

Transverse Scar Breast Reduction Technique with Suspended Dermal Slings for Correction of Severe Breast Ptosis and Macromastia

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ABSTRACT

Introduction: Visible scarring over the breast mound is a disadvantage of the classic inverted-T breast reduction technique. The transverse scar breast reduction (TSBR) technique with suspended dermal slings limits the scar formation to the hidden inframammary crease.

Patients and Methods: Sixteen female were included in this study. We used the TSBR technique with suspended dermal slings for correction of severe breast enlargement and breast ptosis. Early postoperative complications were recorded. After 2 years, patients' satisfaction about the surgery was analyzed.

Results: All cases showed complete wound healing within two weeks except one case who showed partial ischemia of the nipple areola complex, which was managed successfully by dressing changes. Regarding late complications, two cases showed fat necrosis. However, overall patients' satisfaction was high.

Discussion: Many surgeons use the technique of wise pattern inferior pedicle breast reduction for correction of huge breasts with severe ptosis. Vertical scar breast reduction technique is not best indicated for correction of such condition. Transverse scar breast reduction limited the scars of the surgery to the hidden inframammary fold and achieved stable and accepted results.

Conclusion: Transverse scar breast reduction with suspended dermal slings corrected huge breast enlargement and severe breast ptosis with a concealed scar restricted to the inframammary crease. Patients' satisfaction about the outcome of surgery was high after 2 years of follow-up.

Key Words: *Transverse scar – Breast reduction – Breast ptosis – Macromastia.*

INTRODUCTION

Breast enlargement is a common complain of female patients who seek plastic surgery advice. There were several techniques to achieve breast reduction. The inverted T technique was popular by many surgeons [1-4]. The disadvantages of this technique included extensive scarring, liability to

delayed wound healing, hypertrophic scar formation and pseudoptosis of the glandular tissue [5,6].

Modifications of the inverted T technique included the vertical scar breast reduction (VSBR) technique and the transverse scar breast reduction (TSBR) technique. The (VSBR) technique avoid the incidence of transverse inframammary scar. However, this technique is not ideal for cases with sever ptosis and is best indicated for cases with mild to moderate breast enlargement and ptosis [7].

The (TSBR) technique or no-vertical scar breast reduction (NVSBR) technique described by Passot in 1925 [8]. Ribeiro [9] and Yousif [10] republish this technique in the end of twentieth century.

In this article, we evaluated the results, patient satisfaction and the limitations of the horizontal scar breast reduction (HSBR) technique with suspended dermal slings in correction of severe breast ptosis and enlargement.

PATIENTS AND METHODS

This study included sixteen female cases who suffered of severe breast hypertrophy and ptosis who were operated upon using transverse scar breast reduction technique with suspended dermal slings.

Patients were included in this study when they suffered from severe breast ptosis and enlargement that resulted in shoulder pain, back pain, neck pain and/or intertrigo under the patients' breasts.

Exclusion criteria included Patients with clinical and radiographic evidence of mammary cancer, diabetic patients, patients with severe cardiac, hepatic or renal impairments and patients with body mass index (BMI) more than 40.

Clinical evaluation of all cases was done. Standard preoperative photographs including anterior, lateral and oblique views were obtained. Soft tissue mammogram was done for all cases above 35 years. Breast ultrasound was done in younger cases. The benefits, limitations and potential complications of surgery were explained to our patients. Every patient signed an informed consent.

Markings:

We started the markings while the patient stand and was exposed from the suprasternal notch to the inguinal ligament. We marked the midline from the suprasternal notch to the umbilicus. Then, we marked the breast meridian and inframammary fold. The new position of nipple areola complex (NAC) was marked at the point on the breast meridian and at a distance of 21 to 23cm from the suprasternal notch. Then, a circle of 40-50mm was drawn around this point representing the areola. When there was ptosis of the inframammary fold, a new inframammary fold is drawn about 1-2cm higher than the original one.

The inferior boundary of the upper cutaneous flap was located at a distance of 9cm inferior to the planned new position of the center of the NAC. From this point, a curvilinear line was drawn to meet the outer boundaries of the inframammary fold. Then a second line was marked along the upper margin of the current areola to define the degree of skin resection. The last step was to mark the inferior pedicle with a 10cm width Fig. (1A). Lateral to the inferior pedicle, an extended area of deepithelization was marked on both sides of the inferior pedicle representing the dermal suspension slings.

