Original Article

Surgical Management of Gynecomastia : Liposuction and Subcutaneous Mastectomy

Waheduzzaman S

Abstract:

Background: *There are multiple options for surgical treatment of gynecomastia including liposuction, subcutaneous mastectomy and combination of both. In this study we observed the outcome of the options of surgical treatment of Simons Grade I and Grade IIA gynecomastia.*

Methods: *This is an observational study of 26 patients who underwent surgery for gynecomastia. Surgical management was planned according to grading of gynecomastia, amount of fatty tissue and glandular tissue present in the enlarged breast. Outcome was assessed and patient satisfaction was surveyed with regards to palpable lump, size, shape, scaring and overall outcome.*

Results: *Out of 26 patients 25 had bilateral gynecomastia, 1 had unilateral gynecomastia. So, total 51 breasts were operated. Of them 23 breast were Grade I, 28breast were Grade IIA. 21 breasts were treated with liposuction only, 30 were treated with combination of liposuction and subcutaneous mastectomy. More satisfactory results were observed in combination group with liposuction and subcutaneous mastectomy.*

Conclusion: *Our study shows that combination treatment with liposuction and subcutaneous mastectomy results in satisfactory outcome.*

Key words: *Gynecomastia, Liposuction, Subcutaneous Mastectomy.*

Introduction : Gynecomastia is a benign enlargement of male breast due to proliferation of glandular tissue, which presents as a rubbery or firm mass extending concentrically from the nipple. It is the most common benign condition of male breast and is estimated to affect about 40-65% of males[1].

Correspondence to:
Lt Col Dr Syed Waheduzzaman, MBBS, FCPS (Surgery), MS (Plastic Surgery), Classified Specialist in Surgery and Plastic Surgeon, Combined Military Hospital, Dhaka. email : wahidplastic@gmail.com

Pseudogynaecomastia occurs when the enlargement of breast is secondary to adipose tissue rather than breast tissue. Clinically it may sometimes be difficult to distinguish gynecomastia from pseudogynecomastia especially in obese patient[2].

Commonly gynecomastia is bilateral but it may be unilateral as well. Gynecomastia is caused by imbalance between the stimulatory effect of estrogen and the inhibitory effect of progesterone. Most of the cases of

gynecomastia are physiological and does not require any forms of treatment except reassurance[3]. Gynecomasta which are persistent for more than 2 years are unlikely to regress spontaneously or with other form of medical treatment as the tissue becomes irreversibly fibrotic[4].

The psychological burden of gynecomastia on the patient can be appreciable, making them at increased risk of psychological disorders such as depression, anxiety, and social phobia[5,6]. This necessitates intervention in most cases to restore the masculine look of the chest and achieve psychological satisfaction, particularly in grade I and II gynecomastia[7] in which excision of skin is seldom required.

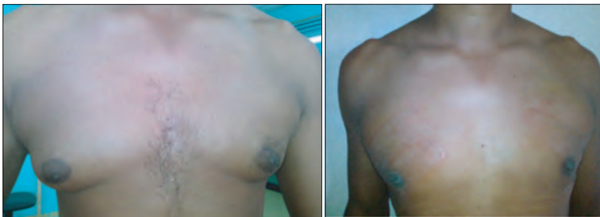

Figure 1: *Pre and Post operative picture of Gr –I Gynecomastia (Patient 1)*

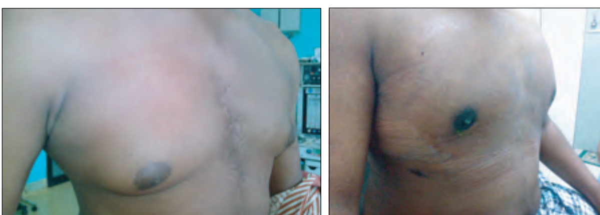

Figure 2: *Pre and Post operative lateral view of patient 1*

Many surgical techniques for correction of gynecomastia have been described; the technique often depends on the type and severity of the condition. Surgical options include open excision, liposuction or combination of the two methods[5]. The presence of unsightly scar detracts from the success of operation despite in efficient reduction of breast volume and skin envelop. Minimum scaring can be achieved by liposuction alone. But liposuction is known to have a limited effect on the dense glandular and fibro connective tissue[8] and this dense glandular tissue when it is much more, it needs to remove by mastectomy. Circumareolar approach for mastectomy is sufficient and gives better aesthetic outcome and creates a normal looking chest wall.

