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Editorial

The Advent of Aesthetic Plastic Surgery in Bangladesh

Even though reconstructive surgeries like burn contracture and cleft lip and palate repairs were being done regularly in our country for a long time, aesthetic surgery was not practiced even in the early nineties. Liposuction was first introduced in a very isolated manner in the mid nineties. The first breast implant surgery was done in 2001 (almost 40 years after silicone implants were first used by Cronin and Gerow in the west). Since then various other aesthetic surgeries like Augmentation Rhinoplasty, Reduction Mammoplasty and later Dermal Fat Grafting was gradually introduced in Bangladesh. But these type of surgeries were done very infrequently, and not by many. Lipoinjection and Hair Transplant surgery was started in 2006 and 2008 respectively. Non surgical aesthetic procedures like Nd YAG Laser for hair removal and CO2 Laser for the treatment of warts, and the use of microdermarasion was introduced by a dermatologist and a plastic surgeon almost simultaneously in two separate centers in 2006.

The Bangladesh Society of Aesthetic Plastic

Dr. M A Mabin

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Dhaka.

Surgeons (BSAPS) is formed by members who are all qualified plastic surgeons, interested in the practice of aesthetic plastic surgery. We know that aesthetic plastic surgery can offer a wide range of benefits to our patients; so familiarizing aesthetic plastic surgery in the country is an important issue. BSAPS is committed to the practice of safe aesthetic plastic surgery - which can only be ensured by training qualified plastic surgeons in this field, and also providing a safe environment where the surgeries



Signing of Global Alliance Agreement with ISAPS in October 2019 in Belgium

should be performed.

Before the Maimi Congress in 2018, there were only four plastic surgeons from Bangladesh who were ISAPS members. But early this year, a large group of plastic surgeons from Bangladesh attended the ISAPS course in Kolkata.



Bangladeshi Plastic Surgeons attending an ISAPS course in India

During the course they met Dr. Vakis Kontoes, who encouraged them to become ISAPS members. Immediately after returning home, they submitted applications for fast track group membership, which were rapidly processed. Now the number of ISAPS members in our country has started to rise. This group of ISAPS members have already started interacting by conducting meetings and aesthetic surgery workshops in the country. Topics like Fascia Scarpa Sparing Lipoabdominoplasty, Reduction Mammoplasty, Rhinoplasty has been covered. Non surgical procedures like Botox, Laser and Micro - needling have also been included in the workshops.

BSAPS fully endorses the view of ISAPS Immediate past precedent, Dr. Renato Saltz,

the present president, Dr. Dirk Richter, and the board of directors, that residents in plastic surgery should be allowed more exposure to aesthetic plastic surgery during their residency period. We believe that this will help young plastic surgeons to not only navigate better in the field of aesthetic surgery, but also learn the tricks of the trade more efficiently. For this reason, we welcome the decision of ISAPS that plastic surgery resident can become Resident Members for free. A decision was taken to publish a BSAPS journal twice in a year, where the members will write articles in order to share their experiences in aesthetic surgery.

During the ISAPS symposium in Bruges, Belgium in October 2019, BSAPS signed an agreement and became an ISAPS Global Alliance Member. Thanks to the president, Dr. Dirk Richer, who was very positive about BSAPS joining this group. This alliance will help plastic surgeons from Bangladesh join ISAPS more easily. At the same time, they would feel encouraged to uphold the global standard in the practice of safe aesthetic surgery in our country.



Hands-on workshop on Aesthetic Rhinoplasty in Cosmetic Surgery Centre Ltd.



Meeting of ISAPS members in Dhaka just before the Belgium congress

To promote aesthetic surgery ISAPS decided to conduct an educational Course in Dhaka. The chairman of the Education Council, Dr. Vakis Kontoes along with the board of directors

approved and finalized the date on 12th – 14th March 2020. Faculties around the globe finalized their travel plans to come to Dhaka, and teach our plastic surgeons and residents “tricks of the trade” in aesthetic surgery. But unfortunately the course had to postponed due to the corona virus pandemic. Now the plan is to conduct this course online, This virtual

ISAPS Course will be conducted by the same faculties that were supposed to come in March. It will have the same teaching materials and video sessions as in an actual course.

We are looking forward to this upcoming event in Bangladesh, and this will surely encourage more plastic surgeons from our country to include aesthetic surgery in their practice.

In the mean time BSAPS have started webinars on Covid situation and also on academic topics with the help of faculty speakers from ISAPS. Recently BSAPS has come into Regional Alliance with Indian Association of Aesthetic Plastic Surgeon (IAAPS) – by virtue of which our plastic surgeons can participate in their regular academic activities/webinars. We believe that by having regular interactions with ISAPS, IAAPS and other aesthetic surgical bodies we will be able to enrich our plastic surgeons in the field of aesthetic surgery.

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, scarring 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, 28 breast 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 males¹.

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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 patient².

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 reassurance³. Gynecomastia 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 fibrotic⁴.

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 gynecomastia⁷ 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 methods⁵. The presence of unsightly scar detracts from the success of operation despite in efficient reduction of breast volume and skin envelop. Minimum scarring can be achieved by liposuction alone. But liposuction is known to have a limited effect on the dense glandular and fibro connective tissue⁸ 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 classification⁷. 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

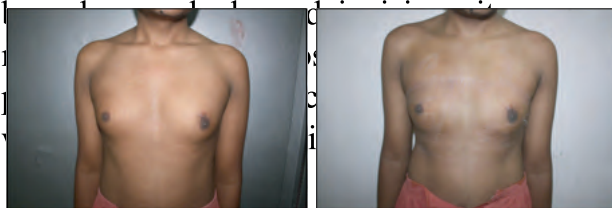


Figure 3: Pre and Post op picture grade I gynecomastia (Patient 2)

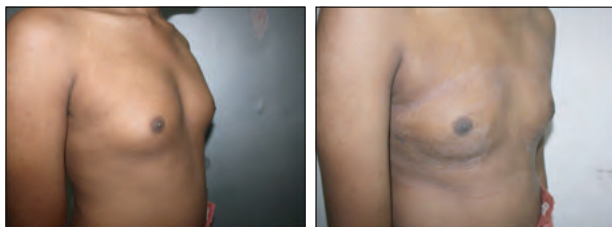


Figure 4: Pre and Post op lateral view of patient 2

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 administering 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.

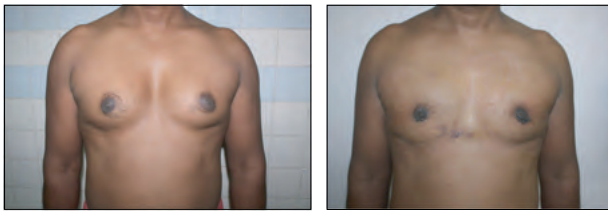


Figure 5: Pre and Post op view of Grade II gynecomastia (Patient 3)

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%) complained 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 deposition⁹.

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 intention with minimum scarring. So no intervention required for management of complication of our patients¹⁰.

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 scar¹¹.

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 study¹³.

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 liposuction¹. 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 periphery¹⁴. This contributes to achievement of a better cosmetic result using a minimally invasive technique. Liposuction before glandular excision facilitates the resection of glandular tissue¹⁶. Our study demonstrate overall complication rate of 7.7% which is same as others study¹⁷.

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.

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Original Article**Drainless Lipoabdominoplasty:
My Experience in Bangladesh****Siddiky SA****Abstract:**

Introduction: *The use of drains during lipoabdominoplasty operation has been a routine procedure all along. This is done to prevent seroma formation. But there are problems associated with drains, such as, pain, difficulty in patient mobilization, blockage, and infection¹. Strategies to prevent seroma has been tried². But with improvement in dissection technique along with other strategies to prevent seroma, surgeons have now started to avoid using drains. The aim of this study is to see the incidence of complications especially when drain is not employed.*

Materials and Methods: *The study was carried out in Cosmetic Surgery Centre Ltd and Bangladesh Specialized Hospital Ltd, Dhaka. Period of study 2y 06 month from June 2017 to December 2019. Number of Lipoabdominoplasties done was 47. Females were 44 and males were 03. All the patients were operated under spinal anesthesia except 3, in whom general anesthesia was applied for additional procedures Fascia Scarpa sparing lipoabdominoplasties were performed in all cases. No drains were used in 46 patients. But in one case, drain had to be employed due to excessive preoperative oozing. Postoperatively patients were evaluated for seroma formation, wound dehiscence, flap necrosis and infection.*

Results: *Only 4 patients amongst drainless abdominoplasty had seroma formation and one patient in whom drain was used had a minor wound dehiscence. None of the patients had flap necrosis or infection. Early mobilization was easier in patients without drain.*

Conclusions: *We found that sparing the infraumbilical fascia Scarpa during dissection along with wound closure without tension and avoidance of gliding surfaces with the use of quilting sutures can help avoid the use of drain in lipoabdominoplasty operation. Avoiding drains permits better patients comfort and early ambulation.*

Key word: *Lipoabdominoplasty, Drainless, deroma.*

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Introduction: The use of drains during lipoabdominoplasty operation has been a routine procedure all along. This is done to prevent seroma formation. But there are problems associated with drains, such as, pain, difficulty in patient mobilization, blockage, and infection. Strategies to

prevent seroma, such as the use of quilting sutures^{3, 4} or tissue glues⁵ have all been employed.

But with improvement in dissection technique along with other strategies to prevent seroma, surgeons have now started to avoid using drains.

The anatomical basis (Fig 1) of modification of this surgical technique lies in anatomical knowledge of lymphatic drainage of the abdominal wall⁶. After attending the ISAPS congress in Miami in 2018 the author has become more convinced about drainless lipoabdominoplasty. In my centres drain is now used only in cases where it is absolutely indicated. The aim of this study is to see the incidence of complications especially when drain is not employed.

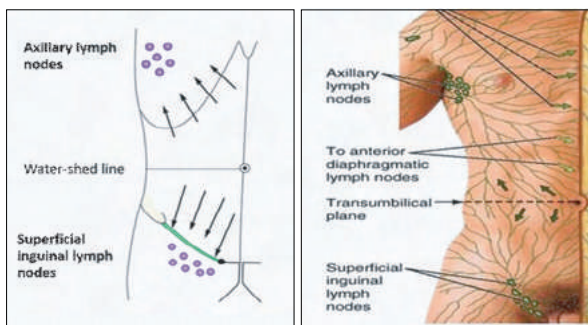


Figure :1 Anatomical basis depend on the lymphatic drainage. Infrumbilical fascia Scarpa carries the lymphatic channels to the inguinal lymph nodes

Materials and Methods: The study was carried out in Cosmetic Surgery Centre Ltd and Bangladesh Specialized Hospital Ltd, Dhaka. Period of study 2y 06 month from June 2017 to December 2019. Number of Lipoabdominoplasties done was 47. Females were 44 and males were 03. All the patients were operated under spinal anesthesia except 3, in whom general anesthesia was applied for additional procedures Fascia

Scarpa sparing lipoabdominoplasties were performed in all cases. No drains were used in 46 patients. But in one case, drain had to be employed due to excessive preoperative oozing. Postoperatively patients were evaluated for seroma formation, wound dehiscence, flap necrosis and infection.

Table 1

| | |
|--------------|----|
| Total number | 47 |
| Females | 44 |
| Males | 03 |

Postoperative Care:

All abdominoplasty surgeries alone or in combination with other procedures were advised breathing exercise and continued with sequential compression devise for lower limbs.

Typically, the patient ambulates with assistance within 24 hour after completion of surgery.

Routine follow-up is scheduled at 2 days, 6 days, 10 days, 2 weeks, 1 month, 2 months, and 1 year after surgery (Fig 5, 6, 7, 8, 9, 10, 11, 12) . The abdominal binder / compression garment is placed and worn at all times except during showers for 6 weeks postoperatively.

Results:

Only four patients amongst drainless abdominoplasty had seroma formation and one patient in whom drain was used had a minor wound dehiscence. None of the patients had flap necrosis or infection. Early mobilization was easier in patients without drain.



