Autologous Vein/Collagen Transplantation for Correction of Dermal Atrophic Changes

Diego Schavelson
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Filling substances for dermal atrophic changes and tissue augmentation consist of various compounds: autologous fat, bovine collagen and various synthetic substances such as Gortex. Each of these compounds has advantages and disadvantages. This paper will describe a novel implantation material that is readily available, easy to procure and long-lasting if not permanent – varicose veins.

Varicose veins are best thought of as tortuous tubular structures composed of endothelial cells surrounded by a layer of collagen, elastin and muscle. When the endothelium is removed or destroyed one is left with an excellent dermal filling substance. The extracted vein can be used either as a tubular structure or cut into pieces as tailor-made dermal implants. The vein wall, being autologous will not be rejected and may become more resistant to autolysis than other non-autologous materials (Zyderm collagen).

Vein wall thickness varies with the size and location of varicose veins. Veins that are located on the leg and those located distally have a thicker wall. The increased thickness in these areas is due to the necessity for the vein to contain and transport blood under increased hydrostatic pressures. This factor is important when considering potential sources for a dermal filling substance. Although other veins can be used (such as dorsal hand veins) they will contain less collagen, elastin and muscle.

One potential problem with using varicose veins as dermal implants is the potential development of new vascular conduits by migration and/or extension of the intact endothelial cells. This adverse effect has not been noticed previously on over 5 patients some of whom were treated over 5 years previously.[1] Never-the-less, as described below, it is the author's technique to place the extracted varicose vein(s) into a solution of 23.4% hypertonic saline for 5 minutes to destroy any viable cells before implantation.

Technique

Varicose or unwanted veins over 2 mm in diameter are removed through 1-2 mm incisions, under local anesthesia in a procedure called, "ambulatory phlebectomy," detailed descriptions are presented elsewhere.[2-4] In short, the unwanted vein is marked while the patient is standing and then again with trans-epidermal illumination while the patient assumes the operative/recumbent position as previously described.[5] Anesthesia is achieved through infiltration of a 0.1% lidocaine solution along the course of the marked vein. Approximately 5-10 ml of anesthetic solution is used for every cm of vein extracted. Using tumescent

anesthesia, the extracted vein is compressed and relatively devoid of blood.[6]

Two to three mm incisions are made adjacent to the vein with a #11 blade. The vein is then gently extracted with a phlebectomy hook. The author prefers a #3 Mueller hook, although any type of hook can be utilized. The extracted vein is not ligated unless it is part of the greater or lessor saphenous system. In this case a 3/0 Vicryl suture is placed proximal and distal to the extracted portion of vein. This procedure will minimize hematoma formation and ecchymosis.

The extracted vein(s) are placed in a 23.4% hypertonic saline solution for 5 minutes. This results in total destruction of viable endothelial cells. The veins are then rinsed three times with normal saline. After rinsing, the vein is then placed in the dermal defect or area requiring augmentation after the area is injected with 1% lidocaine with epinephrine. One method to insert the vein segment is to create a tunnel with a blunt dissector, tie one end of the vein with a 3/0 nylon suture and thread the vein into place as one would do for other filling substances such as Gortex.

The author has not found it necessary to anchor the vein to any dermal structure. The insertion holes are approximated with steri-strips that are removed in 2-3 days. Shows the clinical appearance before and after autologous vein placement into the nasolabial grove.

Conclusion

A novel method for correction of dermal defects is presented. Long term follow-up is necessary to fully define the capabilities of this procedure. Studies utilizing fresh frozen autologous vein segments are underway to determine the relative efficacy for delayed use of vein segments. The author recommends that patients who may desire soft-tissue augmentation or correction be advised to save their extracted veins for later use.

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The Use of Pletelet Rich Plasma in the Tumescent Face Lift

Guillermo Blugerman
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Introduction

The purpose of this study was to determine the usefulness of pletelet rich plasma spray for prevention of hematoma formation in patients treated surgically for facelift under tumescent anesthesia. It was thought that by improving wound adhesion, better wound healing and early motion would be encountered.

Fifty patients with facial aging underwent surgical treatment on an outpatient basis using pletelet rich plasma in the face. All procedures were done under tumescent local anesthesia. Prior to skin closure, the wound was sprayed with 3 ml of pletelet rich plasma and compression was maintained for 3 minutes, after which the suture are completed and the dressing was applied. In only one patient did wound problems occur, secondary to hematoma formation. Normal or improved wound healing occurred in all other patients with no hematoma formation.

Material and Method

The use of local tumescent anesthesia has been very important in the liposuction surgery. Given the success in this surgeries, we decided to use that type of anesthesia in other types of surgeries, the Face Lift among them. We were soon able to notice the great advantages that this type of anesthesia offers at the operative and post-op stage, giving a wide safety margin. Besides it reduces the time of hemostasis. In opposition to this, we started to observe a rise in the number of hematoma and serome immediately after surgery. Then we got the idea of using fibrin glue when closing the flaps, something other colleagues had been doing as from the mid 1990s.