Technique:

Under general anesthesia, the Patient was placed supine with the arms making 90 degrees with the body, prepped and draped. We infiltrated the edges of skin incision with adrenaline solution 1/1000000 and xylocaine 1% and applied breast tourniquet at the base of the breast to minimize blood loss. We incised around the NAC and started deepithelization of the inferior pedicle.

After complete deepithelization of the inferior pedicle and the suspension dermal slings, the lower border of the breast skin flap was incised down to pectoral fascia followed by its elevation towards the clavicle. A thickness of about 15-20mm of the upper skin flap was maintained to preserve adequate vascularity to the skin flap. All the glandular tissue deep to the upper skin flap was excised.

Later, we elevated the inferior pedicle with the suspension dermal slings by incising of its borders. The Breast tissues around the inferior pedicle were removed. The suspension slings were created by removing the breast tissues deep to the dermis Fig. (2). On the lateral aspect of the breast, breast septum was identified and preserved. Afterwards, debulking of the lateral portion of the breast was done to prevent the occurrence of boxy shaped breasts. The suspension dermal slings were sutured to the periosteum of the second or third rib periosteum using PDS 2 zero sutures. Plication of the inferior pedicle was done to decrease the length of the inferior pedicle by dermal suturing of an ellipse of the inferior pedicle using 5 zero Vicryl continuous suture Fig. (3). Then we temporarily sutured the upper skin flap to the inframammary crease. At this point, we changed the angle of the operating table to 45 degrees.

From the lateral position, the point of maximum breast projection was marked on the breast mound and the upper border of the new areola was marked on this point. A circle of 30-40mm was drawn at this point and the NAC was delivered through this hole and sutured in a tension free manner Fig. (3). Finally, a drain was inserted under the breast mound and the inframammary crease incision was closed. We applied a pressure garments to minimize postoperative edema.

Postoperative antibiotics and analgesics were given. The patient was discharged on the second postoperative day. Drains were removed when it discharged less than 25ml in 24 hours. After 7 days and in the first follow-up visit in the outpatient's clinic, we performed dressing changes and advised patients to wear a supporting wireless bra for 2 month. All patients were followed-up for at least 2 years and were evaluated for the results.

RESULTS

This study included sixteen female patients who complained of bilateral severe breast ptosis and macromastia. Their ages ranged from 20 to 52 years (average was 35 years) and their BMI (body mass index) ranged from 30 to 39 (average was 33). Patients' demographic data are shown in Table (1).

The resected tissues' weight from the right breast was from 810 grams to 2200 grams and from the left breasts from 830 grams to 2000 grams.

Early postoperative complications were hematoma collection in one case who was suffered of bleeding tendency due to chronic use of analgesics. Two cases showed partial loss of the nipple areola complex, which were managed successfully by routine dressing changes. Late complications included traumatic fat necrosis in two case. Intact sensation of the NAC was observed in all cases but one case. Preoperative and postoperative photos were shown in Figs. (4,5,6).

Overall satisfaction of the outcome of surgery after 2 years was high. Both patients and their partners were satisfied about the breast size, shape, scars and symmetry.

Table (1): Shows patients' age, weight, height and body mass index (BMI).

Cases	Age in years	Body weight in kg	Height in cm	BMI
1	30	90	168	32
2	36	100	169	35
3	50	85	160	33
4	32	107	175	35
5	35	90	167	32
6	34	92	170	32
7	32	94	165	35
8	40	87	160	34
9	37	100	160	39
10	20	79	157	32
11	46	75	156	31
12	24	80	160	31
13	35	85	163	32
14	33	89	162	34
15	34	90	170	30
16	40	78	156	32

