Mother	140kg	1.46m	Normal	satisfactory
2	19	F	6 months	Right	Nil	Not done	None	62kg	1.51m	Fibroadenoma	satisfactory
3	20	F	6months	Bilateral	Nil	Not done	None	65kg	1.62m	Nil	satisfactory
4	25	F	9months	Right	Nil	hyperprolactinemia	None	75kg	1.65m	Phylloides tumor	satisfactory
5	16	F	18month	Bilateral	1	Normal	none	60kg	1.50m	normal	satisfactory
6	41	F	18years	Bilateral	3	hyperprolactinemia	Mother & sibling	75kg	1.63m	normal	satisfactory
7	22	F	3years	Bilateral	nil	Normal	none	72kg	1.68m	normal	satisfactory

Case 1.

A 30-year-old married housewife, presented with a 6-year history of bilateral breast enlargement that started during her first pregnancy and had increased progressively ever since. She had three children at presentation. There was a positive family history of bilateral mammary hypertrophy in her mother. She was a hypertensive heart disease patient on treatment.

Examination revealed an obese woman with a body mass index (BMI) of 46.6 (weight 140kg, Height 1.48m), with bilateral gigantomastia, epigastric hernia, respiratory difficulty and bilateral knee osteoarthritis. The full blood count, urinalysis, fasting blood sugar and 2-hour postprandial blood sugar levels, were within normal limits. The serum follicle stimulating hormone, oestradiol and cortisol were also within normal limits but she had a hyperprolactinemia of 25.6ng/ml (6-24ng/ml). She had bilateral reduction mammoplasty by the inferior pedicle technique after hyperprolactinemia was corrected. Her postoperative condition was satisfactory. Histology of excised specimen revealed normal breast tissue. There was no record of follow up.

Figure 1



Case 2.

A 19year old single nulliparous female student, presented with a 6-month history of right breast mass, which has been increasing progressively in size. It was not associated with nipple discharge, breast pain or ulceration. There was no family history of breast lump and has never been pregnant. No history of use of oral contraceptives, and had regular menstrual cycles.

Examination revealed an otherwise healthy young lady with a firm, mobile lump in the lower inner quadrant of the right breast measuring 6 by 6 cm. No nipple discharge or skin involvement and no axillary lymphadenopathy. She defaulted from surgical out patient care after the initial assessment and presented 2 years later. The mass now measured 18 by 17 cm, was still mobile, non tender but hard in consistency. She subsequently had right breast lumpectomy with a reduction mammoplasty at the same operation. Histology confirmed a fibro adenoma.

Case 3

A 20-year-old nulligravid and nulliparous female student presented with a 6-month history of painless right breast lump. The lump had progressively increased in size, and was not associated with nipple discharge or breast ulceration. There was neither a history of use of oral or other hormonal contraceptives nor a family history of mammary hypertrophy or breast cancer.

Examination revealed a healthy looking young lady with bilateral mammary hypertrophy. There was a firm, central, oval, mobile mass measuring 5cm in diameter in the right breast. The left breast had a mass 2cm in diameter in the upper inner quadrant. A diagnosis of juvenile (virginal) hypertrophy of the breasts with bilateral fibro adenoma was made and she had bilateral reduction mammoplasty via the inferior pedicle technique, with excision of 420g and 480g of tissue from the right and left breasts respectively. Patient had an uneventful and satisfactory postoperative recovery. The histology was not available.

Case 4.

A 25year old nulligravid, unmarried, female trader, presented with a painless swelling on the right breast of 9 months duration, with sudden painful episode of nine days duration. She had fever, but no nipple discharge, cough or weight loss. She attained menarche at 15 years and had regular menstrual cycles. There was no family history of breast disease and no history of use of hormonal contraceptive pills.