Figure 5: Before and after Lipoabdominoplasty



Figure 6: Before and after Lipoabdominoplasty



Figure 7: Before and after Lipoabdominoplasty; significant reduction of stretch marks is noted



Figure 8: Before and after Lipoabdominoplasty



Figure 9: Before and after Lipoabdominoplasty and Ventral Hernia Repair



Figure 10: Post massive weight loss laxity of breast and abdomen, in a young lady; before and two weeks after Lipoabdominoplasty and Mastopexy.



Figure 11: Before and after Revision Lipoabdominoplasty with Umbilical Hernia repair



Figure 12: Same patient as in figure 11, front view

Procedure:

In the preoperative room, our warming protocol is started and continued throughout surgery and while in the recovery room. All patients receive lower extremity sequential compression devices⁷.

| Operative Sequence for Drainless Abdominoplasty | |
|---|---|
| Step | Details |
| 1 | Marking (Fig 2) |
| 2 | Infiltration |
| 3 | Liposuction |
| 4 | Umbilical dissection (Fig 3) |
| 5 | Infraumbilical dissection with sub-Scarpal fat preservation |
| 6 | Supraumbilical dissection (Fig 4) |
| 7 | Excision of sub-Scarpal fat where diastasis recti repair will be performed (if indicated) |
| 8 | Vertical midline plication using No 1 prolene |
| 9 | Marking and excision of excess skin and f |
| 10 | Marking and incision of new position for the umbilicus |
| 11 | Closure of lower abdominal incision and inset of umbilicus |
| 12 | Application of dressings and abdominal bind |



Figure 2: Preoperative Marking



Figure 3: Excess skin flap pulled down after detaching umbilicus



Figure 4: Extent of supra umbilical dissection

Complications:

Complications were minimal and insignificant. Out of 47 lipoabdominoplasty cases 4 developed seroma. They were treated by needle aspiration; and none required reoperation. One patient in whom drain was used developed minor wound dehiscence; and it was repaired under local anesthesia. None of the patients had hematoma or infection. There was also no evidence of flap necrosis in any of the patients. (Table 3).

Table 3

| Complications (n = 47) | Total |
|------------------------|-------|
| Hematoma | 0 |
| Seroma | 4 |
| Infection | 0 |
| Wound Dehiscence | 1 |
| Flap Necrosis | 0 |

Discussion:

The etiology of seroma formation following abdominoplasty is multifactorial⁸. Multiple strategies are employed to reduce this complication. Highlighted strategies include preservation of sub-Scarpal fat⁹, limited undermining of the abdominal flap and quilting sutures.

Preservation of sub-Scarpal fat may help obliteration of dead space and help adherence of the abdominal flap to the musculoaponeurotic abdominal wall. This strategy aims to reduce seroma formation through obliteration of dead space and prevention of shearing between the abdominoplasty flap and musculoaponeurotic abdominal wall.

It is important to combine liposuction of upper abdomen and waist area of the abdominoplasty procedure, to ensure adequate postoperative flattening of the abdominal contour¹⁰.

Patients of BMI over 35 can also undergo drainless lipoabdominoplasty¹¹. Post bariatric lipoabdominoplasty patients can also undergo drainless, without any additional

risk of seroma formation. In 2018 Medha Anand Bhavé Published a series of 204 cases done in 10 years, with only 1 case of seroma¹ in the Indian journal of plastic surgery.

Even though most of the plastic surgeons around the globe are still using drains in every case, we have stopped using drains in lipoabdominoplasty operations. In our practice, we use drains only if it is absolutely indicated. Since we know the factors that contribute in seroma formation, it is important to focus on modifications of dissection technique, preservation of fascia Scarpa and other technical details in the steps of operation. It has been shown in multiple publications that paying attention to these modifications can significantly reduce the incidence of seroma.

Even if seroma forms, it can very easily be treated by aspiration in the office setup. The procedure is painless, and patients hardly ever complain of the needle prick. It may have to be repeated 3 to 7 days later, but it is never a big deal for the surgeon or the patient.

We know that seromas form typically around 2 weeks after the surgery¹². So it is futile to think that seromas can be prevented by the use of drains.

Conclusion:

We found that sparing the infraumbilical fascia Scarpa during dissection along with wound closure without tension and avoidance of gliding surfaces with the use of quilting sutures can help avoid the use of drain in lipoabdominoplasty operations.

Continuous use of pressure garment in the post operative period is also an important factor in avoidance of seroma formation. Avoiding drains permit early ambulation. And patient comfort is significantly better - especially when they are released home on the next day of surgery.

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Original Article**Experience of Reduction Mammoplasty in
Tertiary Level Hospital****Hasan M¹, Wahiduzzaman S², Shashi A³**

Abstract : Breast reduction is a highly efficacious procedure for macromastia with a great amount of patient satisfaction and low rate of complications. In this study reduction mammoplasty was carried out by inferior and superior or superomedial pedicle. In all patients inverted T or wise pattern technique was used. Study Population comprises of 09 patients in whom inferior pedicle was carried out in 05 patients and superior or superomedial pedicle was used in 04 patients. Both Pedicles have their own advantages and disadvantage, al though superior of superomedial pedicle is more popular now a days. In this study the complications were minor which were easily dealt with.

Key words : Reduction mammoplasty, inferior pedicle, superior of superomedial pedile, macromastia.

Introduction : The size, shape, and symmetry of a woman's breasts can have a profound effect on her wellbeing, both mental and physical. Many women with excessively small or large breasts have an altered self-image and suffer from poor self-esteem and other psychologic effects. Chronic headaches as well as breast, neck,

back, and shoulder pain are common presenting complaints of women with excessively large breasts. These symptoms are either eliminated or markedly improved by reduction mammoplasty. Typically, women who have had reduction mammoplasty are among the happiest patients in the plastic surgeon's practice. Reduction mammoplasty is certainly one of the operations through which we can significantly contribute to a woman's quality of life¹.

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Worldwide this operation has a very high patient acceptance and satisfaction, and effectively ameliorates the discomfort and functional problems of large breasts²⁻⁵.

Patients and Methods :**Study Design:**

This study was carried out in the Department of Plastic and Reconstructive Surgery at a Tertiary level hospital. Study population included 09 women. Among the 09 patients 05 underwent inferior pedicle reduction mammoplasty and 04 underwent superior or supero medial reduction mammoplasty. In all cases Wise pattern scar was used. Chief complaints of the patients at admission were neck and shoulder pain and erythema and intertrigo at contact points between breast and thoracic and abdominal skin.

Preoperatively age of the patients, body mass index, numbers of pregnancies were noted. Ultrasonography and mammography were also routinely done to exclude any breast pathology. At the time of operation the amount of breast tissue removed were recorded. Post operative complications were also noted. In the younger patients they were also informed about the possible impact on breast feeding after the operation.

Surgical Procedure : Among the 09 patients 05 underwent inferior pedicle (IPRM) and 04 underwent superior or superomedial (SPRM) reduction mammoplasty. Skin scar was inverted T or Wise pattern in all patients. All the operations were done under the general anesthesia. Following the preoperative drawings on gigantomastic breasts, the NAC complex was set at 20 cm from the suprasternal notch.

Preoperative markings were made while the patient was standing in the upright position. The inframammary folds were marked on both sides. The tangent was drawn between the two IMFs and it was transposed anteriorly on the breast and the new position of the NAC was determined. The nipple was located 20 cm from the suprasternal notch on the breast meridian. An upright equilateral triangle with 8 cm of each side was drawn downward from this point. The medial extent of the inframammary fold and the center point of the axillary roll as it intersects the anterior axillary line were marked. These points were connected in a curvilinear manner to the lower corners of the previously designed triangle. The dermal component of the pedicle was designed with a width of 8 cm at the base in case of IPRM and centered on the central breast meridian and in case of SPRM 6 cm width of the pedicle was designed. The sum of the lengths of the medial and lateral components of the upper markings without the triangular divergence would approximate the length of inframammary fold marking. For the de-epithelialization of the inferior pedicle, No: 10 scalpel blades were used. The dermoglandular parenchymal pedicle was developed.

The preliminary closure was performed as the two lower triangle points were brought together at the midline inframammary fold. Haemostasis was achieved, and the Romovac drains were placed. Incisions were closed with intradermal sutures.



Fig 1 : Pre operative markings for reduction mammoplasty



Fig 2 : Before & after reduction mammoplasty



Fig 3 : Before & after reduction mammoplasty in oblique view.

Results :

The age range was 22-54 yrs with a mean value of 42.11 yrs. Among them 01 patient was unmarried having no children but rest all patients were married and having 02 children in 07 patients and 01 patient having 01 child.

Two patients had a body mass index (BMI) between 18.5-24.9. Three patients had a BMI of between 25.0-29.9 and 04 patients had BMI between 30.0-34.9. Any patients having the BMI of >35.0 were asked to reduce their weight and go for surgery. Ultrasonography and mammography was

done routinely in all patients. Only in 01 patient a small cyst was detected in the lower pole which was within the excised part of the breast at the time reduction mammoplasty. In other patients no significant abnormalities were detected.

The amount of tissue resected ranged between 400 gm to 1200 gm with an average of 650 gm.

The complications were wound dehiscence in 02 patients and minor haematoma in 01 patient. None of the patients had necrosis of NAC.

Discussion :

It is now widely accepted that the needs of all reduction mammoplasty technique can not be met by any single technique^{6,7}. The objective of the present study is to show the comparative study between the outcomes of inferior pedicle reduction mammoplasty and superior or supero medial reduction mammoplasty. Our experience is that inferior pedicle reduction mammoplasty should be done in patients with large ptotic breasts where distance between clavicle to NAC is much greater than the distance between NAC to IMF. Inferior dermoglandular pedicle is safe and predictable, with very satisfactory results with the patient and the surgeon. It is widely known to be the safest pedicle with excellent blood supply⁸. The breast parenchyma that is preserved in the central and lower breast inevitably descends (from the effect of gravity) after a few months, causing a lengthening of the nipple to inframammary fold distance and leading to what is described as a "bottoming out" of

the reduced breast⁹. The requirements for preservation of the blood supply of the nipple-areolar complex dictate that in some large inferior pedicle reductions there is a limit to the amount of breast tissue that can safely be resected.

But in case of superior or superomedial pedicle large amount of breast tissue can be excised. In this method, the nipple-areola blood supply is from the internal mammary artery perforators as well as the underlying breast parenchyma, now only supplied by the intercostal perforators and the thoracoacromial axis. The reduction is accomplished

by removing the lower and central parts of the breast and this eliminates the lower breast parenchyma, which is subject to ptosis in the inferior pedicle reduction. Additional breast parenchyma may be removed from the lateral aspect of the breast in order to narrow the breast^{10,11}.

Although none of the patients in our series had necrosis of NAC as the blood supply is good in both superior or inferior pedicle if done properly.

Superior or superomedial pedicle reduction mammoplasty has the advantage of improved long term projection of the breast in comparison to the inferior pedicle. Chances of bottoming out of the breast is more in case of inferior pedicle. One of the benefits of the inverted T procedure is reducing the amount of skin between the bottom of the areola and the inframammary fold. Patients that may benefit from this operation are those with wide, boxy breasts.

Conclusion : Selection of pedicle for reduction mammoplasty should be done carefully taking into consideration of many factors including size and shape of the breast, BMI, patient desire. But this operation is always rewarding for the patient and the surgeon as well.

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Original Article**Diced Cartilage Fascia Technique with a Single Incision
for Dorsal Augmentation in Rhinoplasty****Choudhury I¹, Siddiky SA²****Abstract:**

This paper aimed at a newer technique for dorsal augmentation during rhinoplasty using diced cartilage wrapped in fascia. The usage of diced cartilage has been variously described in the literature with consistently satisfactory results. We present our early experience with patients undergoing dorsal augmentation during rhinoplasty using an updated method of diced cartilage wrapped in fascia with a single incision at donor site. The term is broadly descriptive and there remains a wide-range of ways to execute. Updating and enhancing the technique with greater attention to create precision, and creating an aesthetically optimal and predictable result, may improve outcomes for future patients.

