



ORIGINAL RESEARCH PAPER

Plastic Surgery

ADVANTAGES OF BIPEDICLE OVER UNIPEDICLE PERIAREOLAR INCISION IN LIPOSUCTION ASSISTED WEBSTER'S PROCEDURE FOR GRADE II GYNAECOMASTIA

KEY WORDS: Bipedicle periareolar incision, Gynaecomastia, Webster's procedure

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ABSTRACT

Background:- Gynaecomastia is a benign enlargement of the male breast tissue, due to proliferation of glandular tissue or fat deposition or both. Bilateral occurrence is most common. Etiology is mainly due to imbalance of estrogen and androgen hormones in the body. Gynaecomastia in young adolescence is a social stigma, leading to lack of self confidence. Removal of breast tissue plays a vital role in treatment modalities. Complete excision of breast tissue in grade II gynaecomastia through unipedicle periareolar incision poses difficulty due to limited access. Hence it was decided to study the advantages of bipedicle periareolar incision over unipedicle periareolar incision.

Aim and objective:- To analyse the advantages and post operative outcomes of bipedicle over unipedicle periareolar incision in the removal of breast tissue following liposuction assisted Webster's procedure [LAW] in grade II gynaecomastia.

Methods:- This is a two year prospective study (Jan2016 - Dec2017) done in our Department of Plastic, Reconstructive and Faciomaxillary surgery, Madras medical college (MMC) and Rajiv Gandhi Government General hospital (RGGGH), Chennai. Sample size was of 20 cases of Grade II bilateral gynaecomastia. Liposuction was done by super wet tumescent (near- tumescent) technique.

Group A :- 10 cases of unipedicle periareolar incision of liposuction assisted Webster's procedure

Group B :- 10 cases of bipedicle periareolar incision of liposuction assisted Webster's procedure

Results:- Our two year study included 20 cases of grade II gynaecomastia. Liposuction assisted Webster's procedure were done in all cases. Effective analysis of average time of excision per breast tissue was done in both groups. In Group A (unipedicle incision) it was 11 minutes whereas in Group B (bipedicle incision) it was only 5 minutes duration. Average hospital stay was 3 days in both groups. Group B showed easy accessibility for complete excision of glandular breast tissue and contour of the pectoral chest wall was smooth and regular after the procedure as compared to Group A.

Conclusion:- In grade II gynaecomastia, surgical removal of excess fat or glandular tissue plays an imperative role. It regained assertiveness in young adolescence thereby decreasing social trauma. Our study concludes that postoperative outcomes of Group B (bipedicle periareolar incision) are better acceptable than Group A (unipedicle periareolar incision) in terms of easy and quick access to the breast tissue as reflected in the decreased average time of excision per side, less number of complications like haematoma and pectoral chest wall contour irregularities due to wider exposure with bipedicle periareolar incision especially in grade II gynaecomastia.

Introduction:-

Gynaecomastia is a benign enlargement of male breast. Incidence is more common in young adult [1]. This condition is due to imbalance between estrogen and testosterone in the body [2]. Simon's grading of gynaecomastia is as follows.

Grades	Findings	Skin redundancy
Grade I	Small visible breast enlargement	No skin redundancy
Grade IIA	Moderate breast enlargement	Without skin redundancy
Grade IIB	Moderate breast enlargement	With skin redundancy
Grade III	Marked breast enlargement	With marked skin redundancy

Treatment modality is of two types: 1) Medical therapy 2) surgical excision [3].

Medical treatment along with reassurance is effective in mild active pubertal glandular gynaecomastia, whereas in case of embarrassing moderate level of gynaecomastia in young patients surgical excision is the best option [4, 5].

Surgical options available are liposuction, glandular tissue excision by Webster's procedure, redundant skin excision, rarely excess skin excision with free nipple graft.

Aim and objective:-

To analyse the advantages and post operative outcomes of

bipedicle over unipedicle periareolar incision in the complete excision of breast tissue following liposuction assisted Webster's procedure [LAW] in grade II gynaecomastia. This is analysed in terms of average time taken for excision of breast tissue, accessibility of the operative site, immediate postoperative complication of haematoma and contour irregularity in the pectoral region of the chest wall.

Materials and methods:-

This two year prospective study was conducted in the department of plastic, reconstructive and faciomaxillary surgery, MMC and RGGGH from January 2016 to December 2017. Sample size of 20 cases of Grade II bilateral gynaecomastia was included. Liposuction done by Super wet tumescent (near- tumescent) technique. The wetting solution consists of Ringer's lactate containing 1ml of 1:1000 solution of adrenaline (1mg) and 30 ml of 1% lignocaine (300mg) per litre. On an average 250-300ml of the solution was used per breast.