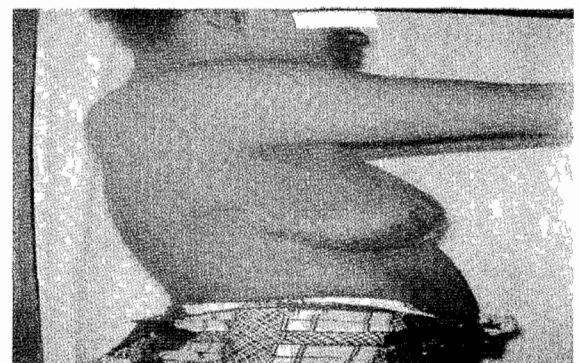
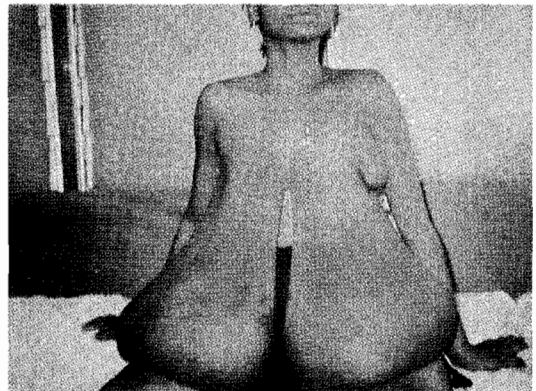
Examination revealed an ill looking woman with a right pendulous breast and a mass measuring 30 by 30 cm at the most dependent part with a wide areola and flat nipple. Fine needle aspiration cytology confirmed a giant fibro adenoma with features of mastitis but no evidence of malignancy. Her hormone assay revealed hyperprolactinemia of 30ng/ml (6-24ng/ml). Skull X-ray showed a normal sella turcica with no vault or intracranial lesions. The acute mastitis was managed conservatively with rest and antibiotics. Three months later, she had excision of the fibroadenoma with unilateral reduction mammoplasty by the inferior pedicle technique with excision of 3.55kg of breast tissue and fibro adenoma. Histology of the excised specimen confirmed benign phylloides tumor. She developed secondary hemorrhage from the operation site 9 days after being discharged. This necessitated readmission, blood transfusion and further wound care after which she was subsequently discharged home 12 days later.

Case 5

A 16-year-old unmarried nulliparous student presented with bilateral breast enlargement of 18 months duration. This was first noticed about 2 months after menarche, which was attained at 14 years of age. The enlargement had progressed to the size at presentation, with both breasts reaching down to the upper thighs. There was no history of use of oral contraceptives but she had amenorrhea of a few months duration. There were no associated growth spurts, no breast pain nor visual disturbances and no family history of similar illness. She had stopped schooling on account of physical disfigurement.

Examination revealed a 50kg lady, healthy looking, with bilateral massive mammary hypertrophy and a left axillary breast with no nipple. She had a gravid uterus of 20weeks size. She absconded from the outpatient clinic to present two and half years later for reduction mammoplasty, having aborted the baby. Then she weighed 60.5kg, and her hormone assay of prolactin, follicle stimulating hormone and estrogens were within normal limits. She had bilateral reduction mammoplasty by the inferior pedicle technique. Postoperatively, she had right breast wound infection and nipple necrosis that was managed by debridement and secondary wound closure. The nipple areolar complex on the right side was preserved.

Figure 2



Case 6.

A 41-year-old woman presented with an 18-year history of bilateral breast enlargement. She had three children. The growth has been progressive and continuous till presentation with no noticeable growth spurts. There was a history of primary infertility treated with bromocriptine and led to conception 2 years later. There was no galactorrhoea, no breast lump or pain. There was a family history of mammary hypertrophy in the mother and a sibling. All her children were females and none had attained menarche. She was concerned about the massive weight and neck pains for which surgical reduction was requested.

Examination revealed a healthy looking woman with bilateral mammary hypertrophy up to the upper thighs. Her hormonal assay revealed hyperprolactinemia of 538miu/L(40-470miu/L) with normal leutenizing hormone and follicle stimulating hormone, but low progesterone 2.8ng/ml (5.2-27.9ng/ml) and low oestradiol 39ng/ml (50-150ng/ml). Hyperprolactinemia was controlled with bromocriptine and she had bilateral reduction mammoplasty by breast amputation and free nipple grafting with excision of 5.1kg of breast tissue from both breasts. Both nipple grafts survived and she is still being followed up in the surgical out patient.

