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Research Paper

7 SMAS Plasty in Face Lift with Fat Graft: Evaluation of Aesthetic Outcomes

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ABSTRACT:

BACKGROUND:

The main goal of facelift surgery is to reduce the effect of aging by reposition of face soft tissue in to more youthful orientation. There are many methods for SMAS plication which had different design and vector of pull.

OBJECTIVE:

To evaluate the effectiveness and longitivity of 7 shaped SMAS plication in facelift.

PATIENTS AND METHODS:

From January 2020 to march 2021, 10 female patients with age (45-60) years were presented with facial sagging, those patients were subjected to subcutaneous facelift with 7 shaped SMAS plication with fat greft in Al-Shaheed Ghazi Al-Harri Hospital and Baghdad burn medical center at Baghdad medical complex.

RESULTS:

The average follow up period was 6 to 12 months. The mean operative time was 1 hour and 30 minutes. Additional facial procedures were later done which including: fat injection (all patients), brow lift (one patient), facial scar subcision with fat grafting (one patient) and sub mental liposuction with platysma plication (2 patient). All of our patients demonstrate high level of subjective satisfaction with quick recovery with no major or minor complications

CONCLUSION:

The subcutaneous facelift with 7 shaped SMAS plication is simple to learn with high patients' satisfaction and long lasting result.

KEYWORDS: SMAS, SMASplication, facelift, rhytids.

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INTRODUCTION:

The main goal of rhytidectomy or facelift surgery is to reduce the effect of aging by reposition of face soft tissue into more youthful orientation. There are many different approach for face lift, generally speaking those included the subcutaneous approach with or without plication of SMAS and SMAS flap dissection. All of approaches present different principles and promise good outcome. However, there are no general agreement about which of technique had the most effective outcome and there are much debate about the different procedures with no clear evidence support one of surgical procedure over the other [1,2,3].

SMAS plication is one of the most popular means of tightening the SMAS and is the best choice for novice surgeons because it is simple, safe and predictable.

To plicate the SAMA involves securing an area of the tissue with suture and folding it over on itself and tying the suture. The vectors of aging are inferior and anterior, the corrective vector is generally superolatral. The first 2- 0vicryl plication suture is placed at the level of the corner of the month and the plcat is made in such a way to pull toward the tragus[4].

In this study 7 shaped SMAS plication were evaluated as part of subcutaneous face lift.

PATIENTS AND METHOD:

From January 2020 to march 2021, 10 consecutive female patients with age ranging between 45 years to 60 years underwent subcutaneous facelift with 7 shape SMAS-plasty (plication) in Al-Shaheed Gahazi Al-Harri hospital and in Baghdad burn medical center at Baghdad medical complex. Those patients had sagging of the middle and lower face, prominent nasolabial fold, Jowel formation, and irregular contour of the mandibular border. Information regarding patients demographic and comorbid medical condition were obtaining from all of patients.

Detailed medical history is taken, seeking specifically about the controllable factors which might increase surgical morbidities like hypertension and bleeding diathesis.

We excluded those patients with uncountable hypertension or those patients with bleeding tendency. Those patients who seek revision facelift procedure, patients who had congenital craniofacial anomalies, syndromic conditions, intellectual disability, and those patients with unrealistic expectation were excluded from this study. Medication associated with bleeding such as aspirine, warferine, clopidogrel, omega-3, garlic and NSAID were held at least 3 weeks before operations. For those patients who are smoker, tobacco withheld 2 weeks before and after operation.

We adopted subjective measures as parameter for postoperative aesthetic evaluation, these measures include: patients satisfaction, surgeon opinion, and two independent surgeons.

Visual analogue scale from 1 to 10 was used as an indicator for postoperative satisfaction as followed (figure 10).

1-4 poor results

5-7 good results (acceptable)

8-10 very good

Surgical Procedure

All operations were done under local anesthesia except one case done under general anesthesia. Marking was done while patient is sitting position. The incision line extended just 2cm in front the temporal hairline then descent to root of ear helix then extending vertically along the preauriculer crease keeping the incision in pretragal region; the inferior portion of incision extended around the ear lobe and ended just posterior to it without extension to the posterior concha. After finishing the marking of skin incision, the patient lie on table and i.v. access line and monitoring is established. Following the standard procedure for preparing and draping, tumescent is infiltrated using 1.7mm cannula. The tumescent consist of 500ml of ringer solution with 30 ml of 2% xylocaine with 1:100,000 adrenaline + 10 cc tranexamic acid 500mg.

At least 30-50ml is infiltrated per hemi face. The infiltration of tumescent is done after anaesthetized the entery ports by local infiltration of xylocaine with adrenaline. Entery ports were along the incision line in order to avoid trauma to the skin flap and allow uniform hydro dissection.