Keywords: Rhinoplasty, revision rhinoplasty, dorsal augmentation, costal cartilage, diced cartilage, DCF, diced cartilage fascia.

Introduction:

The history of dorsal augmentation during rhinoplasty emulates in many ways the progression of increasingly higher standards of care in medicine, driven by technological advances and rapidly evolving therapies. Early attempts were decidedly crude, with a wide assortment of everyday materials including ivory¹ and jade used to increase the height of the nose.

years, surgeons have attempted to improve outcomes by utilizing a variety of autologous and alloplastic materials, including: cartilage, bone²⁻⁴, fascia, diced cartilage silicone, polytetrafluorethylene, and various type of incisions have also been used. All with mixed results.⁵

When many contemporary surgeons favor autologous grafts in an onlay configuration for mild to moderate amounts of dorsal augmentations^{2,6,10} on demand a larger volume of graft materials have prompted surgeons to explore alloplastic (silicone, Goretext, etc.) and homoplastic (irradiated costal cartilage) options. The use of Artificial implants can obviate the need for donor site incision and its morbidity²⁻⁵.

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However, a primary downside of artificial implants can be a relatively high risk of complications compared to autologous graft techniques, driving some surgeons to pursue this avenue.

The use of diced cartilage in dorsal augmentation has been periodically documented in the English literature as early as 1943 by Peer, in 1951 by Cottle, and in 1968 by Burian, though it did not gain wide-spread acceptance at the time⁶⁻⁷. Guerrerrosantos revisited this concept in the 1990s⁸, refining the technique by wrapping fragmented cartilage in fascia, while Erol brought a larger audience with his description of wrapping diced cartilage in Surgicel in 2000⁹. Daniel subsequently brought a renewed interested in wrapping diced cartilage in fascia^{6,7}. Modifications of the concept of using diced cartilage as the building block for dorsal augmentation have been variously described, primarily adding assorted tissue adhesives to ease shaping of the graft, altering the material wrapping the cartilage or foregoing an encasement altogether^{9,10,11}. The manifold existing descriptions in the literature notwithstanding, a systematic approach refining the surgical technique to achieve greater precision and consistency using diced cartilage with fascia has not been previously delineated.

Diced cartilage with facial harvest in a same incision represents a potentially ideal graft for dorsal augmentation, as it makes use of the lower complication rates associated with autologous grafts, while also providing a graft that has the ability to recreate dorsal

aesthetic lines in a natural and predictable manner. The usage of diced cartilage has been variously described in the literature, with consistently satisfactory result. Herein, we present our early experience, with patients undergoing dorsal augmentation during rhinoplasty using an updated method of diced cartilage wrapped in fascia using a single incision at donor site.



Fig 1: Conchal cartilage being sliced into microdices.



Fig 2: Microdiced cartilage being wrapped in retroauricular fascia.



Fig 3: Before and after Microdiced Cartilage Fascia Augmentation Rhinoplasty - front view.

Materials & method:

Total of 3 patient were operated for nasal dorsal augmentation, during a period of 4 months from October 2019 to January 2020. All 3 patients were female; age range was 22 to 31 years.

Procedure:

After proper assessment and under general anesthesia, conchal cartilage was harvested from the auricle using vertical incision

posteriorly. After harvesting, the end of the incision was extended upward and backward into the scalp in a zigzag manner. Retroauricular fascia was then harvested. The length and width of the harvested fascia depended on the dimension of the cartilage graft. Hemostasis was ensured with diathermy. Closure was attained by 4/0 vicryl. By open rhinoplasty method dorsal tunnel was dissected along the midline. Lower alar cartilages (LAC) were trimmed and fibrofatty tissue debulking from the tip was done as required. The Conchal cartilage was sliced into microdices using a sharp blade. (figure 1) The retroauricular fascia was spread out onto a wooden board and pinned at four corners. The microdiced cartilage was aligned vertically and the fascia wrapped around it. (figure 2) The facial margins were then sutured by 4/0 vicryl. This diced cartilage fascia graft was then gently inserted in the dorsal tunnel. Necessary moulding was done to attain the desired shape. The LACs were apposed in the midline again using 4/0 vicryl. Wound closure was done with 6/0 prolene and 4/0 vicryl. Light nasal pack and malleable external splint was applied.

Result :

The results of all 3 patients were satisfactory and no complications were encountered. Since the follow-up period was small, further follow up is required for assessment of long term results. (figure 3)

Discussion:

Given the contemporary focus of minimizing complications and creating a

sustainable result, many rhinoplasty surgeons have moved towards exclusively using autologous grafts during dorsal augmentation. Diced cartilage fascia techniques have proven fascinating due to its relative pliability, wide availability of materials needed for the construct, and the perceived forgiving nature with regards to contour irregularities¹².

Diced cartilage fascia techniques for dorsal augmentation in rhinoplasty and revision rhinoplasty have been variously utilized and described for over half a century. Although producing satisfactory result in many cases, at the same time has received criticism for creating a "sausage-like" appearance or an otherwise unnatural look to the dorsum. The term is broadly descriptive and there remains a wide-range of ways to execute it^{13,14,15}.

Contour irregularities as well as multiple incisions made for harvesting tissue remain the most common reason for surgeon and patient dissatisfaction after dorsal augmentation using diced cartilage with fascia. Sub-optimal contours may manifest in the form of convexities and concavities, over or under augmentation, deviation, asymmetries, and unnatural dorsal aesthetic lines.^{16,17,30} Conservative management of minor contour irregularities with nasal scar (especially within the first month following surgery), and directed injections of kenalog and 5-fluorouracil for scar management will successfully address many of the irregularities observed in the early post-operative period^{18,19,20}. Persistent contour irregularities beyond post-operative edema due to coalesced diced cartilage will infrequently warrant revision surgery.

Conclusion:

This updated diced cartilage fascia technique with a single incision eliminates an additional donor site incisions and morbidity. It can enhance precision to create more predictable and consistently beautiful results^{23,24}. A further attention on precision approach for practicing the DCF graft may result in even improved outcomes for future patients^{25,26,27}.

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Original Article**Complications and Management of Rhinoplasty:
Our Experience in Bangladesh****Islam MS¹, Siddiky SA²****Abstract:**

Background: Rhinoplasty can be either reconstructive or aesthetic. The history of rhinoplasty dates back to 2500 years. It was first documented in the Indian subcontinent by Sushruta, a case of reconstructive rhinoplasty on 600 BC, whereas John Orlando Roe performed the first cosmetic rhinoplasty in 1887 in New York¹. In the West, rhinoplasty is a very commonly performed operation, but it has not gained popularity in Bangladesh yet. This study was carried out to assess the outcome in our cases of rhinoplasty, specially with regard to complication and their management.

Methods: The period of study was from January 2000 to November 2018. 457 cases of rhinoplasty were done. The desires and expectation of the patients were noted; and probable results were discussed before surgery. The procedure for augmentation rhinoplasty consisted of reconstruction of dorsum of the nose by conchal cartilage graft taken from external ear, ulnar bone graft, or silicone (nasal) implant. Other cosmetic rhinoplasty procedures included dorsal hump reduction, tip plasty for bifid or broad tip and Alar Base Reduction for wide nose with alar prominence. Combination procedures were done frequently. Reconstructive rhinoplasty was performed with median/paramedian forehead flap or composite auricular graft.

Results: Excellent results were found in 409 cases, satisfactory in 39 cases and unsatisfactory in 09 cases. Complications were minimal and insignificant.

Conclusion: We conclude that if expertise is developed rhinoplasty, whether cosmetic or reconstructive, can be performed more frequently and with more satisfactory results. Hands on training, workshops and initial supervision is very important.

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Introduction:

Rhinoplasty can be either reconstructive or aesthetic. The history of rhinoplasty dates back to 2500 years. It was first documented in the Indian subcontinent by Sushruta, a case of reconstructive rhinoplasty on 600 BC, whereas John Orlando Roe performed the first cosmetic rhinoplasty in 1887 in New York¹. In the West,

rhinoplasty is a very commonly performed operation, but it has not gained popularity yet in Bangladesh. The reason being lack of adequate number of plastic surgery centers in our country and more importantly the lack of expertise. There is also lack of knowledge about this wonderful operation on the part of the general public. The practicing doctors throughout the country also seem to know very little in this regard.

Objective:

In western centers rhinoplasty is a very commonly performed operation but it has not yet gained popularity in Bangladesh. This is due to lack of adequate numbers of rhinoplasty surgeons in our country. This study was carried out to assess the outcome in our cases of rhinoplasty, especially with regard to complication and their management.

Patients & methods :

The period of study is from January 2000 to November 2018. 457 cases of rhinoplasty were done, 431 (94.31%) being cosmetic and 26 (5.6%) reconstructive. Out of 457 cases 361 (79%) were females and 96 (21%) were males. Detailed history was taken and local examination done in all the cases. The desires and expectation of the patients were noted; and probable results were discussed before surgery. The procedure for augmentation rhinoplasty consisted of reconstruction of dorsum of the nose by conchal cartilage graft taken from external ear, ulnar bone graft, or silicone (nasal) implant. Other cosmetic rhinoplasty procedures included dorsal hump reduction,

tip plasty for bifid or broad tip and Alar Base Reduction for wide nose with alar prominence. Combination procedures were done frequently. Reconstructive rhinoplasty was performed with median/paramedian forehead flap or composite auricular graft.

Results:

457 cases of rhinoplasty were done, 431 (94.31%) being cosmetic and 26 (5.6%) reconstructive. Out of 457 cases 361 (79%) were females and 96 (21%) were males. Excellent results were found in 409 cases, satisfactory in 39 cases and unsatisfactory in 09 cases. Complications were minimal and insignificant.

Table I. Types and sex distribution

| Indication | Male | Female | Total |
|----------------|------|--------|-------|
| Cosmetic | 89 | 342 | 431 |
| Reconstructive | 07 | 19 | 26 |
| Total | 96 | 361 | 457 |

Table II. Indications for Rhinoplasty

| Indication | No. | % |
|----------------------------|-----|-------|
| Cosmetic Rhinoplasty | | |
| Depressed Nose | 152 | 39.82 |
| Dorsal Hump | 105 | 22.97 |
| Bifid Tip | 82 | 17.94 |
| Alar Deformities | 54 | 11.81 |
| Combination | 38 | 8.31 |
| Reconstructive Rhinoplasty | | |
| Human Bites | 10 | 2.18 |
| Accident | 8 | 1.7 |
| Basal Cell Carcinoma | 8 | 1.7 |

Table III. Types of procedure done

| Indication | No. | % |
|----------------------------|-----|--------|
| Cosmetic Rhinoplasty | | |
| Augmentation Rhinoplasty | 150 | 32.8 |
| Reduction Rhinoplasty | 109 | 23.9 |
| Tip-plasty | 82 | 18.0 |
| Alar-base | 55 | 11.9 |
| Combination | 34 | 7.4 |
| Reconstructive Rhinoplasty | 27 | 6.0 |
| Total | 457 | 100.00 |

Table IV. Results

| Outcome | Number | % |
|----------------|--------|-------|
| Excellent | 409 | 89.49 |
| Satisfactory | 39 | 9.41 |
| Unsatisfactory | 09 | 1.10 |

Table V. Complications

| Complication | No. |
|--------------------------------|-----|
| Bleeding/Hematoma | 0 |
| Infection | Nil |
| Nasal Obstruction | Nil |
| Cartilage/Implant Displacement | 6 |
| Implant extrusion | 1 |
| Implant prominence | 3 |
| Cartilage Resorption | |
| Total | 10 |



Fig 1 : Warping of rib cartilage; before and after revision rhinoplasty using silicone implant replacement.