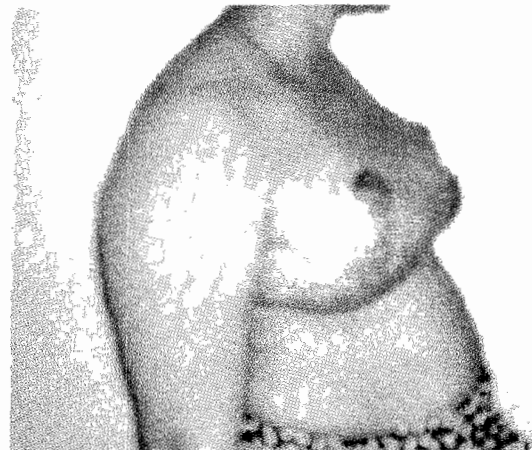
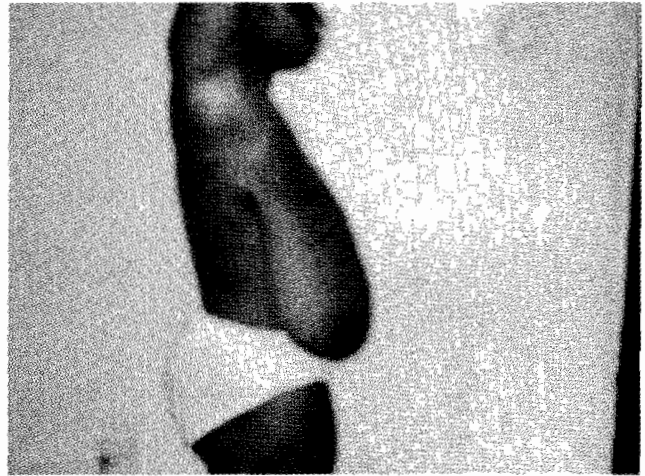
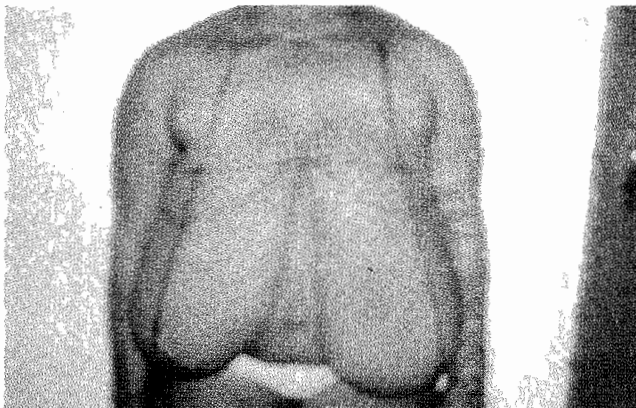