We conducted an observational study in CMH Dhaka among the patient who underwent surgical management of gynecomastia with either liposuction or combination of subcutaneous mastectomy and liposuction.

Methods:

In this study we assessed the patient who underwent surgical treatment of gynecomastia in the form of Liposuction or combination of liposuction and subcutaneous mastectomy between January 2018 to july 2019.

All male patients who came to our plastic surgery OPD with the complaints of enlarged breast were first physically examined. Then thorough history taking was done and hormonal screening was also done to all the patients for determining the pharmacological, physiological and pathological causes. Patient with pharmacological or pathological cause was excluded from the study. Diagnosis was made on the basis of observation and

palpation of breast. All the cases were graded as per Simon's classification[7]. Only grade I, minor breast enlargement without skin redundancy and grade IIA, moderate breast enlargement without skin redundancy was included in the study. Written consent was obtained from each patient.

Patient's demographics, complaints, examination findings, grade of gynecomastia, operative time, patient satisfaction and complications were recorded. Patients were followed up for 6 weeks. All the data were analyzed by the author.

Preoperative preparation:

All the patients were explained about the procedure and possible complication at first doctor's visit and at the day of operation. Signed informed consent was obtained from all patients. Infra mammary fold, breast

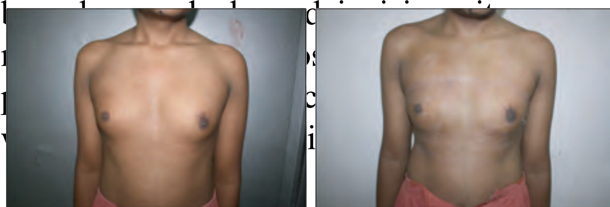

Figure 3: *Pre and Post op picture grade I gynecomastia (Patient 2)*

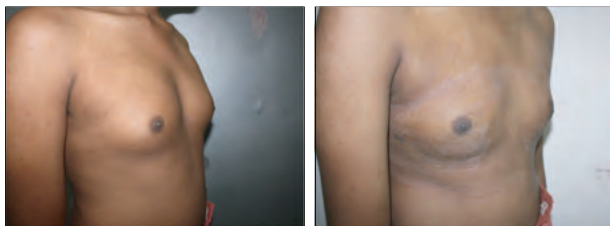

Figure 4: *Pre and Post op lateral view of patient 2*

Surgical technique:

Patient was positioned on supine position with bilateral upper limb abduction on the operation table. Patient, surgeons, anesthetist and nurses undergo WHO safety checklists before administrating anesthesia. All the procedure was done under general anesthesia. A stab incision of 2-3mm was made by at infero-lateral corner of the breast. Bilateral breast were infiltrated with tumescent solution (500ml Normal Saline + 20ml of 2% Lignocaine + 1ml of 1:1000 adrenaline). Multiple hole blunt tip 2mm cannula was used for tumescent infiltration. Pretunneling was done before the liposuction. We used power assisted liposuction system (Vacuson 60 from NOUVAG Switzerland) then liposuction was done along the preoperatively marked area. 4mm blunt tip Mercedes cannula was used for liposuction. If there is minimal glandular tissue after liposuction then the glandular tissue was excised with pull through technique. The amount of fat removed was noted. The stab incision was closed with 5/0 prolene.

With the background of preoperative assessment and peroperative assessment after liposuction decision of mastectomy was done where needed. A semicircular incision was made on inferior aspect of nipple areolar complex. Using diathermy, dissection was done inferiorly to the border of the breast, then from the deep plane to the upper limit of the breast. Dissection was continued superiorly to the incision leaving a 1-1.5cm disc of breast tissue on the undersurface of

areola to prevent sunken areola and preserve nipple sensation and vascularity. After meticulous hemostasis, negative pressure suction drain number 14 was inserted through the incision of liposuction cannula insertion site and secured with 3/0 silk. Wound was closed in two layers with 5/0 vicryl and 6/0 prolene and antibiotic ointment was applied over the wound. Compression dressing was applied postoperatively.