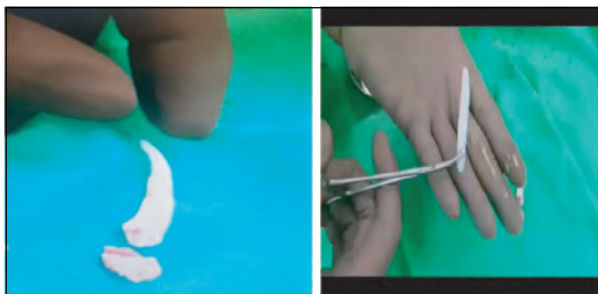


Fig 2 : Warped and fractured rib cartilages; removed (left) silicone implant used for replacement (right picture)

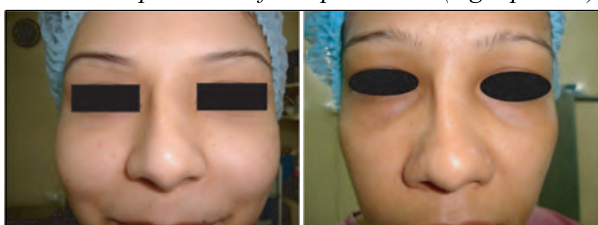


Fig 3: Implant deviation Fig 4: Implant deviation

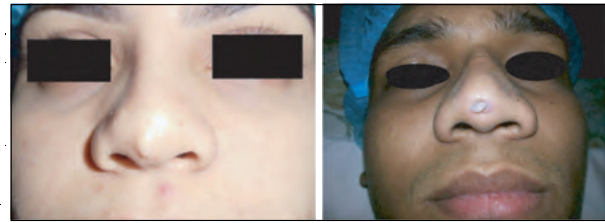


Fig 5 : Impending extrusion Fig 6 : Implant extrusion

Discussion :

The fact that rhinoplasty is not a commonly performed operation in our country does not mean there is lack of patients who need this surgery. We believe that there are lots of patients who need rhinoplasty due to various indications. With an experience of 457 cases (from January 2000 to November 2018) we have learned that these patients and their attendants believed that rhinoplasty is not possible in Bangladesh. In fact five of these patients were prepared to go abroad for their treatment. We therefore believe that the general people as well as practicing doctors should be made aware of these types of cosmetic surgeries being carried out in our country, it will enhance referral of patients and alleviate patient's suffering. We had the opportunity to discuss the outcome of rhinoplasty with surgeons who have tried this operation once or twice, but have not continued to practice this surgery due to unrewarding results. It is obvious that no one should not start practicing a new surgery on patients without appropriate training and supervision. We think that rhinoplasty is not an extremely difficult operation, as compared to many of the other surgeries being carried out throughout the country.

There has been a gradual shift from the use of silicon implant to autogenous cartilage and bone graft in augmentation rhinoplasty. Most recent and advanced procedure is use of microdiced conchal cartilage. Conchal cartilages are sliced into micro particles less than 0.5 mm and then wrapped with fascia lata, temporal fascia or periosteum. Patient selection and proper counseling is of utmost importance. Surgeons should be confident in dealing with complications; and have a low threshold for performing revision rhinoplasty whenever required. This can drastically reduce the number of unhappy patients after rhinoplasty.

The bottleneck is an inadequate training facility and minimal supervision for surgeons intending to venture into rhinoplasty procedure. We can develop a centre of excellence where plastic surgeons and ENT surgeons can work together to attain this goal. Interested surgeons can be brought together in groups during intensive training programmes that will include basic anatomy, cadaver dissection and live demonstration of surgical procedures.

Regarding cosmetic rhinoplasty we have started performing augmentation by using conchal cartilage graft. We also used silicone implants that are available as nasal implants or blocks. Bone graft was also used in one case. The other options are outer table of the skull, the olecranon, rib and bovine cartilage⁶.

There are advantages and disadvantages in the closed as well as open rhinoplasty. We have preferred open rhinoplasty in most of our cases. The reason being good exposure

and easy handling of the graft/implant. Of course a single marginal incision inside one of the nostrils is enough to carry out simple procedures like reduction of dorsal hump. When osteotomies are required (during reduction rhinoplasty) an additional marginal incision on the opposite side is required. (In fact there are plastic surgeons who can perform most of these procedures by closed method). Uniting the marginal incision in the midline inferiorly converts the closed to an open method, which provides the surgeon with excellent exposure.

The problem of cartilage resorption and recurrence of deformity can be frustrating for the patient and surgeon alike. We have avoided this complication by taking the cartilage graft along with its perichondrium. This helps the cartilage to remain in shape. This problem can also be overcome by using silicone implants that is not resorbed or cause any adverse effect in the body⁹. The use of implants also obviates the need to perform another surgery on the patient to harvest cartilage or bone.

Complication:

The main complications of implant in the nose are infection, extrusion, deviation, prominence and resorption. In general these complications happen in less than 1%. In our series of 457 cases there were 6 cases of implant displacement. 3 patients complained of prominence and only one patient had implant extrusion. We did not encounter excessive bleeding, infection or nasal obstruction in any patient. The patient with cartilage warping in figure 1 and implant extrusion in figure 6.

They were not operated primarily by us. We did their revision surgeries only. 02 cases dislocated autogenous rib cartilages, 04 cases dislocated implant. Autogenous rib cartilage were only used in primary rhinoplasty. With the adequate technique the risk for resorption and distortion even in long term observation are minimal. Significant data on Augmentation Rhinoplasty with diced cartilage are not available in our study. Since the procedure newly started in our country.

Complications encountered in our long experience were handled as below. Implant deviation were corrected by revision under local anesthesia on office procedure. Since all the patients were routinely counseled about the possibility of post operative implant deviation, they could easily be convinced to undergo simple revision procedure.

Impending implant extrusion also require total removal and replacement by cartilage graft/new implant. Implant removal of extruded implant dose not require any anesthesia.

We take care that patient with implant prominence and deviation should go for extrusion. In case of implant extrusion immediate removal of implant was done.

We believe that by corrective pre-operative evaluation, meticulous surgical dissection can help to avoid major complications of rhinoplasty surgery and by adequate pre and post operative counseling we can drastically reduce the number of unsatisfactory outcome.

Patients are adviced to report early incase of implant deviation or implant extrusion. Non-biological materials are generally stable they do not undergo resorption and are not endangered of resorption. Silicone implants that are now commonly used for nasal dorsal augmentation, has extrusion rates of 1-2%. Injectable fillers can correct small impressions after rhinoplasty and avoid revision rhinoplasty.

Autogenous cartilage is still the transplant material of choice for many surgeons. Because there is almost no chance of infection, extrusion or even displacement. Septal cartilage, conchal cartilage are suitable for dorsal augmentation.

Skin and soft tissue- complication:

Haematoma, infection, skin necrosis, atrophy, fibrosis, pain and numbness are rare complication. We did not face any of these complications in our series.

Conclusion :

We conclude that rhinoplasty is not a very difficult procedure. Hands on training workshops and initial supervision is very important. If proper expertise and good centers are developed, this surgery can be performed on a regular basis. Rhinoplasty is not a widely practiced operation in our country. With the availability of artificial nasal implants, the procedure of rhinoplasty has become even simpler. Good result in our experience show that rhinoplasty can become a routine procedure for other surgeons as well.

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Original Article**Procedure, Applications and Outcomes of Lipoinjection for Soft Tissue Augmentation****Islam MT¹, Siddiky SA²****Abstract:**

Introduction: Plastic surgeons all over the world are challenged with a dramatically increased public interest and demand for aesthetic contouring surgery. There is growing advocacy for autologous fat transfer techniques for contouring various defects among surgeons due to its safety, flexibility and long-lasting results.

Methods: This study was conducted between March 2017 to July 2019. Patients with contour deformities were enrolled consecutively. All participants were subjected to a full clinical history and general clinical examination with laboratory findings to confirm their fitness for surgery. Fat harvested and lipoinjection procedure performed. Patients were followed up for six months and beyond. Surgeon satisfaction and patient satisfaction assessment was performed by clinical examination and comparing the preoperative and six-month postoperative photographs.

Results: Total 22 patients were included in the study of which 19 patients were female and 3 patients male. Indications of lipoinjection were- Facial rejuvenation¹, Hand rejuvenation⁴, Breast augmentation and asymmetry³, Facial Scar¹, Gluteal augmentation³. Overall results of the procedure was excellent.

Conclusion: Soft tissue augmentation with autologous fat, which leaves no incisional scar and lacks the complications associated with foreign materials, can be an ideal procedure for plastic surgeons.

Key words: Lipoinjection, Operative technique, Applications.

Introduction:

Autologous fat grafting is a frequently employed procedure in cosmetic and recon

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structive surgery. Fat is a versatile filler for treating contour irregularities of different parts of body due to congenital disorders, acquired diseases, and traumatic and ageing deformities. Unlike many other fillers of synthetic origin, fat is easy to procure with minimal donor site morbidity. Additionally, it is frequently available as autologous and thus without immunogenicity issues. Moreover, its soft and dynamic

nature makes it useful especially for cosmetic and reconstructive surgery¹.

The fat tissue collected by suction contains not only adipocytes, but also a significant number of cellular elements from the stromal vascular fraction, such as endothelial cells, pericytes, fibroblasts, and Adipose-derived stem cells (ASCs). ASCs and other cells with regenerative characteristics present in the aspirated fatty tissue play an important role in the viability of these grafts². Studies have shown that one of the main advantages of ASCs is the production of growth factors, which have angiogenic and anti-apoptotic properties that lead to increased graft survival³. These growth factors increase the capillary density and improve the quality of the graft, thereby contributing to better long-term survival⁴.

Historically, the use of fat grafts to correct congenital deformities and complex traumatic wounds with soft-tissue loss after radical oncological surgery was proposed in 1893 by Neuber, by Hollander in 1912, by Neuhof in 1921, and by Josef in 1931⁵. The liposuction technique, introduced by Fisher in 1974, followed by the tumescent technique, introduced by Klein in 1985, accelerated the development of the lipofilling technique. Since the 1980s, autologous fat transplantation has been one of the most popular procedures performed by plastic surgeons⁶.

Methods:

This is a prospective observational study conducted in authors' private work place. 22 patients with contour deformities were enrolled consecutively from March 2017 to

July 2019. Demographic and clinical data of patients was collected after obtaining informed written consent. All participants were subjected to a full clinical history and general clinical examination with laboratory findings to confirm their fitness for surgery. The exclusion criteria included patients with the following conditions: coagulopathies, uncontrolled hypertension, obligatory antiplatelet and anticoagulant drug administration, unrealistic expectations, high BMI (35 or greater), significant weight loss, musculoskeletal anomalies and poor compliance to the follow-up program.

Photographic documentation was acquired preoperatively and at the end of the one month, 3 months and six post-operative months. The photography session during the last follow-up visit was considered to be the post-operative photographic result as long as it was taken six months or more after surgery.

Operative technique

Fat Harvest and Processing:

Depending on patient desire and accessibility, fat was harvested from either the abdomen or the medial side of the thigh. Under local or general anesthesia, Fat was harvested using a 3mm, two-hole, blunt cannula attached to a 20 ml Luer-Loc syringe. The plunger of a 20 cc syringe was pulled back only a few milliliters during suctioning to evade unnecessary negative pressure and to avoid fat cell rupturing. The required amount to fill the contour deformity was harvested accordingly on the basis of clinical judgment.

Lipoinjection:

After activation, fat was injected through a 1.5mm blunt-tip cannula, with a lateral opening using small stab incisions. Fat was placed gently during the withdrawal of the cannula. Fat was placed in small fractions at different depths of soft tissue. End point of lipoinjection was achieved by visual clinical impression.

Patients were given intravenous third-generation cephalosporin during the procedure and discharged on oral antibiotic for a week. The patients were followed up at monthly intervals for six months. All the patients were observed for possible complications such as infection, bruising, swelling, skin necrosis, hematoma, seroma, and uneven skin texture.

Surgeon satisfaction and patient satisfaction assessment was performed by clinical and overall appearance. It was done by clinical examination and comparing the preoperative and six-month postoperative photographs.