Fibrin tissue sealants are effective in sealing tissue, wound healing, or establishing hemostasis during the treatment of soft and hard tissues. It has a wide spectrum of indications in orthopedic, neurological, plastic, oral, and maxillo-facial surgery. Pletelet rich plasma is very useful in order to reduce the risk factors in the treatment of patients with bleeding disorders. Also, an increase in connective tissue attachment after the use of a fibrin adhesive system has been reported.

Schlag et al. showed no foreign body reaction in rat skin after implantation of Tissucol fibrin sealant. Stimulation of fibroblasts and an increase in collagen production was observed after the implantation of fibrin sealant on the tissue. Our doubt was how the pletelet rich plasma would behave on the humid surgical bed in the surgeries performed with this special type of anesthesia.

Surgical Technique

Different extension facelift was performed on 50 patients for facial rejuvenation in an outpatient

setting. All surgeries were performed under tumescent local anesthesia with careful attention to face lift surgery principles.

The tumescent solution employed include

500 cc. of saline solution
30 cc of lidocaine 2%
1 cc. of adrenaline 1:1000
10 cc. of molar bicarbonate

Following skin undermining, hemostasis was carefully obtained. Oblique Smasectomie was performed and closed by 4/0 mulifilent suture. The cutaneous flap was compensated and the excess of skin was resected. Before the final suture, Pletelet rich plasma (3 ml) was then sprayed on the internal surface of flap and on the subcutaneous. The flap was positioned in its final place and compression maintained on the flap for 3 minutes. No drainage was employed. Final skin suture was performed with 5/0 nylon. Microporous drapes were put on the undermined area and on the scar in order to diminish the tension on the stitches. The dressing was applied using a soft cotton and bandage.

Patients were discharged from the hospital after one hour and instructed to elevate the head during the sleeping. Discharged patients were prescribed analgesics or and anti-inflammatory drugs and they returned one day after surgery. The dressing was removed at this moment and microporous drape was left on the place. A second control was performed five days after, at this moment the microporous drapes were changed. Sutures were removed a week later.

Results

Of 50 patients with 100 areas of undermining, small and limited hematoma occurred in only one side (1% failure rate). Three smoker patients exhibited delayed wound healing, but did not require secondary surgery. All other patients demonstrated average or above average wound healing and better and early recovery.

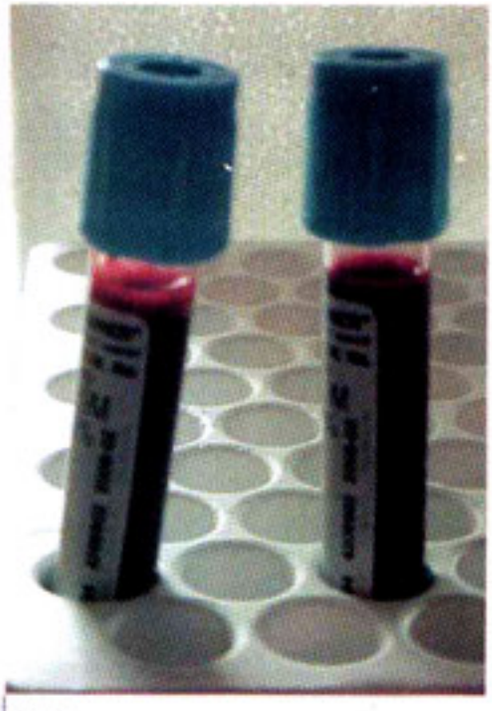
Discussion

Hematoma formation in the undermined area is a serious complication following facial surgical rejuvenation. Our purpose was to reduce the incidence of hematoma formation using pletelet rich plasma. When bleeding is not abundant, cauterization is reduced, which causes less trauma and therefore less post-op pain. Using pletelet rich plasma typically results in less swelling and bruising than traditional methods. There are no side effects. Drainage was avoided, and we have not seen any hematomas or fluid collection.

Our investigation using pletelet rich plasma has revealed a reduction (to 1%) in the rate of hematoma formation.

Conclusion

The use of pletelet rich plasma in the operative of facelift surgery under tumescent anesthesia provides a safe and effective means of hemostasis, improved wound healing and better early recovery. Additional benefits include shorter operative time in terms of cost-benefit analysis. The pletelet rich plasma and wound compression provide a mechanism for improved skin adhesion and elimination of dead space following wound closure.