The operation is begin after waiting 5-7 minutes in order to maximized the hemostatic effect of adrenaline. First V shaped dissecting cannula was introduced through small stab at pre auricular area and then subcision is done along the proposed undermined facial flap, then By using No.15 scalpel. The temporal incision is beveled at 45 degee, in order to avoid injury to hair follicle and the rest of incision is continue along the previously mentioned marking. The skin flap is elevated in subcutaneous plane starting above the helix by blunt scissor using spread and cut dissection with greater care to leave the underlying SMAS layer intact in order to avoid inadverant injury to the facial nerve branches.

The assistant used skin retractor to retract the skin flap and the dissection is done under direct vision. Our dissection is extending 1-2 cm lateral to orbital rim exposing the zygomatic arch and extending below down to the mandible reaching till about 3 cm away from the angle of the mouth. After securing hemostasis by using bipolar cautery, plication of SMAS done. Our SMAS plication done 7th shaped or inverted L fashion. The transverse limb of 7th shaped is done just below the zygoma the length of this limb and its width was varied according to the laxity of the SMAS and it was ranging between (3-5) cm, while the vertical limb also was varied according to ptotic SMAS tissues and was ranging between (1.5-2.5) cm and its location was anterior to preaunicular incision and extended down to the mandibular angle.

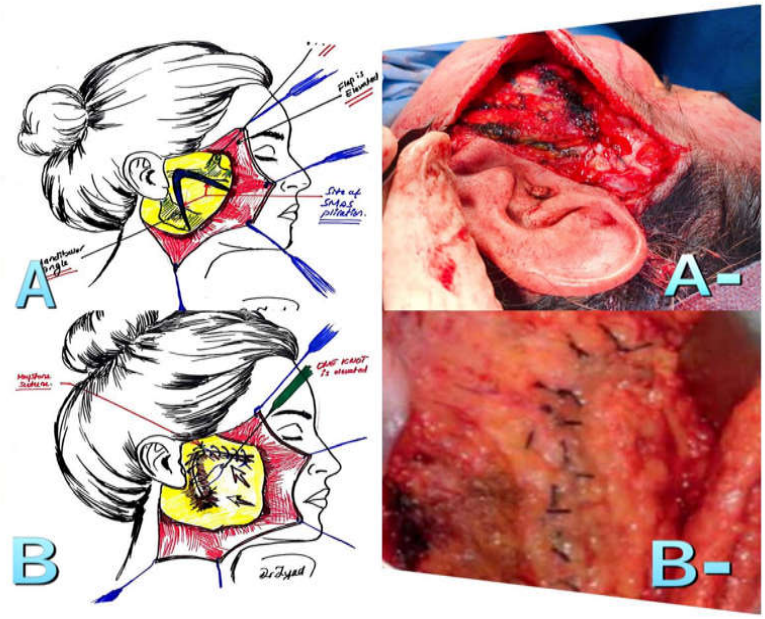
The plication is done using 3-0 PDS suture. The first stich is done at the junction of transverse and vertical limbs (at the most sag point in the lower facial third) which is made in inverted interrupted fashion with around 2 cm bite width. The transverse and vertical limbs of SMAS is then plicate using 3-0 PDS suture in continuous fashion

with 2 cm bite width. An additional interrupted sutures is then added reinforced our plication. Our suture was deep enough to engaged fibrous of SMAS layer in order to achieved durable, long lasting plication, of course not so much deep in order to avoid injury to the facial nerve. After finishing plication and securing the hemostasis, the excess skin is redrapped in posterocephalic direction and key suture is applied at the level of helical root, then redundant skin along the side burn and the preauricular area is trimmed. The ear lobe is delivered and the skin flap around it is trimmed to ensure tension free closure with no excessive pull on ear lobe to avoid pixy ear lobe deformity.

The skin incision then closed in two layers, dermal closure is done by using 4-0 vicryl and skin closure is done by using 4-0 prolene interrupted suture, corrugate drain placed along the wound. Simple dressing is done along the incision line consist of fluffy guaze and this dressing is support by bandage which wrapped around the head in post-cephalic direction.

Postoperative management:

Immediately after discharge patient toward an i.v. infusion tranexamic acid 500mg/ in 500 ml Normal Saline Patients were kept on injectable antibiotic and tranexamic acid tab 500mg once daily for 5days. patients were kept on compression garment (lipoelastic) for 6 weeks postoperatively.



RESULTS:

Ten patients were enrolled in this study. Nine out of ten patients were operated under local anesthesia. The mean operation time was 1 hour 30 minutes. Average follow up period was 6 to 12 months. Additional facial aesthetic procedure was done later on including fat injection (all patients), upper and lower blepharoplasty (one patient), eyebrow lift (one patient), and submental liposuction with platysma muscle placation (2 patient), facial scar subcision with fat graft (one patient.

All patients showed long lasting improvement in their soft tissue sagging of the middle and lower face which was maintained during follow up period. All of our patients demonstrate high level of satisfaction with their facial appearance which was evaluated according to visual Analogue Scale (VAS) with mean of (8) and they feel that they appeared younger than their actual age. The (VAS) of the surgeon and the two independent surgeons was correlated with mean of [7].