Figure 3



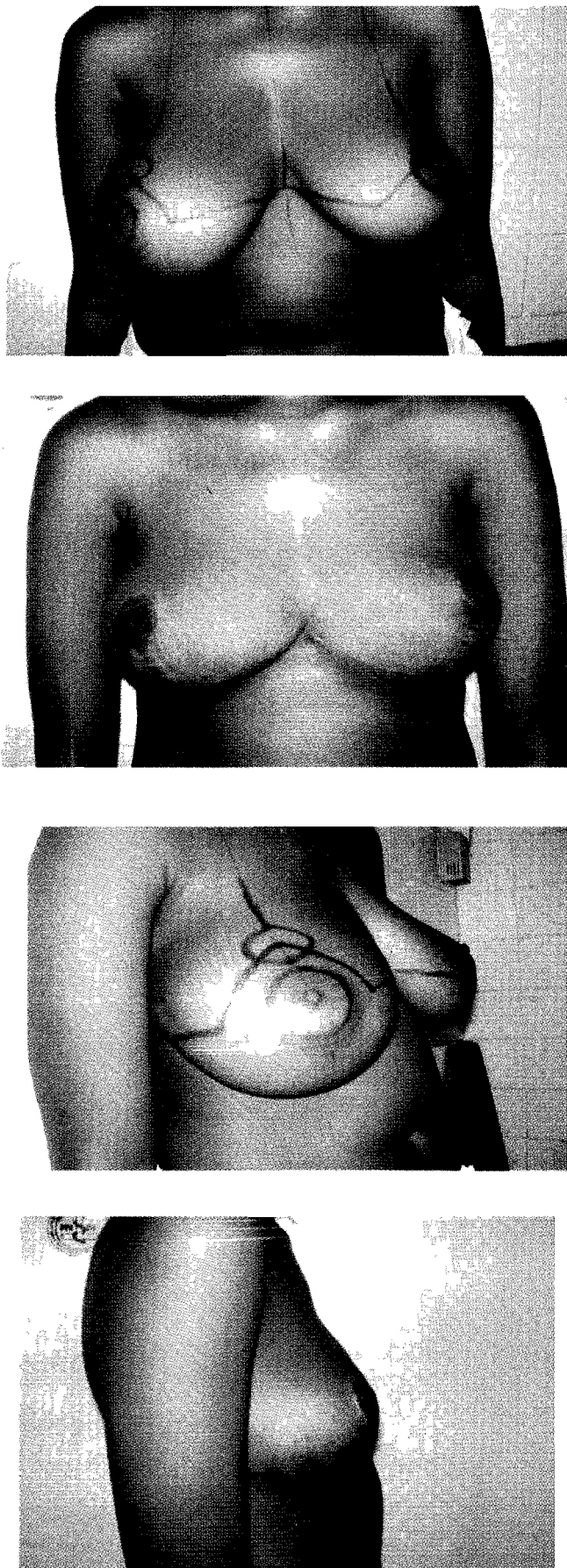
Case 7

22year old female student presented with a 3 year history of gradual progressive bilateral breast enlargement. There was no breast lump or breast pain. There was associated back ache and neck pain of one year duration with significant impairment of physical activity.

There was no history of excessive weight gain or use of steroids and no known family history of breast hypertrophy.

Examination revealed a healthy looking young lady with asthenic build. Breast examination showed bilateral asymmetrical enlargement of the breasts with the right side greater than the left. There were no breast masses, skin changes or palpable axillary lymphadenopathy. Blood and radiological investigations were done and were within normal limits. A diagnosis of bilateral virginal hypertrophy of the breasts was made and she had bilateral reduction mammoplasty by the central mound technique with a good postoperative outcome.

Figure 4



DISCUSSION

Reduction mammoplasty is a frequently requested cosmetic procedure among Caucasian population but request for this procedure is very infrequent in our practice as only 10 patients requested, and 7 had the procedure, over a 20 year period.

Gigantomastia may be due to several causes and it might be expected that requests for RM would be common but this is not so in this review. That abnormal enlargements are more common in the female breast is buttressed by all patients being females. This is similar to reports by other reports⁴. Virginal hypertrophy of the breast is one of the most common causes arising in the peripubertal period and demonstrated in Case 5. Mammary hypertrophy may or may not be familial.

Familial juvenile hypertrophy is a rare cause of gigantomastia in peripubertal females³. The pathology is limited to the breast with an otherwise normal growth and development but its etiology is unknown. The family history of breast enlargement present in cases 1 and 6, may suggest hereditary causes. It is believed that these isolated breast enlargements are due to abnormal excessive end organ response to a normal hormonal milieu¹⁰.

Gigantomastia may also be pregnancy related¹¹. This is illustrated by case 1. When associated with pregnancy, it may improve after delivery but may also get worse, as demonstrated in case 5 in which gigantomastia worsened despite termination of pregnancy. Rarely, it may rapidly progress to breast necrosis, as the enlarging breast outgrows its blood supply, and this could necessitate emergent bilateral mastectomy.¹¹

Drugs are only marginally effective in reversing gigantomastia^{8,11}, therefore surgery remains the main stay of treatment. Various pedicled techniques described are most suited to mild to moderate gigantomastia. They ensure the preservation of mammary function and sensation by preserving the nipple areola-complex on a vascularised pedicle. Traditionally, severe gigantomastia is treated by breast amputation and free nipple areola grafting but recent reports¹² suggest that this need not be considered standard practice. Good results were obtained with inferior pedicle technique, but nipple necrosis is a common complication with severe gigantomastia, as demonstrated in case 5.