Figure 1 : Before & after lipoinjection for a patient with Parry Romberg syndrome



Figure 2 : Before & after lipoinjection for hand rejuvenation

Results

Total 22 patients participated in the study.

Table 1

| Patient characteristics | (n=22) |
|-------------------------|--------|
| Males | 3 |
| Females | 19 |

Table II

Indication of lipoinjection

| Indication | No. of pt. |
|--|------------|
| Facial rejuvenation/hemifacial atrophy | 11 |
| Hand rejuvenation | 4 |
| Gluteal augmentation | 3 |
| Breast augmentation and asymmetry | 3 |
| Scar | 1 |

Table III

| Complication of the lipoinjection procedure | |
|---|---|
| Seroma formation | 1 |
| Infection | 1 |

Table IV

| Patient satisfaction data | |
|---------------------------|----|
| Excellent | 16 |
| Fair | 6 |



Figure 3 : Before & after lipoinjection for breast augmentation

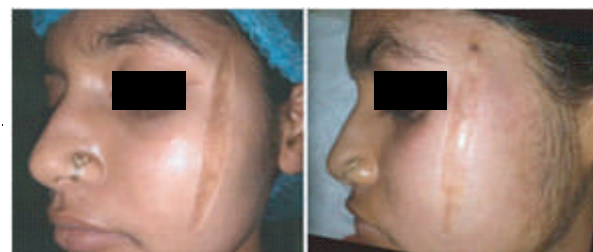


Figure 4 : Before & after lipoinjection for depressed scar



Figure 5 : before & after lipoinjection for hip augmentation.

Discussion:

In the present study, clinical outcomes of treatment of contour deformities with lipoinjection was observed.

Patient and physician satisfaction has a pivotal role especially in facial plastic surgery. Fat injection has been used for more than 20 years as a relatively low-risk and low-morbidity procedure to correct a variety of soft tissue defects in the face, trunk, and extremities. Fat grafts are easily available, biocompatible, associated with low donor-site morbidity, and provide a natural appearance.

Fat transplantation techniques have dramatically changed over the last two decades, from dermal fat grafting where chunks of fat was transferred, which had limited success in the consistent replacement of volume defects, to lipoinjection of aspirated fat after liposuction. This latter procedure, if properly executed, could have a high regenerative potential for both simple volume replacement as well as Aesthetic enhancement of overlying skin. ASCs are similar to bone marrow-derived stem cells in that they are capable of differentiating into multiple mesodermal tissue types and show similar surface protein marker expression⁷.

ASCs are different from bone marrow-derived mesenchymal stem cells because they can be easily obtained using a standard wet liposuction procedure under local anesthesia. ASCs are part of the stromal vascular fraction (SVF) of adipose tissue and secrete vascular endothelial growth factor, hepatocyte growth factor, and transforming growth factor-B in the presence of stimuli such as hypoxia and other growth factors and strongly influence the differentiation of stem cells, promoting angiogenesis and wound healing, and potentially aiding new tissue growth and development⁸.

Applications

3. Breast augmentation/reconstruction:

Autologous fat transplantation is widely used in aesthetic breast augmentation as well as in reconstructive breast surgery. The advantage of breast augmentation by lipoinjection is that there is no surgical scars after the procedure, in contrast augmentation done with silicone implants. An artificial material can also be avoided in this procedure. But the disadvantage is that the patient requires two or more sessions to achieve the desired augmentation. This is because 40% or so of the injected fat is reabsorbed after each session. Lipoinjection can also be a simple solution in reconstructive mammoplasty. Lipoinjection can be used to correct contour defects. In the immediate or late postoperative period, secondary contour defects.

4. Scars:

Fat transplantation can be used not only to

fill atrophic scars but also to reduce scar contracture as a regenerative alternative to other surgical techniques. This is made possible by the presence of ASCs in the fat tissue. The skin and subcutaneous can be destroyed in cases of thermal injury or after trauma. Autologous fat grafts show the ability to regenerate the dermis and subcutaneous tissue and improve the dermal quality in scar areas.

1. Facial rejuvenation:

Autologous fat grafting has an important role in facial rejuvenation. In fact, the unique regenerative potential of lipoinjection leads to excellent results due to its filling properties and the role of ASCs. The loss of facial volume, especially in the periorbital region, is an important component of aging and is due to the redistribution and atrophy of facial fat. Aesthetically, the main surgical indications of lipoinjection for facial rejuvenation are the correction of dark circles, as an adjuvant to blepharoplasty, or as an alternative treatment for hollow eyes and malar bags. Lipoinjection is also a very efficient procedure for correction of hemifacial atrophy in Parry Romberg syndrome. Complications like infection and skin necrosis due to vascular occlusion can occur. But the most dangerous complication of lipoinjection in the face is permanent blindness. This occurs due to inadvertent intravascular injection of fat occluding the central artery of retina.

2. Hand rejuvenation:

The appearance of the hands is a tell-tale

sign of a person's true age. Aging also leads to intrinsic effects such as the gradual disappearance of subcutaneous fullness and tissue atrophy due to collagen depletion and dehydration. This leads to dorsal skin wrinkling and greater visibility of the extensor tendons, and makes subcutaneous veins appear more blue and tortuous.

Because fat not only serves as a filler but also has the regenerative potential to improve the quality of soft tissue and skin on the dorsal side of the hands, fat grafting is an attractive procedure for hand rejuvenation. Under local anesthesia, the fat graft is injected using blunt cannulas to reduce the risk of dorsal vein perforation. Between 10 and 30 mL of fat should be injected to give the hand a puffy, slightly overfilled look. A small volume of fat tissue should also be injected at the base of each finger, to give a uniform appearance to the whole hand⁹.

5. Gluteal augmentation:

Gluteal augmentation is often performed by means of intramuscular implants, but lipoinjection of hip commonly referred to as Brazilian Butt Lift (BBL) has gained popularity in recent times. Fat grafting plays an important role in gluteal augmentation and may replace implant-based gluteal augmentation in some cases, if the patient has great enough amount of fat as a donor material¹⁰ Now a days hybrid on cedance is becoming popular

Every step in fat transplantation, i.e., harvesting, processing, and transplantation,

is important, but viability of the harvested fat cells is crucial. The chances of survival are higher if graft manipulation is less and if it is quickly reinjected.

Donor-site complications appear to be minimal and related to the liposuction technique. The possible complications include bruising, swelling, haematoma formation, paraesthesia or donor-site pain, infection, contour irregularities, and damage to the underlying structures for example due to the intraperitoneal or intramuscular penetration of the cannula¹¹. But the most dreadful complication of Brazilian butt lift is venous fat embolism leading to death. This happens due to inadvertent injury to the Inferior Gluteal veins and subsequent fat embolism in the lungs. After some recent mishaps this has been proved in autopsies. As a result new guideline and restriction has been issued by ASAPS and ISAPS¹².

In the current study, one patient had seroma formation requiring aspiration, and another patient had infection at the injection site that responded to oral antibiotic therapy. There was no features of fat embolism in any patient.

Conclusions:

Soft tissue augmentation with autologous fat, which leaves no scar and lacks the complications associated with foreign materials, can be an ideal procedure in aesthetic as well as in reconstructive plastic surgery. Lipoinjection can be used for various indications, not only for its filler effects but also for its regenerative potentials.

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Review Article

Hymenoplasty: More than Aesthetic Gynecology

Sharmin A¹, Humayra ZU², Khan MA³

Summery:

Women pursue hymen reconstruction for various personal and cultural reasons. Patients may seek to restore the native hymen following sexual violence, medical interventions, or other involuntary hymenal injuries to reclaim personal ownership of their bodies. Others wish to reexperience their first penetrative sexual encounter with a partner¹. Certainly the most commonly reported motivation is the restoration of physical virginity to align patients with the premarital expectations of their ethnic and religious backgrounds. The role and need of hymenoplasty is debatable. But that is not true for the revirgination procedure. In revirgination the tightness created cannot be denied to a patient by any law anywhere in the world, and it is the right of every woman to request this. Every married couple is entitled to the feel of vaginal tightness and accompanying intensified sexual pleasure. The concept of deception is not relevant. This operation is done for the patients, and the principle of confidentiality is as old as medicine itself. But factors such as sporting activities and the use of tampons mean that bleeding with first sexual intercourse is not essential². Over and above, the method is consistent, reproducible and repeatable if required. The newly reconstructed hymen is strong enough to sustain daily activities, but at the same time weak enough to get ruptured at the time of sexual penetration³.

Keywords: Female genital cosmetic surgery, Hymenoplasty, revirgination.

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Introduction : Hymenoplasty, or the surgical restoration of the vaginal membrane, is one of the least described vulvovaginal procedures in plastic surgery. A variety of terms have been used to describe the configuration and/or distortion of the hymen: attenuation, clefts, tears and transections, bumps and notches⁴. Few studies on hymenal configuration in non abused adolescent girls have

been performed, including girls with and without experience of consensual vaginal intercourse and use of tampons⁵. Hymenoplasty is required to restore the hymen if torn before marriage. Nowadays hymenoplasty is also requested by some females at their 25th anniversary to be enjoyed as re-virgin. The recent increase in requests for genital examinations in girls who may have been sexually abused has necessitated the Knowledge of detailed anatomy. There is also demand for hymenoplasty. The primary reconstructive goal therefore is the restoration of a narrow membranous introitus at the external opening of the vagina. Several techniques for hymenoplasty have been described^{6,7}. The hymen has no discrete physiologic function in the adult female reproductive system. An understanding of native hymen variation, including the most common annular and crescentic configurations, is prerequisite to any reconstructive efforts. The prevalence of different hymen configurations in adulthood and age-related morphologic changes have not been well described. The primary reconstructive goal therefore is the restoration of a narrow membranous introitus at the external opening of the vagina. Several techniques for hymenoplasty have been described in this review⁸.

Preoperative consideration: A full medical and surgical history precedes a standard pelvic exam. Surgeons may consider bringing a chaperone to the examination room for the duration of the

exam for patient comfort and where medicolegal climate dictates it. The hymen remnants, also termed carunculae myrtiformes, should be examined to be of sufficient size for primary reapproximation. Any masses or lesions to the surrounding soft tissues must be recognized and investigated accordingly. Evaluation is necessary for inflammatory processes, malignancy, bleeding disorders, and unrealistic expectations. Vulvodynia or chronic pain in the area is a relative contraindication as this can be exacerbated by genital surgery. Surgical risks of the procedure include wound dehiscence, infection, scarring, distortion of the external vaginal orifice, and creating overly small introitus leading to obstruction of vaginal outflow and hematocolpos, dyspareunia, and feelings of guilt. Patients should be educated that bleeding may not occur during first coitus in over half of women with unruptured hymen and that hymenoplasty cannot guarantee bleeding⁹.

Surgery:

There are multiple technique to get maximum benefit by hymenoplasty. Procedure is carried out under general anaesthesia but can be performed under local anesthesia as well. After a dose of prophylactic antibiotics is given the patient is placed in a lithotomy position with bilateral hips flexed and legs abducted in stirrups. The perineal area is prepped with 10% betadine solution¹⁰.