There was high correlation between patients and surgeon regarding cosmetic outcome. All of our

patients had quick recovery to their normal daily activities. Only one of our patient developed on table hematoma which was successful drained without noticeable effect on the outcome. Majority of our patient had developed minor ecchymosis which was resolved spontaneously within 3 to 4 days. No major complication was seen like facial nerve palsy, wound infection, flap necrosis or sloughing.

The scar was accepted and inconspicuous and we reported no hypertrophic or keloid scar formation along incision. Also no alopecia was noticed along temporal hair line. None of our patient had request revision surgery during follow up period.

Figure 1: 62 years old female underwent 7 SMASplication with frontal, right and left oblique. (A) pre-operative (B) 3 months (c) 12 months post-operative.

Figure 2: 45 years old female underwent 7 SMASplication with frontal, right and left oblique. (A) pre-operative (B) a week (c) 12 month post-operative.

DISCUSSION:

In this study, facelift was done using subcutaneous approach with SMAS plication done in 7shape. We adapted this type of SMAS plication to achieved supriolateral corrective vector which is counter the vector of aging decent which is anterio inferior. The key suture in our procedure was done at the junction of transverse and vertical limbs of our 7 shaped plicated, this suture provided us with secure and effective lifting of SMAS in the superlateral direction (most ptotic part of the face at Jowel area is anchor at this point).

In our procedure we try to catch as much SMAS tissue by suture without producing too much bunching and thickened ridge, even so, when bunching is procduce. It was buried by additional reinforcement simple interrupted sutures. Also we practice extreme caution not to go so deep into the SMAS layer as it will endanger the facial nerve, this particularly true at the transverse limb below the zygomatic arch where the frontal branch of facial nerve is travel within the superficial

temporal fascia as it crosses the zygomatic arch [5].

Our procedure provided simple, safe technique for facial rejuvenation since it had limited incision and dissection, it provided adequate and predictable SMAS lift that can be noticed during operation. The vector of lift in superolateral direction give natural (non-operated) appearance. Both Jacon and Ransorm [6] proposed that SMAS suspension toward the superolateral direction will provided patient with maximal rejuvenation. A pure horizontal vector lead to midface flatten, while pure vertical vector Cause bunching of midface at the lateral canthal region.

SMAS plication which is done in our procedure lead to increases the thickness of subzygomatic area to more valumized (full) appearance than the preoperative status [7].

Since our procedure had minimum dissection it can be safely performed even in patients with history of smoking, diabetic or hypertension. The problem with smoker is high incidence of skin necrosis, and this complication is seen with longer flap. We strongly recommend our patient to discontinue smoking at least 2 weeks before and after operation. In general, patient who are heavy smoker that cannot follow the recommendation they are more appropriate to be consider for deep plane procedure [8].

Although hematoma remain the most common major post-operative complication in facelift surgery (1.86 to 9%) [2], fortunly in our procedure we just encounter one case. Which was discovered intraoppratively and evacuate successfully with no further sequels.

The low incidence of hematoma in our study is attribute to careful review of patient history before operation, with focusing on bleeding tendency, controlled the blood pressure and avoiding any medication that might increase the risk of bleeding and may be due to tranexamic acid administration during and after opration. Local inflitrarion of tranxamic acid is thought to reduce the intraoperative and post oprative bleeding and ecchymosis [9].

All of our patients had fat graft later on. Fat compartment volume restoration with face lift improved the result of our procedure since it address one of the key problem in facial aging which namely, volume deflation .Fat grafts can be also isolated rejuvenation method for aging face also it act as powerful complement to lift the facial structures [10]. One method of SMAS plication is purse-string.

This method offer many advantages it provided distribution of face along the circumference of the purse string, this is due to the suture weave into the tissue with several firm bites. Purse sting create multiple micro plication of SMAS tissue which in turn lead to stable volumetric shift of the face. However, purse string plication lead to gathering of tissue which lead to lumps and bumps formation. Hopping et al., were suggested SMAS sectomies before placement of purse string suture to eliminate the bunching. However, resection of SMAS put the underlying facial nerve and parotid gland in risk of injury. Also purse string suture may lead to lymphatic congestion and thus prolong swelling process [7,11,12].

Our procedure is safe and provided rapid return of patient to usual activities since it involved subcutaneous dissection with SMAS plication only without deep plane dissection and SMAS resection. Our procedure in addition it safe and simple, yet provided patient with satisfactory result. Seckle reported that aggressive deep plane rhtidectomy had more incidence of facial nerve injury since it located closer to plane of dissection. There is 3.6% risk of facial nerve injury with deep plane technique [13].

Two set of identical twins were subjected to facelift operation with using different technique including the deep plane facelift and SMAS approach. After10 years, it was concluded that the patients in both groups had satisfactory aesthetic outcome regardless the technique which was used and either technique shown to provide the patient with desired long-lasting effect [1].

CONCLUSION AND RECOMMENDATIONS:

The subcutaneous face lift with 7 shaped SMAS plication showed to be safe, simple to learn with high patient satisfaction and long lasting result during follow up period which was extended 6-12 month together with rapid recovery time.

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