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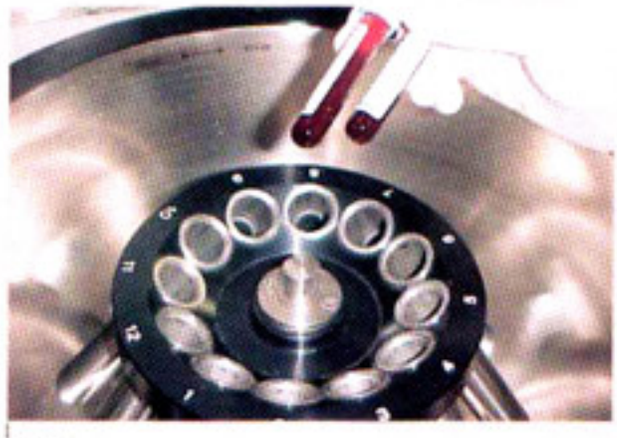

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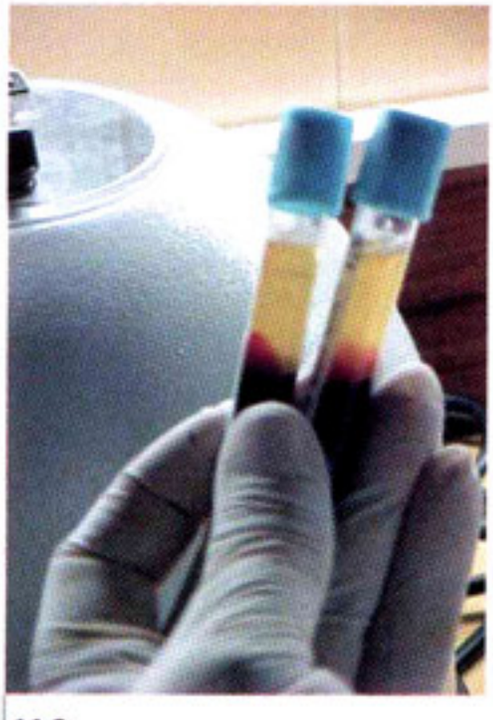
Fig. 11-1 – Patient blood.
Fig. 11-2 – Centrifuge.



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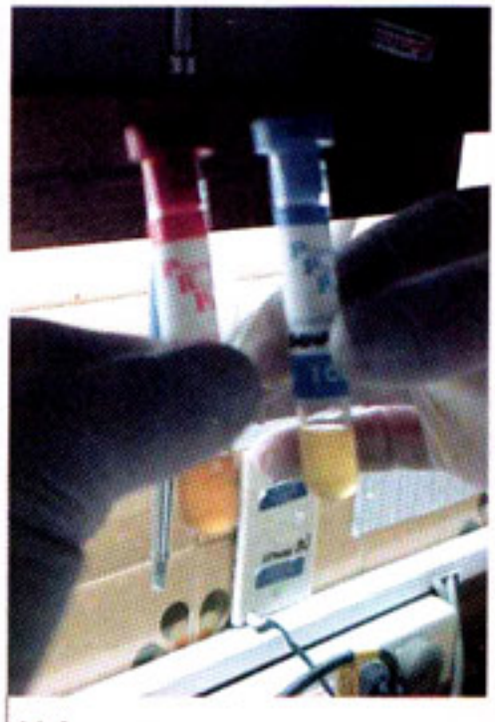

11-4

Fig. 11-3 – Division between plasma and red cells.
Fig. 11-4 – Separation in PRP and PPP.

CAPÍTULO

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New Donor Area for Eyebrow Reconstruction

Guillermo Blugerman
Diego Schavelson

In the field of hair restoration surgery, eyebrow reconstruction through micro-transplant is expanding.

In search of a good quality donor area, we dedicated to the study of different possibilities.

The hair in the eyebrows is completely different from the hair in other parts of the body. The anagen period is very short, only two or three months. As it is rarely longer than one centimeter, it is unique and we have to look for a hair that is just similar.

Our Option

In view of such difficulties we opted for the portion of the skull above the ear where the supra-auricular skin meets the temporal skull. This donor area has the following advantages:

- The hair is straight and thin.
- The hair insertion angle is similar to the receptor area.
- The amount of tissue to be resected can easily be measured.
- Easy close-up without tension.
- Scar is hardly noticeable.
- No sensitive sequels.

These were the reasons why we have used this donor area in the last ten eyebrow reconstruction surgeries, with highly satisfactory results.

Our Technique

The receptor area is marked. The donor area or areas necessary to obtain the grafts are marked according the surface to be covered.

Lidocaine solution 1% with epinephrine is locally infiltered in the borders and the base of the donor area and in the base of the receptor area.

A tumescent infiltration is made below the donor area.

The strip of skull is resected with the help of scalp and magnifiers, there is minimum transsection.

Then necessary haemostasis is practiced in the donor bed, and it is sutured in a continuum with 4/0-nylon thread.

The tissue is processed under Mantis Microscope; it is sliced into strips containing one follicular unit. The strips are then divided into one bulb grafts and then kept into a cold saline solution,

Incisions are made in the receptor area with a razor blade that was previously cut to the necessary size. Strict care should be paid to the slant or angle of such incisions on the skin so as to obtain a decent cosmetic result, as Dr. Gandelman has explained.

We usually make about a hundred to a hundred and fifty grafts per eyebrow.

To introduce the grafts we use a delicate pair of tweezers and a small needle.

Once the surgery is finished, the receptor area is covered with a lubricating jelly. When the jelly dries up, it forms a film that keeps the graft in the right position.