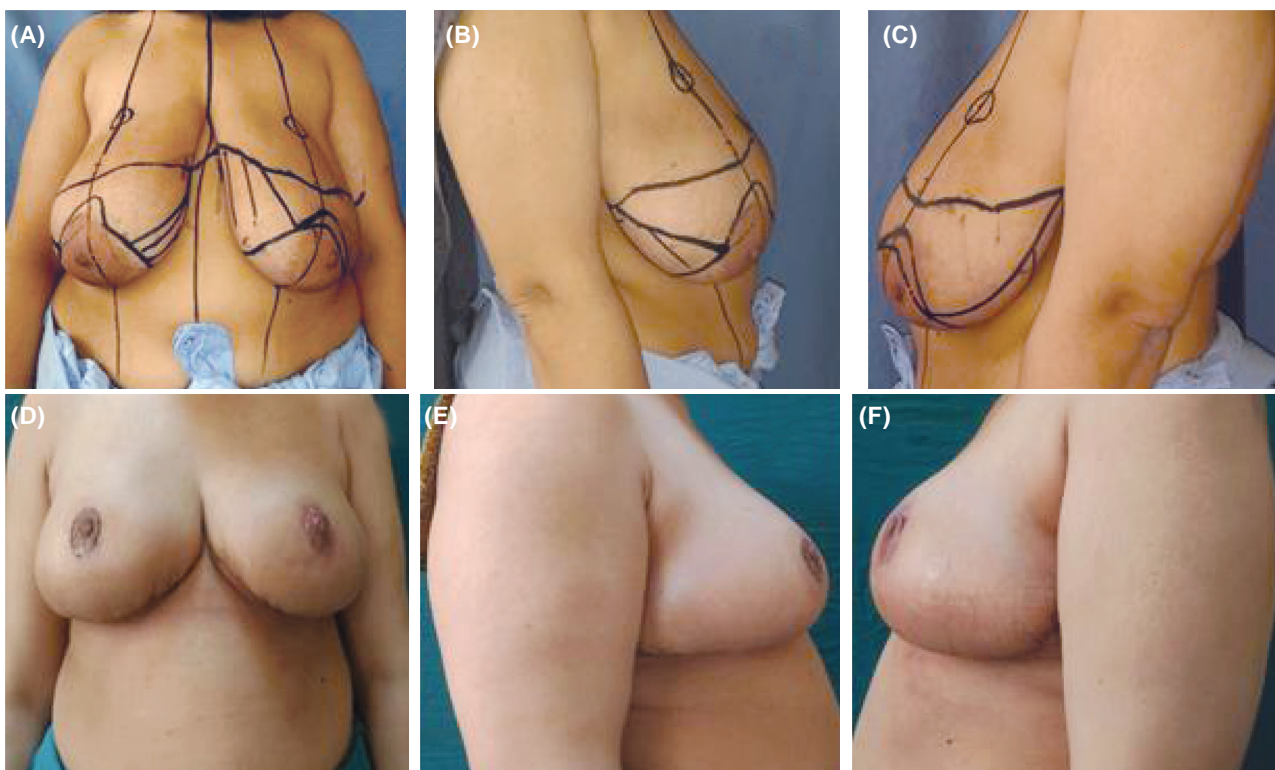


Fig. (1): A female patient who underwent transverse scar breast reduction. (A): Preoperative anterior view, (B): Preoperative right lateral view, (C): Preoperative left lateral view, (D): 2 years postoperative anterior view, (E): Postoperative right lateral view, (F): Postoperative left lateral view.



Fig. (2): Intraoperative photo shows after de-epithelialization of the inferior pedicle and creation of the lateral suspension slings.

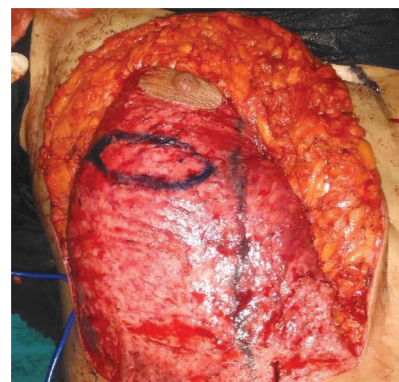


Fig. (3): Intraoperative photo shows secured suspension slings to the chest wall. The marked ellipse will be sutured to decrease the length of the inferior pedicle.