Group A :- 10 cases of unipedicle periareolar incision of liposuction assisted Webster's procedure

Group B :- 10 cases of bipedicle periareolar incision of liposuction assisted Webster's procedure

Procedure:-

Detailed history and clinical examination of the patients were done. Special laboratory tests were done in specific cases. Secondary causes (drug induced, chronic renal disease and tumours) were ruled out. Preoperative photographs were taken.

Day before surgery marking was done with patient in upright position (Fig 2).

Under general anaesthesia, after parts cleaned and draped, stab incisions made in the anterior axillary line at the level of the nipple. Using liposuction injecting cannula, 250 to 300ml of tumescent fluid infiltrated per breast and incision occluded for a wait period of 20 minutes. Through Mercedes suction cannula (2 holes, distal tip, 38cm length and 10mm diameter) palm down and pinch technique, liposuction was done thereby removing all fatty tissues. Care is taken to avoid vigorous liposuctioning in the pedicle area (refer Fig 1a, 1b). Stab incisions closed after inserting the suction drain through the stab.

Group A: (unipedicle periareolar incision) In 10 cases, a periareolar semicircular incision extending from 3'O clock to 9'O clock along the inferior margin of the areola was made (refer Figure 1a). Through this incision breast tissue was removed, leaving behind a cuff of breast tissue on under surface of the areola to avoid the saucer deformity. After haemostasis, incision closed with inner absorbable and skin with non- absorbable simple suture. Antibiotic ointment applied over incision site, sterile dressing was done. Compression bandage applied. Drain was removed after 48 hrs, if it is less than 25ml. Suture removal was done on 8th POD. Compression garment was advised for a period of 6 weeks postoperatively.

Group B: (bipedicle periareolar incision) In 10 cases, two periareolar incisions 3/8th of a circle extending 10'O clock to 2'O clock position along the superior margin of areola and another from 4'O to 8'O clock position along the inferior margin of the areola were used (refer Fig 1b). All other steps are the same except for the incisions.

Schematic representation of incisions:-

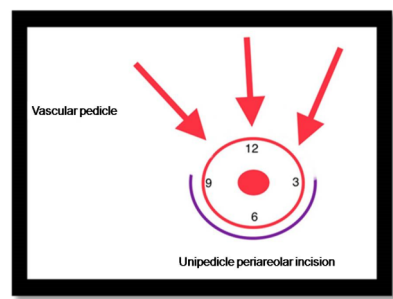


Figure 1a: Unipedicle incision

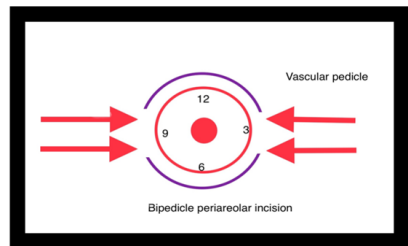


Figure 1b: Bipedicle incision



Figure 2: Pre operative markings



Figure 3: Bipedicle periareolar incision

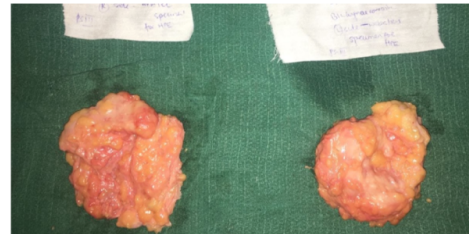


Figure 4: Extirpated specimen



Figure 5: Postoperative photographs

Results:-

This study was conducted on twenty cases in the department of plastic, reconstructive and faciomaxillary surgery, MMC and RGGGH for a period of two years (Jan 2016 - Dec 2017). Out of 20 cases we studied, age group was 15 to 25 years. In all the cases liposuction was done. 50% of cases underwent unipedicle periareolar Incision and rest 50% cases bipedicle periareolar incision for glandular excision. In all these cases average time for excision per breast tissue and immediate post-operative complication especially haematoma and contour irregularities of pectoral chest wall due to inadequate gland removal was noted and compared between two groups. It was noted that mean time for removal of glandular tissue in unipedicle periareolar incision Group A was 11 minutes whereas in bipedicle periareolar incision Group B was only 5 minutes (Fig 6). Five patients in Group A developed moderate haematoma, requiring evacuation. Only one patient in Group B developed minimal flap congestion due to vigorous dermal liposuction in the pedicle area. The same settled without any intervention. In Group B, access for excision of breast tissue was easier, whereas in Group A it was difficult in the upper outer quadrant. The contour of the pectoral chest wall after the procedure was uniform without discernable irregularities in Group B, whereas four of the cases in Group A, showed visible contour irregularities in the post operative period especially in the upper and outer quadrant (refer to Table 1 for detailed account of cases).