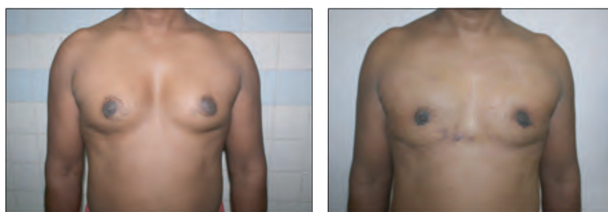

Figure 5: *Pre and Post op view of Grade II gynaecomastia (Patient 3)*

Patient who underwent only liposuction was discharged on the day after operation and the other patients were discharged on third post-operative day. Dressing change was done on first post-operative day and drains were removed once the volume was less than 15ml/day. Compressive dressing was applied for 10 days followed by compression garments for 6 weeks. Patients were encouraged to resume their regular work after 2 weeks. All the patients were followed up for six weeks.

Results:

Total 26 patients were operated for gynecomastia between January 2018 and July 2019. Sixteen (61.5%) out of 26 were seeking treatment because of cosmetic and psychological problems. Five patients (19.2%) complaints of local pain while three (11.5%) patients indication was a combination of this problem. In the remaining two patients fear of cancer was the cause of seeking treatment. Twenty five cases were bilateral and one case was unilateral gynecomastia. Total 51 breasts were operated. Age of the patients was ranging from 16 years to 44 years. Mean age was 26.8 years. Preoperative grading according to Simon classification were Grade I (n=23) and Grade IIa (n=28). All the cases of gynecomastia were idiopathic and without any comorbidity. Clinical examination revealed that 85% (22/26) of patients had considerable fat deposition combined with glandular hypertrophy while the remaining 15% (4/26) had predominantly glandular hypertrophy with modest fat deposition[9].

Out of 26 patient 11 (42.3%) patient were treated with liposuction and 15 (57.7%) patient were treated with combination of liposuction and mastectomy. Average operation time for liposuction was 80 minutes and 120 minutes for combination of liposuction with mastectomy. The complication involved hematoma in one case and partial areolar necrosis in one case. Overall rate of complication was 7.69% (2/26). Hematoma resolved spontaneously and no need to drain required. Partial areolar necrosis healed with secondary intension with minimum scaring. So no intervention required for management of complication of our patients[10].

89% (23/26) of patients found the cosmetic result is good or excellent. Three patients were not satisfied with the results. The reason for the dissatisfaction was insufficient volume of tissue removal. There were no cases of inverted nipple or disfigured scar[11].

Discussion:

Gynecomastia is the most common breast problem among men. Although most cases of gynecomastia do not require treatment but persistent cases of gynecomastia is associated with low self-esteem, embarrassment and psychological issues among patients. Therefore all cases of gynecomastia should be evaluated and appropriate treatment should be advised. Earlier it was treated by glandular excision but now it is treated either by liposuction or combination of liposuction and glandular excision depending on presence of fatty and glandular tissue and in more advanced case where there is excess skin combination of excision of skin, glandular excision, NAC reposition along with liposuction to reduce fatty tissue [9,10].

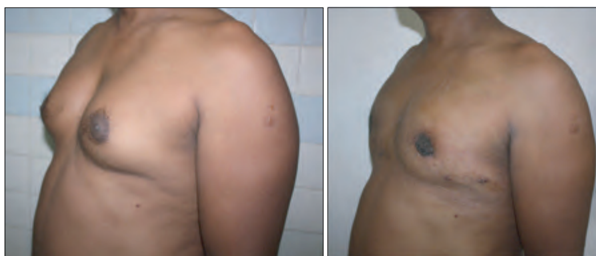

Figure 6: Pre and Post op lateral view of Patient 3

Our study presents 26 cases of gynecomastia patient who were treated with either liposuction or combination of liposuction and circumareolar mastectomy. All the cases except one were bilateral gynecomastia. Other studies also demonstrate that most cases of gynecomastia are bilateral[11, 12]. Cosmetic and psychological problem was the most common cause reason to sought for treatment of this study. Ridha et al. also make similar conclusion in their study[13].