Miliana Vojvodic, 2018, mentioned in his study about the technique of hymenoplasty. He followed the procedure of luminal

reduction hymenoplasty where Labia majora and minora are retracted bilaterally . The hymen remnants are identified at the outermost aspect of the vaginal introitus as an annular array of hymenal fragments separated by clefts. Remnants can appear flaccid and should be gently stretched to ascertain their actual length. The epithelialized free edges of each hymen fragment are gently excised along the clefts with scissors or a scalpel, leaving only the tip of the fragments intact. The free margin

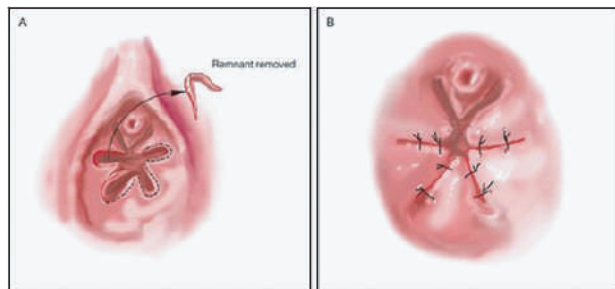


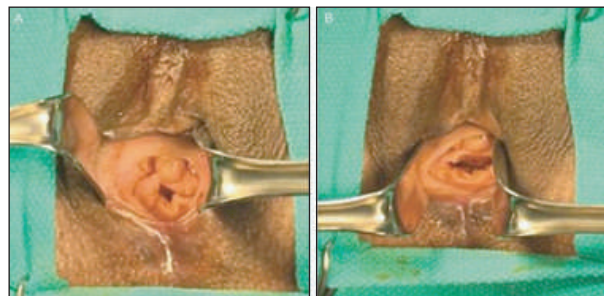
Figure 1: Luminal reduction technique

This is followed by a simple interrupted 4-0 Vicryl rapide suture on the internal surface and another suture on the external surface of the remnants. Sutures are not placed at the anterior aspect of the vaginal canal where the hymen remnants can arise from adjacent to the urethra. All patients are advised to return for follow up on postoperative day one as well as one month and three months following surgery¹⁰ Hemant A. Saraiya, 2015, mention Four vaginal mucosal flaps for reconstruction of a hymen in his research.

Design of flaps around 2.5 cm long and 1 cm wide rectangular flaps are marked at 2, 5, 8 and 11 o'clock position on the anterior vaginal wall. Flaps at 2 and 5 o'clock position are kept proximally based, and flaps at



Figure 3,4,5: Luminal reduction technique¹⁰



8 and 11 o'clock positions are kept distally based or vice versa. Flaps are raised at the

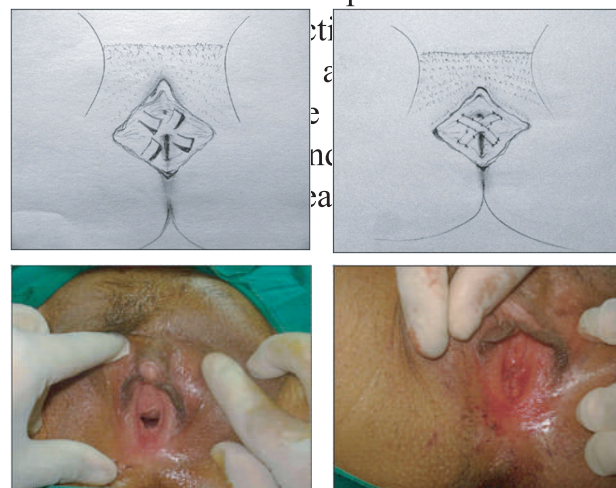


Figure 6,7,8,9: Steps of Four vaginal mucosal flaps¹¹

Discussion:

Abbey B was document the genital anatomy of 211 girls between the ages of 1 month and 7 years who presented for well child care or nongynecologic complaints and who had no history of sexual abuse. Research on the appearance of hymens in prepubertal girls has focused primarily on hymenal configurations and vaginal opening diameters¹¹. Among all 36.0% (76/211) blacks, 33.6% (71/211) white non-Hispanics, 29.9% (63/211) Hispanics, and 0.5% (1/211) Asians. Subjects' ages ranged from 1 to 81 months with a mean of 21 ± 20.6 (SD) months¹¹. Labial agglutination extensive enough to obscure the entire hymen was noted in 10 girls. Three major hymenal configurations were observed: annular, fimbriated, and crescentic. Other configurations noted included a microperforate, sleeve-like hymen with a small opening beneath the urethra in 18 girls and a septated hymen in one subject. Additional features less frequently observed included hymenal tags and bumps. Tags, which were found in 5 subjects. Bumps were distributed around the hymenal edge. Vestibular bands or ligaments in the periurethral area in all 155 girls and 11 of these girls also had bands elsewhere on the hymen. McCann et al noted vestibular erythema, labial adhesions, penurethral bands, midline sparing, and vaginal ridges in many girls without a history of abuse or genital trauma^{10,11}

| | Age | | | |
|------------------------|---------------|---------------|---------------|---------------|
| | 1-12 | 13-24 | 25-48 | 49-81 |
| Horizontal diameter mm | | | | |
| No | 35 | 26 | 27 | 25 |
| Mean \pm SD | 2.5 ± 0.8 | 2.9 ± 1.2 | 2.9 ± 1.0 | 3.6 ± 1.2 |
| Range | 01-3.5 | 1.5-6.5 | 1.0-6.5 | 2.0-4.8 |
| Vertical diameter mm | | | | |
| No | 11 | 8 | 14 | 6 |
| Mean \pm SD | 3.4 ± 1.4 | 2.8 ± 1.0 | 3.6 ± 1.2 | 3.9 ± 1.7 |
| Range | 1.8-6.0 | 1.0-4.3 | 1.0-6.0 | 1.0-8.8 |
| Inferior rim mm | | | | |
| No | 28 | 26 | 29 | 24 |
| Mean \pm SD | 2.8 ± 0.8 | 2.7 ± 1.1 | 2.7 ± 0.9 | 2.7 ± 0.7 |
| Range | 1.5-4.5 | 0.9-5.0 | 0.9-5.0 | 1.0-3.8 |

Table 1 : Classification of Hymenal Findings in Prepubertal Girls by Age¹¹

Goff et al examined 273 prepubertal girls during their routine health assessment and determined that an opening greater than 4 mm was rare. Emans et al compared 20 genital findings in three groups of girls: and find labial agglutination extensive enough to obscure the hymen was present in 5% of subjects and partial agglutination was observed in an additional 17%. Newborns have abundant hymenal tissue, which appears folded or redundant. Hymens to those with at least three separations in the rim resulting in a ruffled edge. The fimbriated configuration includes all hymens with persistence of a redundant or fringed nature regardless of whether multiple separations in the rim were

present^{11,12}. The sleeve-like hymen has been described both as an annular hymen with a ventrally displaced orifice in newborns and as a microperforate hymen in older children. Study observed in girls >48 months old with previous investigators have suggested that hymenal bumps and intravaginal ridges may be suggestive of sexual abuse, but this study found that 7% of girls had bumps and 25% intravaginal ridges. These percentages are lower than McCann and coworkers' report of 18% for bumps (knee-chest position) and 90.2% for intravaginal ridges, perhaps because the mean age in this 28 years. Longitudinal intravaginal ridges commonly occur in the newborn and in the young child. Additionally, the intersection of an intravaginal ridge and the rim appeared as a bump in 4% (8/202) of our subjects^{13,14,15}. If a bump is observed, it is important to determine its origin. Patient requests for hymenoplasty should be approached by surgeons with a willingness to understand patients' social contexts and reasons for pursuing the procedure and are ethically justified by leading Islamic jurists in particular circumstances^{11,16}.

Shu-Yi Wei, 2014, describe Overall, 125 patients had undergone hymenoplasty using the STSI method. Only 1 (0.8%) patient had an early postoperative complication (uncontrolled bleeding). Among the 99 patients who returned for followup at 1 month, healing was recorded for 91

(91.9%)^{17,18,29}. Long term followup suggested that no patient had persistent dyspareunia, menstruation changes, or other health problems after the surgery. Among 51 patients who reported sexual intercourse since the surgery, 47 (92.2%) were satisfied with the outcome and 28 (54.9%) reported blood loss during the first intercourse⁸. He suture three stratum around the introitus (STSI) technique described by Wei et al employs suture layers along 3 stratum, the inner and outer hymena mucosa and intervening submucosal fascia^{18,19,20}. There are techniques described by Goodman. This technique is a simple and effective method for hymen reconstruction where sufficient hymen remnants are present²¹.

Bianca R. van, 2012 publish Results eighty-two women were interviewed at first visit. Sixty-eight women were followed until their decision to be operated upon or not. Forty-eight percent of all subjects reported a history of sexual violence, and 37% had had one or more abortion^{22,27,29}.

A total of nine cases have been performed by the senior authors (F.L. and J.A.) between April 2011 and June 2017 and were compiled as a comprehensive and consecutive case series^{23,24}. The average patient age was 26.9 years old (range, 21.8-37.7 years old) with an average BMI of 21.9 kg/m² (range, 18.3-30.0 kg/m²). The average operative time was 23 minutes (range, 10-42 minutes). The average length

of follow up was 64 days (range, 4-146 days) postoperatively^{23,24,26,10}.

Conclusion:

Hymenoplasty is not same as revirgination surgery and patients do not always appreciate the differences. Women requesting hymenoplasty should be offered complete revirgination surgery which includes hymenoplasty, vaginoplasty and bulbospongiosoplasty³¹.

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Review Article

Oncoplastic Breast Surgery: the Balance Between Oncological Safety and Good Cosmetic Result

Sarker M

Abstract:

Breast-conserving surgery combined with postoperative radiotherapy has become the preferred treatment for the early-stage breast cancer as it has equivalent survival to that of mastectomy. It is sometime challenging to completely excise the cancer with adequate surgical margin while preserving the natural shape and appearance of the breast. Oncoplastic breast surgery emerged as an approach to allow wider excision when required to achieve clear margin without compromising acceptable breast volume and shape. It is based on the principle of plastic surgical techniques for reshaping the breast after oncological excision of breast cancer. This review article will focus on the basic surgical options and approaches to oncoplastic breast surgery.

Key words: Breast conserving surgery, Oncoplastic surgery, Therapeutic mammoplasty, perforator flap.

Introduction:

The role of breast conserving surgery (BCS) was established during the 1980s, when Umberto Veronesi in Italy and Bernard Fisher in the USA separately published their randomized trials showing that overall survival after BCS plus adequate radiotherapy was similar to that following mastectomy^{1,2}.

Breast conserving surgery:

Quality of life is better after breast conserving surgery. Therefore, breast conserving surgery should be performed if

technically
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possible and there are no contraindications. Careful patient education and counselling is important as some women have misconception about oncological safety of breast preservation. There are only two absolute contraindications as mentioned in Table 1,

Table 1: Contraindications of breast conserving

Absolute contraindications:

1. Inflammatory breast cancer.
2. Failure to achieve negative margin without causing breast deformity.

Relative contraindications:

1. Women who prefer mastectomy (after adequate patient education).
2. Multifocal/multicentric breast cancer.
3. Contraindication for radiotherapy: Collagen vascular disease, previous chest wall or Mantle radiotherapy.
4. Strong family history of breast cancer or proven BRCA-1 and BRCA-2 gene mutation carrier.

however, women's request for mastectomy must be respected. There are numerous issues to be taken account when planning breast conserving surgery highlighted in Table 2.

Table 2: Factors to be considered before breast conserving surgery:

1. The size of the tumour versus volume of the breast (Tumour to breast ratio).
2. Location of tumour.
3. Density of breast parenchyma.
4. Degree of ptosis.
5. BMI and body configuration of the patient.
6. Previous breast surgery and scar.

Breast conserving surgery, wide local excision only, no oncoplastic procedure required: When the tumour is 10% or less of the breast volume, simple wide local excision without any oncoplastic procedure may give a good cosmetic result. Impalpable tumour will need localization either by guidewire, radioactive occult lesion localisation (ROLL), radioactive seed localization or intraoperative US

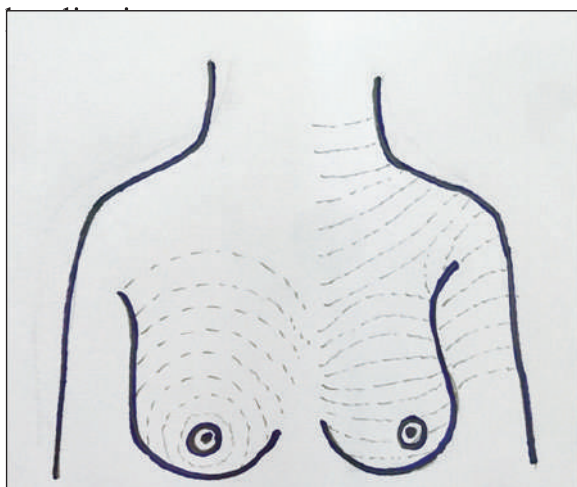


Figure 1: (a) Langer's line (b) RSTL (Resting skin tension line) of Kraissl's.