The average combined weight of specimens from the Caucasian population varies from 320g and 1050g^{2, 13} respectively. Two patients combined weights of 3.5kg and 5.1kg. The attainment of such massive enlargements is the reason why breast amputation and nipple grafts may be required in these patients. The physical limitation imposed by such massive enlargements is the prime reason for requesting RM and breast amputation and free nipple graft was offered two of these patients to achieve appropriate reduction in the breast size.

When gigantomastia is associated with a breast lump, a reduction mammoplasty may be combined with lumpectomy but if histology confirms a positive surgical margin or the final pathology is a breast cancer, a completion mastectomy should be done¹⁴. This was not necessary in case 2 as the histology confirmed a benign mass.

Two other patients had hyperprolactinemia as the cause of their mammary hypertrophy; this shows that an underlying pathology is often present in these patients. There is need to investigate patients with gigantomastia for underlying hyperprolactinemia which may cause a recurrence if not appropriately controlled prior to surgery.

Only one patient (case 7) requested reduction mammoplasty for purely cosmetic reasons, yet she had associated physical symptoms of excess weight, back and neck pain, her father is a medical practitioner and this may explain her disposition and awareness of the possibility of surgical treatment.

Possible reasons for declining or not requesting reduction mammoplasty such as fear of surgery, and anesthesia and scarring of the breast were demonstrated by the two patients who declined surgery. Scarring is particularly important in pigmented races such as ours with a higher incidence of development of abnormal scarring, which may complicate surgery. The commonly utilized inverted T scar has been found to compare favourably in outcome with other techniques that avoid the vertical scar^{15, 16}.

Interference with breastfeeding is also another possible reason as most of these patients are in the reproductive

age group and the advantages of breastfeeding are well known. The mean age of the patients in this review is 24.7years. This need not necessarily be a problem if patients present early enough to have reduction mammoplasty by pedicle techniques thus avoiding breast amputation and free nipple graft. Up to two-thirds of patients who had reduction mammoplasty by these other techniques were successful at breastfeeding after surgery¹⁷ and this concern need not be a deterrent to reduction mammoplasty when indicated. However with increasingly large breasts, the risk of nipple-areolar necrosis increases and this may occur as it seen in case 5.

Two of the patients (cases 2 and 5) developed gigantomastia in adolescence. Although there have been concerns about performing reduction mammoplasty in this group of patients due to the permanence of results and long term complications, high rate of long term satisfaction has been reported.¹⁸ Age should therefore not be a deterrent to surgery when indicated as the patients social, psychological and educational accomplishment may be truncated as in case 5.

Four of the patients had normal histology; one was fibroadenoma and the other a phyllodes tumour. The last histology report was unavailable. The importance of histologic examination of reduction mammoplasty specimens has been stressed.¹⁹ Although the breast tissue is usually considered normal, occult carcinoma may be present^{20, 21}.

We conclude that there is paucity of patients requesting RM in our practice in Ile-Ife, southwestern Nigeria. Requests for mammoplasty for purely aesthetic reasons are not common. The few cases that present were due to excessive weight problems with neck and back pains, limitation of mobility and interference with physical activities.

Lack of awareness, fear of surgery, as well as religious and cultural beliefs, may be contributory to the few requests. A study on the level of awareness of this surgical procedure in this study population is suggested.

REFERENCES:

1. Regnault P. Breast Reduction and Mastopexy, an old love story: B Technique Update. *Aesth. Plast. Surg.* 1990 14:101-6.
2. Culliford AT, Karp NS, Kleinerman R, Spector JA. The vertical reduction mammoplasty a prospective analysis of patient outcomes. *Plast. Surgery* 2004; 10: 9-13.
3. Gorvin-Ye hudain J, Kogan L, Cohen H I, Falik-Zaccai T C. Familial juvenile hypertrophy of the breast. *J. Adolesc Health* 2004; 35(2): 151-5.
4. Hawary MB, Cardoso E, Mahmud S, Hassanain J. Giant Breast Tumors. *Annals of Saudi medicine* 1999; 19(2): 174-6.