CAPÍTULO

55

Liposhifting para el Tratamiento de las Irregularidades Post-liposucción y Celulitis

Guillermo Blugerman
Diego Schavelson

La complicación más frecuente después de una liposucción es la grasa residual y las ondulaciones o depresiones. Hasta ahora las irregularidades post-liposucción se corregían con el autoinjerto de grasa sin grandes resultados a largo plazo. El lipofilling por si solo ha demostrado que no es la solución para rellenar este tipo de irregularidades. La lipotransferencia de grandes volúmenes no sobrevive y no es una buena solución para rellenar las irregularidades de la post-liposucción. Después de muchos años de desilusión con los rellenos grasos, el Dr. Ziya Saylan decidió movilizar la grasa del tejido circundante a la hondonada sin ninguna succión, contacto con el aire o inyección. En el liposhifting se suelta el tejido graso y se moviliza bajo la piel sin ninguna succión y sin sacar la grasa fuera del cuerpo durante el procedimiento. Finalizada la lipomovilización interna es necesario un tipo especial de vendaje y la fijación durante 5 a 7 días. Los resultados son muy satisfactorios como se puede observar en las fotografias adjuntas.

Según algunas estadísticas aproximadamente 15% de la liposucciones precisan algún tipo de corrección secundaria para relleno (lipofilling) o deben ser liposuccionadas de nuevo. Gerald Pittmann[2] refiere que un 15% precisaron "pequeños retoques" o lipofillings en consultorio, y un 9% necesitaron una segunda liposucción con o sin lipofilling.

Nuestra experiencia personal es que el lipofilling de pequeñas irregularidades de la liposucción pueden ser útil, pero nunca ofrecera un resultado a largo plazo para irregularidades grandes u ondulaciones. Después de los pocos meses una gran cantidad de la grasa inyectada desaparece y a veces los pacientes se quejan de nuevas ondulaciones en el sitio donador.

El liposhifting tal como lo ha publicado Sylan, al evitar la succión (que produce daño en el tejido aspirado), al no quitarlo fuera del cuerpo (ninguna presión, ningún contacto con el aire) y al no ser necesaria la reinyección (aplica una fuerza externa sobre el injerto graso), asegura la obtención de microinjertos grasos de excelente calidad y vitalidad.

Basados en ese trabajo comenzamos a aplicar la técnica originalmente descripta, pero buscando un resultado más predecible fue que diseñamos un set de instrumentos específicos para esta técnica tan útil.

Este set está compuesto por tres elementos básicos.

- Una espátula de punta atraumática plana y redonda para efectuar la pretunelización de la zona receptora con el mínimo sangrado. La formación de hematomas disminuye la posibilidad de "prendimiento" de la grasa.
- Un bisturí tubular (Micro Graft Fat Cutter) con múltiples orificios de bordes cortantes

distribuidos en los primeros 2 centimetros de su punta y dos orificios de mayor diámetro ubicados proximalmente que permiten la salida sin daño de los microinjertos grasos. Este instrumento similar a una canula de liposucción, no posee conección para la bomba de vacio, y funciona como un rayador de queso dentro del tejido graso, cortando y liberando microscopicas porciones de tejido adiposo en las zonas donadoras, que permanecen flotando en la solución anestesiaca.

- El tercer elemento es un rodillo para ser utilizado sobre la piel con el objeto de movilizar esos injertos dentro de los tuneles que creo la espátula en la zona receptora.

La Técnica

Este procedimiento consiste en las siguientes etapas:

- Marcado de la piel mientras el paciente está de pie.
- La anestesia tumescente.
- Creación de tuneles receptores en las zonas deprimidas.
- Liberación de la grasa con el MGFC.
- Movilización de la grasa.
- Fijación de la grasa movilizada (microporage y espuma reston para la fijación).

Marcando la piel: La marcación de la piel es muy importante. Las señales tienen que ser hechas mientras el paciente está de pie (Fig. 55-1 y 55-2) lo qué le permite al médico localizar los lugares apropiados para el liposhifting y también le da la posibilidad de controlar sus resultados. Deben marcarse los bordes, elevaciones y hondulaciones con colores diferentes. No debe olvidarse que cuando la paciente se acuesta en la mesa de operaciones los depósitos grasos que rodean la depresión pueden cambiar su posición. Deben marcarse los lugares dónde se requiere el aporte de grasa (zona receptora) con un color y las zonas aledanias desde donde se obtendra dicho tejido (zonas donadoras). La documentación por medio fotográfico es muy importante para la comparación futura.

La anestesia: Realizamos este tipo de procedimiento bajo anestesia tumescente por que la presencia de liquido facilita la movilización interna de los microinjertos. Además esto nos permite variar la posición de la paciente durante el procedimiento para una buena localización de la grasa a ser movilizada.

La técnica de tumescente: La solución tumescente se usa para aflojar el tejido graso y también para proporcionar anestesia. Después de la infiltración de la solución del tumescente, se requiere un tiempo para permitirle actuar y para que se logre una grasa óptima, que se suelte facilmente.