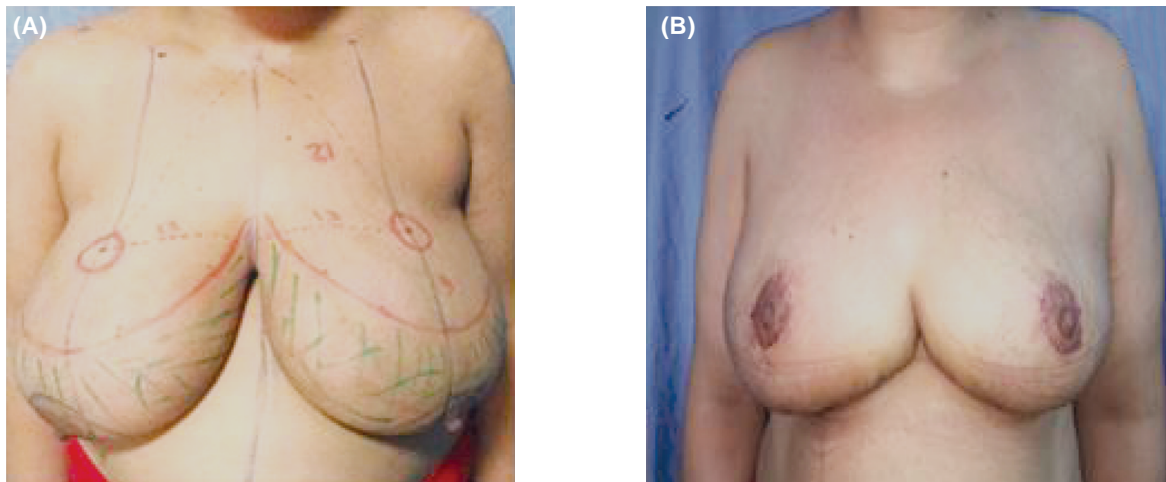


Fig. (4): A female patient who underwent transverse scar breast reduction. (A): Preoperative anterior view, (B): 2 years postoperative anterior.

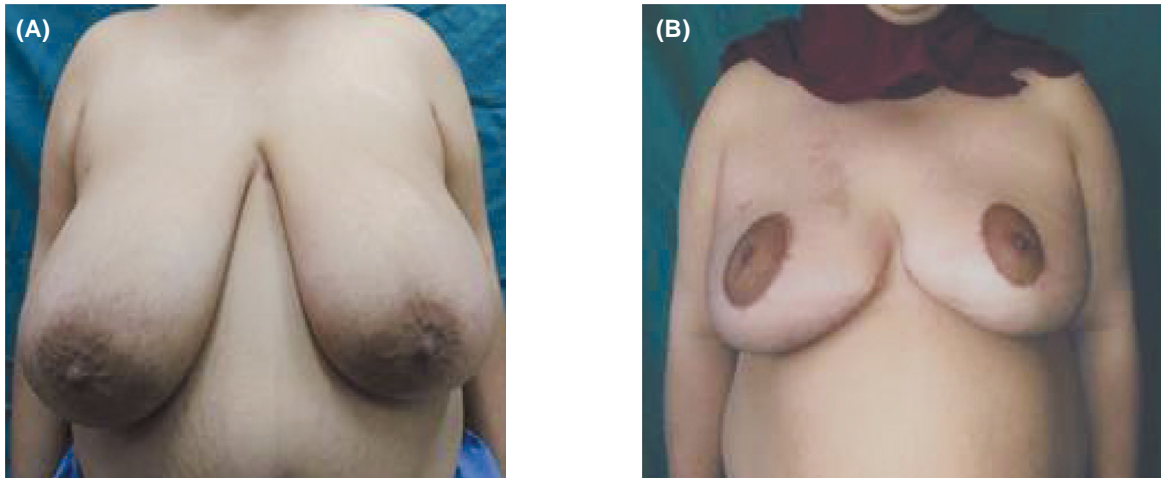


Fig. (5): A female patient who underwent transverse scar breast reduction. (A): Preoperative anterior view, (B): 2 years postoperative anterior.