5. Blomquist L, Ericksson A, Brandberg Y. Reduction mammoplasty provides long-term improvement in health status and quality of life. *Plast. Reconstr. Surg* 2000; 106(5): 991-7.
6. Kinell I, Beausang-Linder M, Ohlsen L. The effect on the preoperative symptoms and the late results of Skoog's reduction mammoplasty. *Scand J. Plast Reconstr Hand Surg* 1990; 24: 61-5
7. Remselaar JM. Precision in Breast Reduction. *Plast. Reconstr. Surg* 1988; 82(4): 631-41.
8. Gerber B, Krause A, Lochmuller E M, Janni W, Friese K. Juvenile gigantomastia: case report and literature survey. *Zentralbl Gynakol* 2004; 126(3): 167-9. [German]
9. Akpuaka FC, Jiburum BC. Reduction mammoplasty by the inferior pedicle technique: experience with moderate to severe breast enlargement. *West Afr J Med* 1998; 17(3): 199-201
10. Misirlioglu A, Akoz T. Familial severe gigantomastia and reduction with free nipple graft vertical mammoplasty technique: report of 2 cases. *Aesth. Plast. Surg.* 2005; 29(3): 205-9.
11. Vidaeff AC, Ross PJ, Livingston CK, Parks DH. Gigantomastia complicating mirror syndrome in pregnancy. *Obstet Gynaecol* 2003; 101:1139-42.
12. Lecerna M, Spears J, Mitra A, Medina C, McCampbell F, Kiran R. Avoiding free nipple grafts during reduction mammoplasty in patients with gigantomastia. *Ann Plast Surg* 2005; 55(1): 21-2.
13. Hoopes JE, Maxwell PG. Reduction mammoplasty: A technique to achieve the conical breast. *Ann Plast Surg* 1979; 3(2): 107-11.
14. Chang E, Johnson N, Webber B, Booth J, Rahhal D, Gannett D, Johnson W, Franzini D, Zezula H. Bilateral reduction mammoplasty in combination with lumpectomy for treatment of breast cancer in patients with macromastia. *Am J Surg.* 2004; 187(5): 647-50
15. Hosnuter M, Tosun Z, Kargi E, Babucco O, Savaci N. No-vertical-scar technique versus inverted T-scar technique in reduction mammoplasty: a two-center comparative study. *Aesth Plast Surg* 2005; 29(6): 496-502
16. Ramon Y, Sharony Z, Moscona RA, Ullmann Y, Peled IJ. Evaluation and comparison of aesthetic results and patient satisfaction with bilateral breast reduction using the inferior pedicle and McKissock's vertical bipedicle dermal flap techniques. *Plast Reconstr Surg.* 2000; 106(2):289-95.
17. Witte PM, Vanlder lei B, Van der Biezen JJ, Spronk CA. Successful breastfeeding after reduction mammoplasty. *Ned Tijdschr Geneesk* 2004 26; 148(26): 1291-3. [Dutch]
18. Lee MC, Lehman JA Jr, Tantri MD, Parker MG, Wagner DS. Bilateral reduction mammoplasty in an adolescent population: adolescent bilateral reduction mammoplasty. *J Craniofac Surg.* 2003;14(5):691-5
19. Ishag MT, Bashinsky DY, Baliaeva IV, Niemann TH, Marsg WL Jr. Pathologic findings in reduction mammoplasty specimens. *Am J Clin Pathol.* 2003; 120(3): 377-80.
20. Kakagia D, Fragia K, Grekou A, Tsoutsos D. Reduction mammoplasty specimens and occult breast carcinomas. *Eur J Surg Oncol.* 2005; 31(1):19-21.
21. Colwell AS, Kukreja J, Breuing KH, Lester S, Orgill DP. Occult breast carcinoma in reduction mammoplasty specimens: 14-year experience. *Plast Reconstr Surg* 2004; 113(7):1984-8.