Tunelización: Se introduce la espátula por una pequeña incisión en la piel realizada a la mayor distancia posible de la lesión, para evitar la pérdida de injertos durante las maniobras de movilización. Se deben realizar múltiples túneles en todo el espesor de los tejidos subcutáneos que servirán de lechos receptores para los injertos adiposos.

La liberación de la grasa: La técnica tumescente ya se ha diluido y ha aflojado el tejido graso. pero ahora algo tiene que hacerse para librar el tejido graso del tejido conjuntivo. Para este propósito, introducimos por la misma incisión el MGFC que se movilizará bajo la piel en una técnica del criss-cross para producir los injertos en las zonas donadoras. Suelen ser necesarias varias incisiones para lograr buenos resultados, los movimientos laterales tienen que ser evitados, por que el tejido conjuntivo hipodérmico se dañará y además se soltará, lo que no es nuestro objetivo.

Movilización: La movilización de la grasa bajo la piel se efectua mediante maniobras de rolido sobre la piel y masajes diseccionados desde las zonas donadoras hacia las receptoras. Una cánula gruesa vieja (6-9 mm) qué no se usa más puede ser útil para este propósito. La cánula se sostiene con las manos como un rodillo de amasar. y el tejido graso bajo la piel se movilizará hacia la imperfección que se quiere rellenar. El lugar a ser llenado tiene que ser observado muy cuidadosamente y cuando la hondonada está llena y tiene el mismo nivel como la piel circundante, se busca una sobrecorrección de un 20-30% que es la cantidad de solución del tumescente que se absorberá en unas horas. Durante estas maniobras se debe

cerrar el orificio de entrada con un punto de sutura para evitar la pérdida de material de relleno.

La fijación: Después de movilizar el tejido graso y ponerlo en la zona deprimida, se realiza una fijación con una cinta microporosa para mantener la grasa en su nuevo sitio. Se aplica presión en las partes donadoras dejando sin ningún tipo de compresión las zonas receptoras. La cinta y la fijación tienen que ser quitadas y renovadas después de 3 o 4 días.

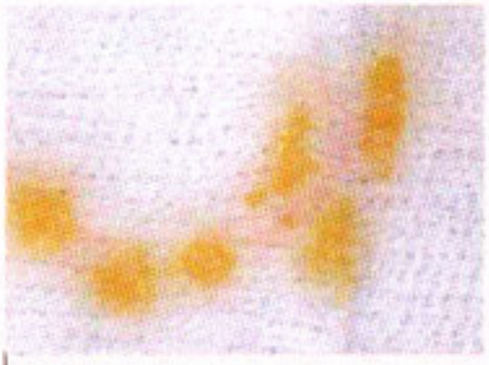
Los resultados: hemos aplicado esta técnica en más de 80 pacientes en un periodo de cuatro años. El índice de satisfacción fue cercano al 100%. Algunos casos con imperfecciones grandes tuvieron que ser tratadas más de una vez. Esto se le explicará al paciente antes de la cirugía. Se necesita un periodo de 3-4 meses entre dos tratamientos. Los resultados finales no se observaron antes de los 3-6 meses.

Las complicaciones: La complicación más común fue el hematoma en la zona receptora cuando usábamos cánulas cortantes para la tunelización, la incidencia disminuyo notablemente con el uso de la espatula. No tuvimos casos de infección. La hiposensibilidad frecuentemente se ve más que en la liposucción, pero desaparece después de unas semanas. La pigmentación por hemosiderina (pigmentación de la dermis superficial por el hierro de la sangre) se vio en 2 casos que tuvieron hematomas y permaneció de 6 a 9 meses. Utilizamos un gel con heparinoides para disminuir este riesgo.

La celulitis: En los casos de celulitis utilizamos el MGFC para producir la liberación y descompresión de la grasa atrapada y comprimida en los compartimentos superficiales del tejido subcutáneo. Este procedimiento que denominamos Cellurelease nos ha dado excelentes resultados en los diferentes grados de esta patología, combinándola con otras técnicas como la carboxiterapia.

Conclusiones: Cremos que el liposhifting es el mejor método para eliminar las irregularidades grandes de la piel y el tejido subyacente causadas por la liposucción o debidas a traumatismo y cirugías previas. Es útil tanto en las extremidades como en la pared abdominal. Es práctico y seguro. El riesgo de contaminación del trasplante graso por contacto con el aire es imposible. La fijación de la parte tratada es muy importante para estabilizar la grasa movilizada y para que esta pueda sobrevivir.

Fig. 55-1 – Espátula.
Fig. 55-2 – MGFC (Micro Graft Fat Cutter).