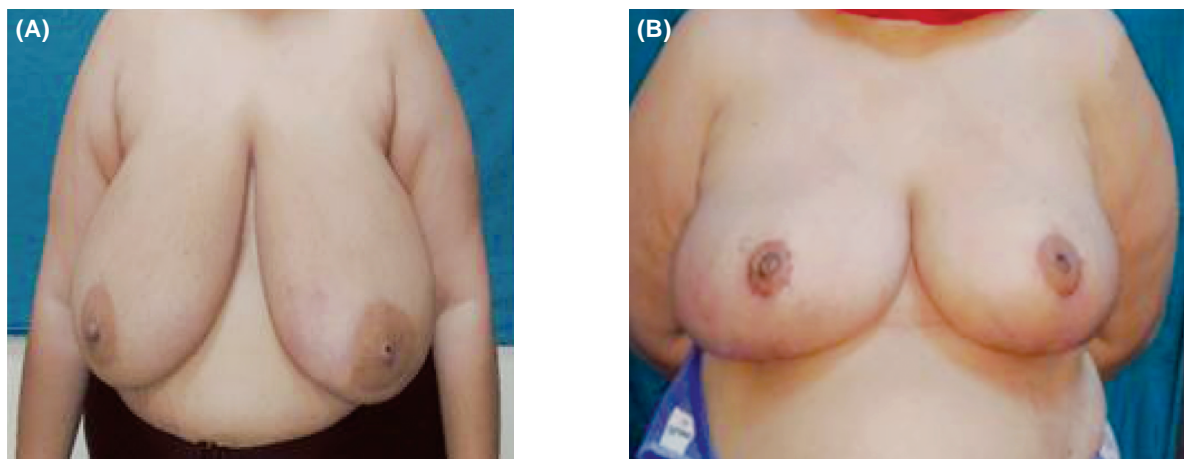


Fig. (6): A female patient who underwent transverse scar breast reduction. (A): Preoperative anterior view, (B): 2 years postoperative anterior.

DISCUSSION

Several breast reduction techniques have been developed. The two basic steps in any breast reduction technique are creation of a dermal pedicle that carries adequate neurovascular supply to the NAC and the design of skin flaps that cover the pedicle to maintain an accepted external shape of the breast tissues [11].

In this work, we created an inferior pedicle that was secured to its position to the chest wall using suspension dermal slings to prevent the sagging effect of the gravity that results in bottoming out of the breast tissues. In addition, we used the transverse scar breast reduction technique to eliminate the vertical limb of the classic inverted T pattern. We think that the undisturbed flap gives better support to the inferior pedicle than the sutured flaps of the classic inverted T pattern where the vertical scar is weak, liable for stretch over time and giving very weak support to the inferior pedicle.

Breast reduction surgery changed the quality of life of many women who suffered from the annoying symptoms of breast enlargement [12-15]. The surgical strategy of inverted-T breast reduction technique was considered the paradigm to which modern surgical techniques were to be compared [16]. Lejour popularized vertical scar breast reduction [17]. Benelli [18] used periareolar approach to induce breast reduction and correction of breast ptosis. However, these vertical scar techniques were not suitable for huge breast reductions and correction of severe breast ptosis and were best indicated for correction of small breast enlargements and mild to moderate breast ptosis [19].

In cases with moderate to severe breast ptosis, wise pattern breast reduction with either superior or inferior pedicle was the treatment of choice by many surgeons because of the ability to maintain the vascularity and sensation of the NAC while achieving an aesthetically accepted breasts [20-22]. Zehm and his colleagues measured the elongation of the distance between the NAC and the inframammary fold in cases managed by superior and inferior pedicles. There was no significant differences between these two groups and the mean distance of elongation of the inferior breast pole after superior pedicle was 3.3cm and after the inferior pedicle was 3.9cm [23].

The use of transverse scar breast reduction with the suspension dermal slings enabled surgeons to decrease the length of the resultant scar after surgery. In addition, the intact skin above the inframammary fold provided stronger support to

the breast tissues that resist stretching over time more than the vertical component of the inverted T scar [24-28].

The limitations of the transverse scar breast reduction included the possibility of occurrence of boxy shaped breast after surgery especially in short obese females. Proper debulking of the lateral components of the breast tissues above the breast septum was needed to prevent such complication. In addition, in case of obesity of the lateral chest wall, the inframammary scar might be extended to the mid axillary line resulting in visible scars.

We recommended the use of this technique in correction of cases of severe breast ptosis and enlargement. This technique was easy to learn, safe to perform with hidden scars in the inframammary fold. This technique allowed tension free closure of the NAC with intact vascularity and sensation to the NAC. In addition, a better shape of the NAC was obtained, as the NAC was not affected by the vertical limb of the inverted-T original technique.

Conclusion:

The technique of transverse scar breast reduction improved the symptoms of severe breast ptosis and breast enlargement with accepted overall breast shape and limited hidden scars in the inframammary fold.

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