Placement of incision has great cosmetic value. Knowledge of Langer's lines and Kraissl's lines would help surgeon to make an incision that enhances cosmetic outcome (Figure1). Incisions that follow the maximum resting skin tension lines (Kraissl's line) produce the most cosmetically acceptable scars.³

In majority of cases it is necessary to excise the whole thickness of tissue down to pectoral fascia. If the cancer is superficial and there is a significant amount of tissue deep to the cancer, it may not be necessary to remove the full thickness of breast tissue. Likewise, if the cancer is deep, more tissue can be left superficially on the skin flap.

Oncoplastic surgery:

The extent of surgical excision or the volume of resected breast tissue is the most important factor affecting cosmesis. Where more than 10% of breast volume needs to be resected oncoplastic technique should be planned as it allows wider excision of breast cancer without risking major local deformity. Until evolution of oncoplastic surgery, surgical options have been limited to simple wide local excision or mastectomy. The oncoplastic surgery provide a 'third option' that avoids the need for mastectomy in many patients.⁴

Types of Oncoplastic surgery:

After tumour excision the defect can be reconstructed by one of the two ways:

1) Volume displacement surgery: In this technique, the defect after tumour excision

is reconstructed by recruiting and transposing local dermoglandular flap.

2) Volume replacement surgery: The defect is reconstructed by importing volume from else where.

Comparison of these two techniques has been given in Table 3.

Table 3: Comparison of two types of surgery

| | Volume displacement | Volume replacement |
|-----------------------|---|-----------------------------------|
| Scar | Only in breast | Breast and donar site |
| Contralateral surgery | Mostly required | Mostly not required |
| Operative time | 1-2 hours | 2-3 hours |
| Recovery time | 1-2 weeks | 4-6 weeks |
| Complications | Parenchymal necrosis Nipple necrosis | Flap loss Donor site morbidity |

Choices of Oncoplastic techniques:

The choice of technique depends on a number of factors, including the extent of the resection, the location of tumour, timing of surgery (immediate or delayed), experience of surgeons and the expectation of patient.

Volume displacement Oncoplastic surgeries:

Local breast parenchyma is repositioned to fill the defect using either simple advancement of tissue (Level I) or more complex pedicles (Level II).

Level I Oncoplastic surgeries:

A level I approach includes skin and glandular undermining including nipple areolar complex (NAC) when needed. Level I procedures should be able to be performed by all breast surgeons without specific training in oncoplastic surgery.

If less than 20% of breast volume is excised then Level I procedure is adequate. Typical Level I technique involved intraparenchymal flap with dual-plane mobilization, (mobilization of breast parenchyma from subcutaneous tissue at superficial plane and from pectoral

fascia at deeper plane). Invariably this procedure requires NAC re-centralization (Figure 2).

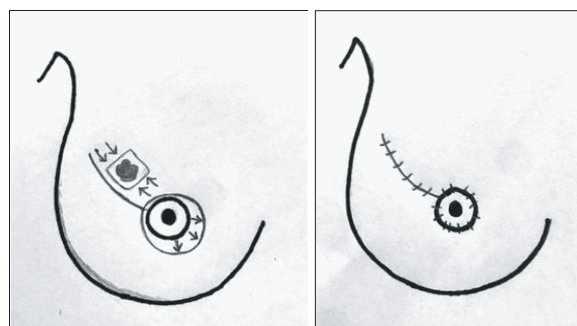


Figure 2: Level I oncoplastic technique. (a) Tumour excision in the upper outer quadrant and de-epithelialization opposite the tumour bed (b) NAC re-centralization.

Level I oncoplastic procedure is best performed in women in dense breast tissue. Women with fatty breast may be at risk of fat necrosis. Other techniques like batwing flap and round block procedure (Figure 3) also regarded as Level I technique ⁵

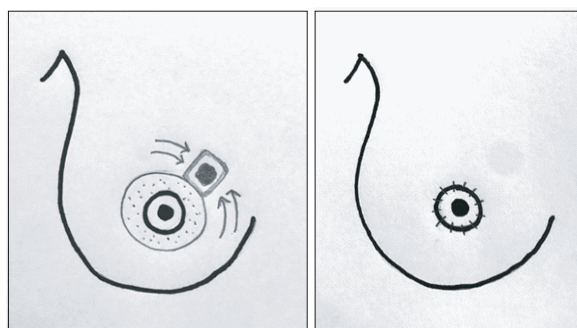


Figure 3: Level I oncoplastic technique. Round block reconstruction (a) Doughnut incision and de-epithelialization with tumour excision and mobilization of tissue to close the defect. (b) Closure of the wound.

Level II Oncoplastic Surgeries:

Level II oncoplastic surgery should be considered when 20-50% of the breast volume is to be excised or the cancer is in a

cosmetically challenging location (e.g. Inferior quadrants). Usually the breast is large, ptotic, fatty breast where extensive dual plane mobilization will cause fat necrosis. Level II techniques, generally called therapeutic mammoplasty, are derived from breast reduction principles that involve skin excision and glandular mobilization to allow major volume resection. To perform Level II procedure, surgeons need additional plastic surgical training. Surgeons need to be familiar with different types of skin incisions (wise pattern, vertical, J-mammoplasty) and pedicles (inferior pedicle, superior-medial pedicle, superior pedicle, dual pedicles)⁶ (Figure 4).

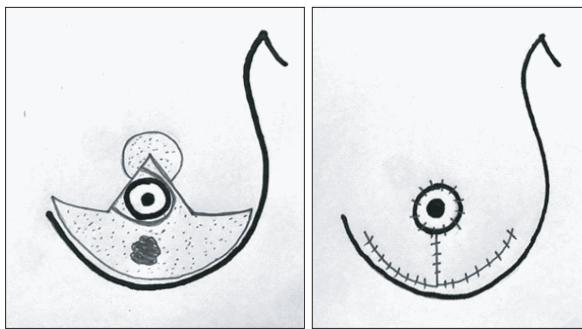


Figure 4: Level II oncologic technique, Therapeutic mammoplasty. (a) Wise pattern skin incision and superior-medial pedicle designed. De-epithelialization and excision of dermoglandular tissue along with lower pole tumour. (b) Closure of wise pattern incision.

There are wide range of Level II oncologic techniques. To simplify the selection of a Level II oncologic technique, a quadrant-per-quadrant atlas has been developed⁷.

Level II oncologic surgery generally results in a smaller, round and perky breast than the contralateral breast. Hence

contralateral symmetrisation operation is commonly required.

Volume replacement surgery:

Volume replacement surgery should be considered when resection of more than 20% of breast volume in a small to medium sized breast or cancer is in cosmetically challenging location (like central, medial or inferior quadrant). In many cases volume replacement surgery can extend the possibility of breast conservative surgery and avoid mastectomy. Deformity resulted from previous breast conserving surgery can also be corrected by volume replacement surgery. It is also considered when patient declined contralateral symmetrisation surgery. High quality focused plastic surgical training is required before performing volume replacement surgeries.

There are several different approaches to volume replacement techniques have been developed, including myocutaneous flap, perforator flaps, lipomodelling and implants.

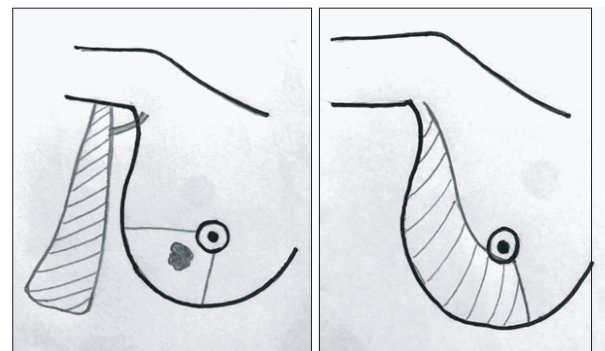


Figure 5: Volume replacement oncologic technique, Latissimusdorsi (LD) mini flap. (a) LD flap harvested on thoracodorsal pedicle. (b) Partial breast reconstruction by LD mini flap after tumour excision.

1. Latissimus Dorsi (LD) myocutaneous flap:

For partial breast reconstruction, autologous LD flap is the most popular and widely practised option because of its versatility (Figure 5). It requires sacrifice of one of the important muscles from back, which sometimes is not acceptable for active women. It has a steep learning curve, more operating time and extended recovery period. Donor site morbidity is another drawback⁸.

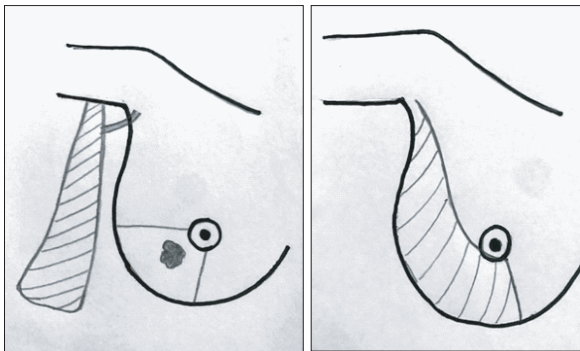


Figure 5: Volume replacement oncoplastic technique, Latissimusdorsi (LD) mini flap. (a) LD flap harvested on thoracodorsal pedicle. (b) Partial breast reconstruction by LD mini flap after tumour excision.

2. Perforator flaps: Thoracodorsal artery perforator flap (TDAP flap)⁹, lateral intercostal artery perforator flap (LICAP flap)^{10, 11} (Figure 6) and anterior intercostal artery perforator flap (AICAP flap) are gaining popularity. Perforator flaps provide skin and subcutaneous tissue for volume replacement, quick to perform, faster recovery and less morbidity than LD flap.

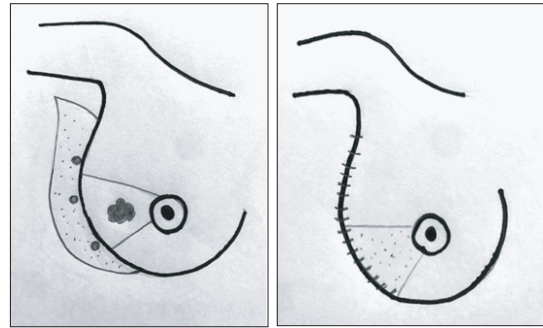


Figure 6 : Volume replacement oncoplastic technique, Lateral intercostal artery perforator (LICAP) flap. (a) LICAP flap harvested on lateral intercostal artery perforators, de-epithelialization of the flap. (b) Insetting of flap on the post excision defect through the lateral breast wound.

3. Lipomodelling: Stem cells harvested from fat are injected to the defect. Immediate lipomodelling is practised in some centres. However, this technique mainly used in delayed setting to correct defect resulted from previous breast conserving surgery.¹²

Conclusion:

As surgical practice guidelines continue to evolve in the field of breast conserving surgery, the values of oncoplastic surgery continue to expand. Oncoplastic surgery extends the role of breast conserving surgery by enabling complete excision of a greater range of tumours without compromising cosmesis. Where simple wide local excision and level I oncoplastic surgery can be taught and performed by breast surgeons, oncoplastic surgeons need training and experience in both surgical oncology and plastic and reconstructive surgery.

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Case Report

Resurfacing Large Palmar Hand Wound with an Aesthetic Demand from a Patient: A Case Report

Rahman H¹, Azad MAK², Mannan MA³, Rouf RS⁴

Abstract:

Early, single stage reconstruction of hand wound with a well vascularised tissue carries the best possible result. It also enables to do any secondary procedures for tendon, nerve or joints. Free tissue transfer is only rarely indicated for the palm. when required, however, these procedures can limit hospital stay and overall cost. Commonly used free flap like radial forearm flap, dorsalis pedis flap, MSAP flap, and lateral arm flap can serve the purpose of resurfacing with good functional result, but they do not match the color and texture of the palm. In this article, we have discussed a case of post burn scar contracture of hand where the patient demanded a colour and texture match of palm and denied to do a conventional free flap. So we did a medial plantar free flap to resurface the palmar defect. The results were good in terms of functional gain and very satisfactory in like with like replacement with colour and texture match.