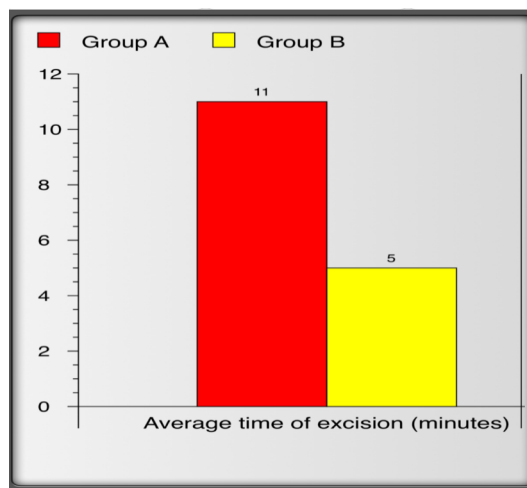
TABLE 1: DETAILS OF THE CASES

S. No	Age(years)	Diagnosis	Procedure	Average Time of excision per breast (minutes)	Post op complications
1	22	B/L Gynaecomastia	Unipedicle LAW	11	Hematoma
2	24	"	"	10	-
3	19	"	"	12	CI
4	21	"	"	11	Hematoma
5	24	"	"	12	Hematoma, CI

6	20	..	..	11	-
7	25	..	..	10	CI
8	22	..	..	11	Hematoma
9	25	..	..	10	CI
10	23	..	..	12	Hematoma
11	24	..	Bipedicle LAW	5	-
12	18	..	..	6	-
13	22	..	..	4	-
14	25	..	..	5	-
15	23	..	..	6	-
16	16	..	..	4	-
17	15	..	..	4	Minimal NAC flap congestion
18	24	..	..	5	-
19	23	..	..	6	-
20	22	..	..	5	-

NAC- Nipple Areolar Complex, CI- Contour Irregularities

Figure 6: Bar diagram predicting average time of excision



Discussion:-

Gynaecomastia is the benign enlargement of male breast tissue. It is a common condition and can be associated with psychological morbidity [6]. The first surgical treatment of gynaecomastia dates back to Paulus Aegineta (625-690 AD). In 1946, modern treatment started with the time-honoured Webster's technique of a periareolar approach to open excision [7]. In 1983, Teimourian and Perlman introduced the concept of combined use of liposuction with open excision technique.

Gynaecomastia is the benign self limiting condition in most of the patients with weight loss. Reassurance plays a satisfactory role. Medical management is essential in case of estrogen- androgen imbalance, active and proliferation phase of gynaecomastia. Drugs routinely used are tamoxifen, testosterone, danazol and aromatase inhibitors [8]. Liposuction is an established modality in gynaecomastia management. It serves a number of purposes such as pretunneling to facilitate resection, reducing bleeding and partially breaking down of the breast tissue.

Open surgical excision through Webster's incision is the ideal treatment in case of glandular breast tissue to achieve complete removal. Other modalities in case of marked breast size and excess skin in gynaecomastia are skin reduction techniques such as lateral wedge, elliptical and inverted -T (wise pattern) excisions, Lejour vertical mammoplasty pattern of excision, concentric mastopexy pattern. Postoperative compression garment is advisable for a period of 4-6 weeks.

Complications following gynaecomastia surgery are bleeding, hematoma, seroma, infection, skin/ nipple necrosis, contour

deformity (nipple inversion or depression), altered sensation of the nipples, skin redundancy, residual asymmetry, adverse scars, over correction or under correction, recurrence and occasionally revision surgery [9,10].

In our study, we followed time-honoured Webster's procedure with unipedicle and bipedicle periareolar incision along with liposuction thereby compared the average time duration for excision of breast tissue as a main goal, and also observed the post operative outcomes in all patients.

Conclusion:-

Gynaecomastia surgery by liposuction and open surgical excision provides a very good aesthetic result in patients. In grade II gynaecomastia, surgical excision of excess fat or glandular tissue plays an imperative role. It regained assertiveness in young adolescence thereby decreasing social trauma. Our study concludes that post operative outcomes of Group B (bipedicle periareolar incision) is better acceptable than Group A (unipedicle periareolar incision) in terms of quick and wide access to breast tissue, decreased average time of excision, better contour of pectoral chest and less complication of haematoma in grade II gynaecomastia.

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