Our finding of most of the patient (85%) having considerable fat deposition combined with glandular hypertrophy which makes liposuction as a mainstay of surgical treatment. Boljanovic et al have the similar finding in their study. The choice of surgical technique depends on severity of breast enlargement and presence of excess adipose tissue. When gynecomastia includes little glandular tissue, liposuction only would be sufficient to correct the lesion. However, if there is glandular tissue that should be removed, subcutaneous mastectomy is a commonly used technique that involves direct resection of glandular tissue using a periareolar or trans-areolar approach with or without liposuction[1]. If the surgery could be done only with liposuction it gives some advantage like minimum or no scar, excellent hemostasis, can be performed with sedation and as day case surgery, no need to put drain. On the other hand those who had considerable amount of glandular tissue they needs combination of liposuction and mastectomy and this combination offer various advantages compared to surgical excision alone. The operation is performed through a shorter incision, liposuction ensures accurate contouring of the periphery[14]. This contributes to achievement of a better cosmetic result using a minimally invasive technique. Liposuction before glandular excision facilitates the resection of glandular tissue[16]. Our study demonstrate overall complication rate of 7.7% which is same as others study[17].

Conclusion:

This study show that liposuction method have less scar, no complication and high satisfaction rate. If there is more adipose tissue and liposuction combined with glandular excision is more glandular tissue. There is no single surgical procedure which fits all the patients. We believe each cases of gynecomastia should be individually assessed and managed according to patient desire, grade of gynecomastia, skin redundancy and patient's comorbidity.

Reference:

1. Kim D H, Byun I H, Lee W J, Rah D K, Kim J Y, Lee D W, Surgical management of Gynaecomastia: Subcutaneous mastectomy and liposuction, AesthPlastSurg (2016) 40:877-884.
2. Boeni R. Treatment of Gynecomastia: Suction Curettage with Riblike-Projections- annula, The American Journal of Cosmetic Surgery.2011.28(2): 67-70
3. Leung AKC, Leung AAC. Gynecomastia in Infants, Children and Adolescents.Current opinion in pediatrics. 2008;20(4):375-82.
4. Wiesman IM, Lehman JA, Parker MG, Tantri MD, Wagner DS, Pedersen JC.Gynecomastia: an outcome analysis. Annals of plastic surgery. 2004;53(2):97-101.
5. Kinsella C Jr., Landfair A, Rottgers SA et al(2012) The psychological burden of idiopathic adolescent gynecomastia. PlastReconstrSurg 129(1):1-7
6. Nuzzi LC, Cerrato FE, Ericson CR et al (2013) Psychological impact of adolescent gynecomastia: a prospective case control study. PlastReconstrSurg 131(4):890-896
7. Simon BE, Hoffman S, Kahn S (1973) Classification and surgical correction of gynecomastia. PlastReconstrSurg 51(1):48-52
8. Rohrich RJ, Ha RY, Kenkel JM, Adams WP Jr. (2003) Classification and management of gynecomastia: defining the role of ultrasound assisted liposuction. Plast ReconstrSurg 111(2):909-923
9. Fruhstorfer BH, Malata CM. A systemetic to the surgical treatment of gynecomastia.British journal of plastic surgery. 2003;56(3):237-46.
10. Abdelrahman I, Steinvall I, Mossaad B, Sjoberg F, Elmasry M, Evaluation of Glandular Liposculpture as a Single Treatment for Grade I and II Gynecomastia. Aesthetic plastic surgery. 2018;42(5): 1222-30.
11. Johnson RE, Murad MH. Gynecomastia : pathophysiology, evaluation and management. Mayo Clinic proceedings. 2009:84(11):1010-5
12. Cuhaci N, Polat SB, Evranos B, Ersoy R, Cakir B. Gynecomastia: Clinical evaluation and management. Indian journal of endocrinology and metabolism. 2014;18(2):150-8.
13. Ridha H, Colville RJ, Vesely MJ. How happy are patients with their gynecomastia reduction surgery? Journal of plastic, reconstructive and aesthetic surgery : JPRAS. 2009; 62(11): 1473-8.
14. Boljanovic S, Axelsson CK, Elberg JJ. Surgical treatment of gynecomastia: Liposuction combined with subcutaneous mastectomy. Scandinavian Journal of Surgery. 2003;92: 160-162.
15. Mladick RA, Gynecomastia. Liposuction and excision.ClinPlast Surg. 1991;18:815-822..
16. Voigt M, Walgenbech KJ, Andree C, Bannasch H, Looden Z, Stark GB. Minimally invasive surgical therapy of gynecomastia: liposuction and exeresis technique. Chirurg 2001;72:1190-1195
17. Zavlin D, Jubbal KT, Friedman JD, Echo A. Complications and Outcomes after Gynecomastia Surgery; Analysis of 204 Pediatric and 1583 Adult Cases from a national multicenter Database. Aesthetic plastic surgery. 2017;41(4): 761-7