Key words: Free flap, soft tissue defect of hand.

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Introduction: A reconstructive surgeon is often disposed with the task of resurfacing a palmar hand wound. The wound may result from trauma, burn, infection or a surgeon himself may create the wound after excision of tumor or release of contractures. The optimum soft tissue reconstruction provides a durable yet pliable cover which will prevent contracture, underneath which tendons will glide smoothly and allow the hand all forms of power grip and to execute delicate skills. Although palmar aspect of the hand is frequently involved in accidents, full thickness injury with exposed tendon, nerves and vessels are rare. The reason for this is the similarity of palmar skin to that of the glabrous skin of the

sole which is thick, shock absorbing and resistant to mechanical strain¹. There are many local, regional and distal flaps for resurfacing a palmar hand wound. The “reconstructive ladder” described by Mathes and Nahai is based on the principle of using the simplest approach however to cover a wound which will maintain form and optimize function². This approach is not preferable in all case. Skin grafts are never preferable for a palmar wound, local flaps like distally based pedicled radial forearm flap leaves an unacceptable donor deformity and may not be feasible in a complex trauma with vascular injury; Groin or abdominal flaps are bulky and requires prolonged hospital stay and a secondary stage. Development of a wide spectrum of free flaps (radial forearm, lateral arm, MSAP, dorsalis pedis free flap etc.) over the years have enriched the armamentarium of a reconstructive surgeon and allows him/her to choose a suitable flap of adequate size and composition depending on the need of the patient. When carried out properly they all carry good results in terms of function but they do not mimic colour and texture match of the palm. In this paper the author will discuss a case of free medial planter flap for palmar hand wound where the patient demanded a color match as well as good functional outcome.

Case report:

A 27 year old male presented with post burn scar contracture of middle, ring and little finger, midpalmar space contracture with ulnar deviation of wrist joint of left hand. After scar excision and contracture release

mid palmar space defect was 9X6cm. A free medial planter flap from left foot was harvested and used to resurface the defect.



Fig 1(a): PBSC left hand



Fig 1 (b): Wound after release of contracture



Fig 1 (c): Medial planter flap harvested



Fig 1 (d): Flap inset



Fig 1 (e) and (f): Satisfactory finger extension, opposition and flexion after 13 months

Vascular anastomoses were performed between medial plantar vessels with radial artery and venae comitantes and cephalic vein in end to end fashion. Donor site was skin grafted.

Results: In terms of function patient had good recovery of finger flexion, opposition and grip strength. Aesthetic results were very satisfactory as flap color mimicked the colour as well as glabrous nature of the native skin. Flap was thin and pliable. Patient was very satisfied with result.

Discussion: There are limited indications for free flap cover of a palmar defect. Local or regional flaps like reverse radial forearm flap, posterior interosseous flap, groin or abdominal flap can be used to cover most of the defects. However many surgeons prefer for free tissue transfer to avoid a donor site in as already mutilated hand or forearm^{3,4}. Young women may prefer a flap from inconspicuous donor site to avoid an unsightly scar in forearm^{5,6}. Ultimate decision will depend on size and nature of the defect, vascular status, exposed structures, patient's profile and choice and expertise of the surgeon.

It is very difficult to follow Gillies' concept of 'replace like with like' in palmar defects. Never the less the aim of reconstruction is to have a thin, soft, pliable cover, easily adjusted to contour of hand, allows early mobilization and physiotherapy and most importantly facilitates secondary reconstruction of tendon or nerves when needed⁷.

Common free flaps which are used to cover palmar surface are radial forearm, lateral arm, parascapular, dorsalis pedis, medial plantar, serratus fascial flap and temporoparietal fascia free flap. Choice of the flap is individualized according to the defect and body habitus of the patient.

For example, lateral arm flap which is suitable for one patient may be too thick with subcutaneous fat in another patient. For a thin free flap temporoparietal fascia or serratus anterior fascia flap is ideal for palm. There is no donor site morbidity, scar is not conspicuous and allows secondary procedures after 4-6 months^{8, 9,10}. However they need additional skin graft over the flap and technically more demanding. Cutaneous free flaps are indicated for large and medium sized defect. Commonly used cutaneous free flaps are parascapular free flap¹¹, lateral arm flap¹², contralateral radial forearm flap¹³ and dorsalis pedis flap. Cutaneous flap has the additional advantage of

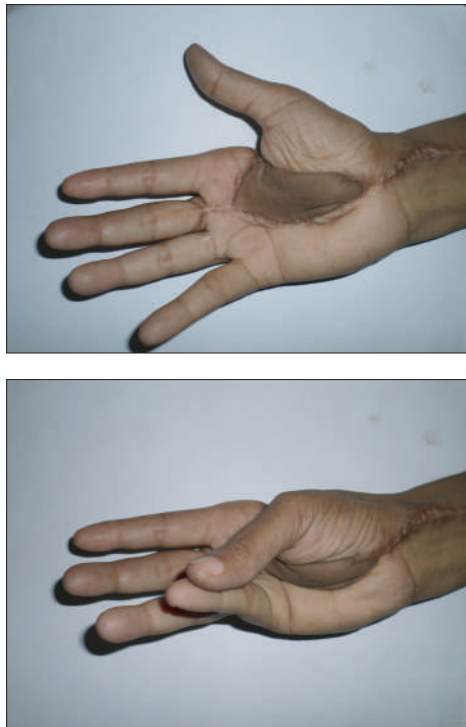


Fig 2 a and b: Compared to free medial plantar flap, dorsalis pedis free flap has similarly good functional result but doesnot have colour and twxture match of palm.

permitting immediate primary steps of later reconstruction, such as placing hunter rods for delayed tendon reconstruction.

The only flap that can replace like with like of palmar skin is medial plantar island flap or instep island flap. Several case reports published excellent results. The flap can be re-innervated and resembles texture of the palm^{14,15}.

In our experience we did four different types of free flaps for palmar defects. They were radial forearm free flap, dorsalis pedis free flap, lateral arm free flap and medial plantar free flap.

In terms of function all carried good results but aesthetic outcome was superior in free medial plantar free flap. It has an additional advantage of a hidden donor area in foot in contrast with a visible donor site in forearm in radial forearm.

Conculation :

Although technically difficult, a free medial plantar flap is a good option for palm resurface in patients who demand a superior aesthetic outcome.

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Case Report

Use of Autologous Fat Grafting as an Adjunct to FAMM Flap for Reconstruction of a Traumatic Lip Injury by Human Bite

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Abstract:

Introduction: The lips have important functional and aesthetic roles in daily living⁽¹⁾. They are the focal point of the lower face, with several aesthetic units intricately controlled by a complex series of muscles. Restoration of the whole spectrum makes reconstruction of the lip especially challenging.

Case Presentation: A 25 years old female presented with a severe tissue defect on her upper lip and left angle of mouth to Japan East West Medical College Hospital, Dhaka. She explained that 1 day back she had been involved in domestic violence and her husband had bitten her on lip. An orofacial examination revealed as Lackmann's classification of facial bite wounds type IIIa². After a proper wound excision, lip defect was covered with a Facial Artery Musculomucosal (FAMM) flap in the first stage. Oral commissure reconstruction and scar revision was done after 2 weeks as second stage, to correct macrostomia and restoration of oral competence. Autologous fat graft was performed to ensure adequate volume enhancement of the newly reconstructed lip as the third and completion stage to achieve the final aesthetic goal and patient satisfaction.

Conclusions: Patient satisfaction is a whole spectrum which encompass both functional and aesthetic restoration. Therefore, aesthetic adjunct procedures may play important role in reconstructive surgeries specially in severe deformities.

Key word: Autologous fat grafting.

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Background:

The lips are the focal point of the lower face, with several aesthetic units intricately controlled by a complex series of muscles. Specially in case of human bites, the size and severity of the injuries vary, ranging from small lacerations, punctures or cuts to total avulsion and loss of relatively Large chunks of tissue therefore comprise a consequence social and psychological effects³.

Case Presentation: A 25 years old female presented with a severe tissue defect on her upper lip and left angle of mouth to Japan East West Medical College Hospital, Dhaka. She explained that 1 day back she had been involved in domestic violence and her husband had bitten her on lip.

An orofacial examination revealed as Lackmann's classification of facial bite wounds type IIIa ; defect on left lateral one-third of upper lip along with commissure. Vermilion reconstruction was performed after a proper wound excision, followed by coverage with an inferiorly based Facial Artery Musculo Mucosal (FAMM) flap in the first stage [Figure 1:A, B].

After two weeks, although the FAMM flap was able to cover the lip defect, there was macrostomia and oral incompetence to liquids. To correct the above mentioned functional deformity a second stage reconstructive surgery was planned constituting Oral commissure myoplasty and scar revision [Figure 1:B,C].



Figure 1: A. Post-traumatic upper lip defect, B. Coverage of lip defect with FAMM flap (7th POD) C. 6 months after 2 staged reconstructive surgery (Volume deficit at the left lateral third of upper lip).

In spite of restoration of functional deformity of the lip and mouth, there was a certain degree of dissatisfaction of the patient. Because of deficiency of adequate fatty tissue below FAMM flap there was a

noticeable volume deficit at the left lateral third of the upper lip. Autologous fat graft was performed to ensure adequate volume enhancement of the newly reconstructed lip as the third and completion stage to achieve the final aesthetic goal and patient satisfaction⁴ [Figure 2: A,B].

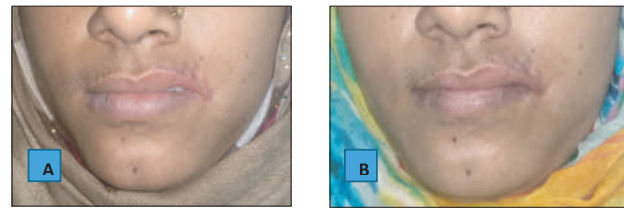


Figure 2: A. 6 Months Post-reconstructive Volume deficit at the left lateral third of upper lip, B. 2 months after autologous fat graft.

Discussion:

Lip reconstruction is driven by restoration or preservation of function and aesthetics². The lips have both aesthetic and functional features that serve to provide recognizable individualized beauty, emotional cues, sensual interactions, speech abilities, and oral continence for nutrition. The facial artery musculo-mucosal (FAMM) flap, initially described by Pribaz et al,⁵ is a versatile flap, useful for covering of a wide variety of oro-nasal mucosal defects including lips. On the other hand, autologous fat transfer to the midface has definite long-term volume augmentation results⁷. Adipose tissue, actually, is the closest to the ideal filler because it is readily available; easily obtainable, with low donor-site morbidity; repeatable; inexpensive; versatile; and biocompatible⁸. A sequential application of both the methods ensured a satisfactory

recovery from a complex lip trauma. There is an abundance of literature supporting the efficacy of fat grafting in both aesthetic and reconstructive cases. Recent studies have shown the utility of adipose-derived stem cells in the improvement of wound healing, describing their ability to regenerate soft tissues and their remodeling capacity provided by their unique cytokine and growth factor profiles⁹. In plastic surgery, lipofilling is widely used in breast augmentation and reconstruction¹⁰⁻¹³ and in volume and contour deformities of the trunk and lower limbs¹⁴⁻¹⁶. Fat grafts have an important role in the treatment of facial hemiatrophy and lipodystrophy, in recontouring and rejuvenation of the aging face and the hands, in the treatment of depressed or altered scars. It is this regenerative capacity that is of particular interest also in chronic wound, including burns and ulcers wound therapy¹⁷.

Conclusion:

As the lips have important functional and aesthetic roles in daily living^[1], correction must be done, addressing both factors making reconstruction of the lip especially challenging. Therefore, aesthetic adjunct procedures may play an important role in reconstructive surgeries specially in complex deformities.

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