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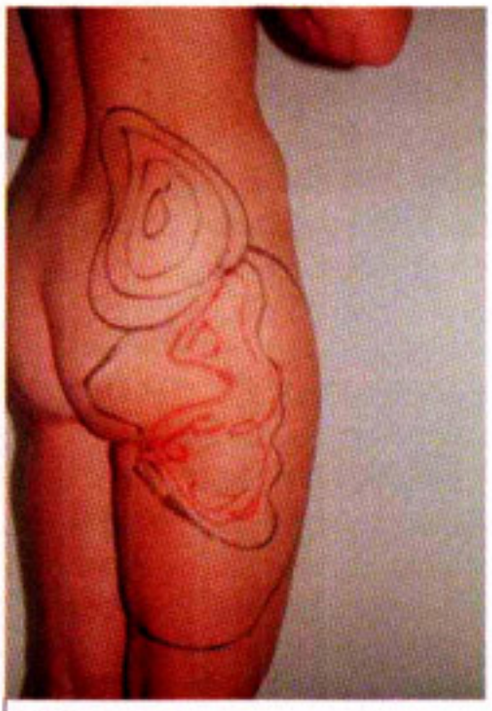
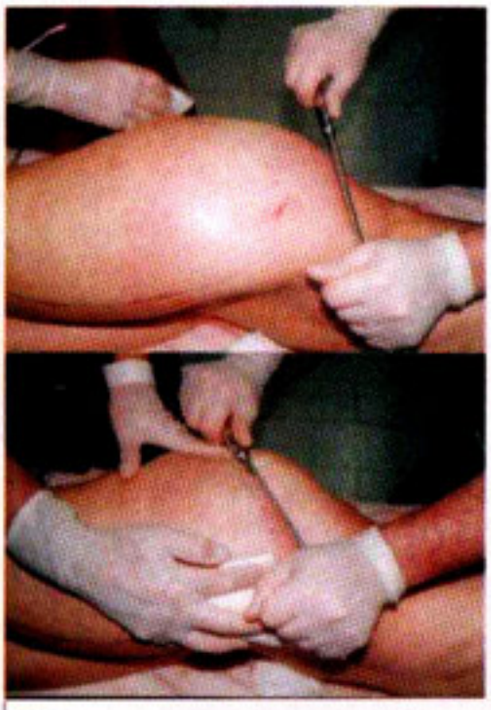


55-4

Fig. 55-3 – Microinjertos obtenidos.
Fig. 55-4 – Marcación de las zonas donadora y receptora.



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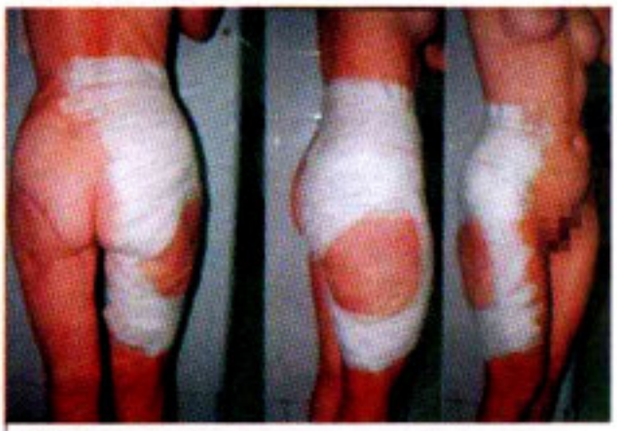
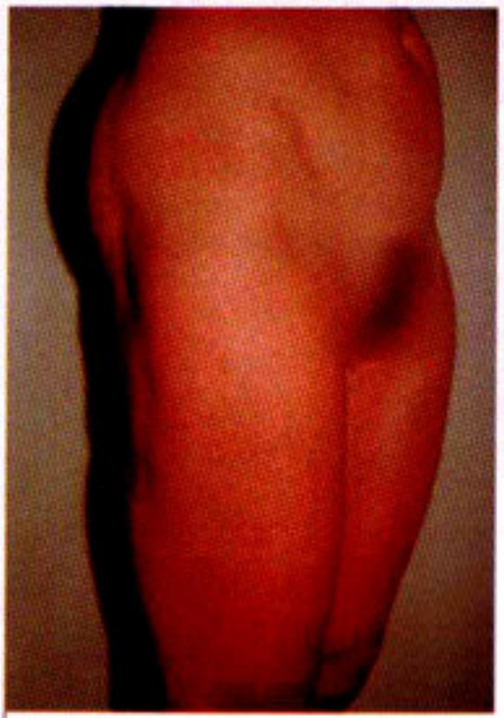
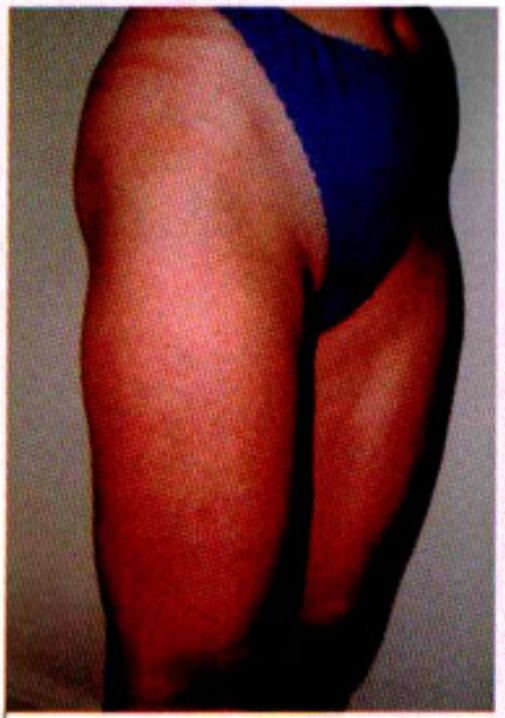


55-6

Fig. 55-5 – Maniobras de movilización.
Fig. 55-6 – Curativo selectivo.

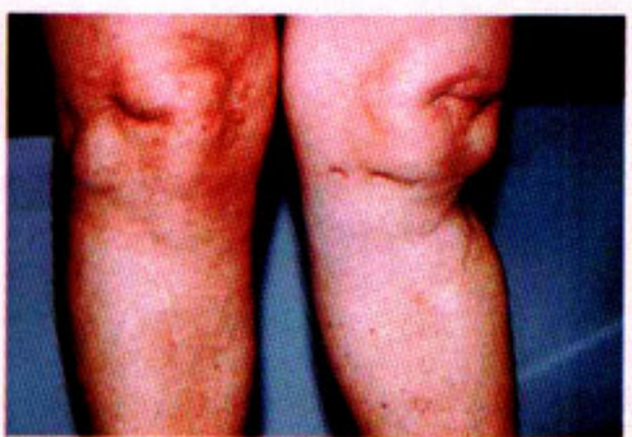


55-7A



55-7B

Fig. 55-7 – Antes y después de un liposhifting en una paciente con un defecto post-liposucción.



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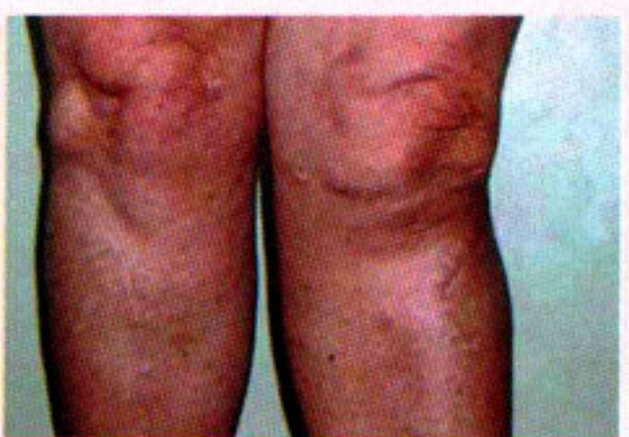


55-8B

Fig. 55-8 – Antes y después de liposhifting en secuela postquirugica de cirugía ortopédica.

Gynecomastia: Reduction by Laserlipolysis and Transmammilar Adenectomy

Diego Schavelson, Guillermo Blugerman, Gabriel Bonesana, Augusto Ponton, Anastasia Chomyszyn

Abstract

The authors present their experience in the treatment of mixed gynecomastia. The technique includes tumescent anesthesia, laserlipolysis, and a new and innovative access to the glandule tissue through a cross like transmammilar incision. This shows the possibility of resecting large portions of glandule with minimal scar sequelae.

Introduction

MALE BREAST ENLARGEMENT is a frequent cosmetic defect in the Argentinean population. There are three types of gynecomastia: fatty or lipomasty, with fat as the predominant tissue; glandular, with the mammary gland as the predominant tissue; and mixed; in which both elements appear in equal proportions.

Tumescent liposuction has been used for several years in the treatment of fatty and mixed gynecomastia. In 1994, we created the term adenosuction[1] to describe those cases in which mixed gynecomastia had to be treated with the use of cutting (Becker) cannulas.

We have recently noticed a significant increase in the number of patients with high consistency mixed or glandular gynecomastia due to the use of anabolic products containing steroids. Treatment with extraction by suction was very difficult and painful in these cases. We therefore sought an alternative treatment that would enable us to solve this problem leaving only minimal scarring.

History

The various treatment access methods we have found in the medical literature leave different type of scars,[2,3] which are unacceptable for this type of patient (bodybuilders in general), whose main occupation is taking care of and showing off their body.[4] These patients also regularly request hair removal on the pectoral area, thereby eliminating the usual camouflage of scars by the periareolar hair. Based on this observation, we rejected the use of periareolar, transareolomammilar, and submammary fold access. The endoscopic approach suggested by some authors is expensive and time-consuming.[5,6]

Materials and Method

After performing clinical studies (laboratory tests, mammography, etc.) to rule out any pathological cause of gynecomastia, we use the following surgical treatment of this cosmetic problem.

The center of the tissue to be resected is under the nipple, and breastfeeding capacity need not be preserved in a man (as in the case of women). Given also that the skin in the areola is much more elastic than in the rest of the body skin, we decided to access the gland through a tiny incision on the nipple (Fig. 56-1). Thorough this incision we have been able to remove large amounts of mammary tissue, leaving only a minimal scar.

Surgical Technique

With the patient standing, we make preoperative markings on his breast to determine the proportion and the relative limits of both types of tissue (fat and glandular). The patient is placed in the supine position and, before surgery, administered the following premedication intravenously: 0.4 mg Fentanyl, 2.5 mg Midazolan, and 5 mg Metocloparmide. The premarked area is infiltrated with tumescent anesthesia[8] composed of saline solution 1000 ml, lidocaine 2% 60 ml, molar bicarbonate 30 ml, and epinephrine 1 ml.

This solution in warmed at body temperature using a microwave oven. Infiltration is performed through a microcannula connected to a peristaltic pump B&S type[7] at 10 rpm. Infiltration starts from the anterior axillary line towards the bottom of the breast, infiltrating the whole tissue from the bottom to the surface (Fig. 56-2). We generally introduce 500 ml in each breast.

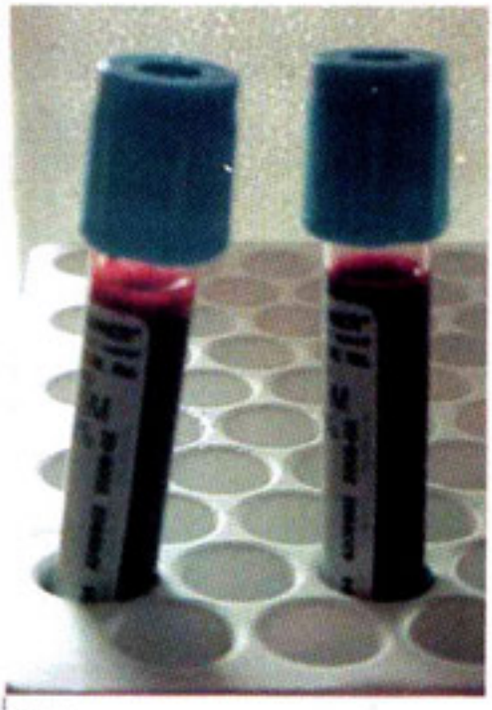
After the bilateral infiltration, we proceed to the laser lipolysis of the fat tissue.[6] We use a device Smartlipo (Deka, Calenzano, Italy) emitting an Nd: YAG laser at 1064 nm wavelength in a pulsed manner, at a frequency of 40 min with a 6W potency.

The 300 mm fiberoptic leads the laser ray to the inside to the fat tissue through a 1 mm needle guide. As it advances, the laser produces selective photohyperthermia that acts on the adipocytes by breaking their membranes, and producing a fatty emulsion on the area in a process that sounds like bursting popcorn. We can track the needle tip at all times due to the transillumination effect of the He:Ne laser, noticeable through the skin (Fig. 56-3). The laser step takes about 10 min in each breast. We then drain the resulting oily emulsion through a 4 mm Mercedes tip cannula, mounted on a vibrating handle at 1500 rpm. Using vibrating cannulas is most convenient because it allows for much finer work and reduces pain (Fig. 56-4).

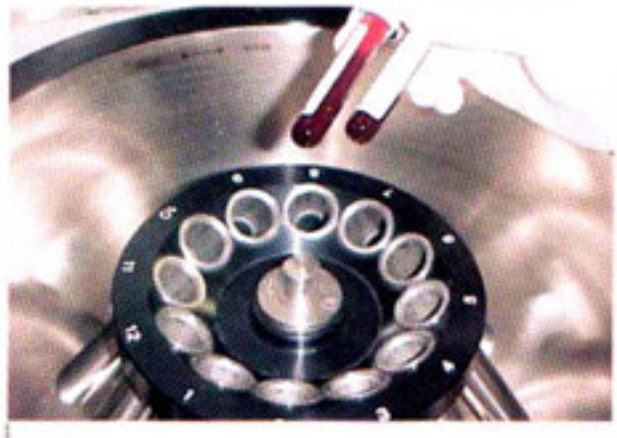
After removing the rest of the fatty tissue, it is easy to locate the remaining mammary glandule.

Using a microsurgery scalpel 65 mounted on a specially designed handle, a cross-like incision is made on the nipple (Fig. 56-5). Four well irrigated triangular flaps are thus obtained, and must be everted with traction points to prevent damage during glandule dissection. The whitish and pearly glandular tissue, which will be easily identified through the incision, is taken up with a Gillies hook or a Halsted forceps. Exercising traction on the hook, the glandule dissection process starts in the plane that joins it to the subcutaneous tissue (Figs. 56-6 e 56-7). After the glandule is liberated, it is subdivided into small portions to be removed later through the small incision. All maneuvers should be very delicate to prevent damage in the areola skin and to make sure that no devitalized tissue remains inside the newly formed cavity. It is most important to keep sufficient tissue both in the subareolar and the prepectoral plane to avoid retraction and the possible adherence of the skin to deeper planes (Figs. 56-8 e 56-9).

In most cases the only hemostatic maneuver necessary elastic compression in the immediate postoperative period. The incision is sutured joining the four triangular flaps in the middle; a flat dressing is applied, then elastic compression is applied, and the patient is instructed to relax for 24 h (Figs. 56-10A e B).

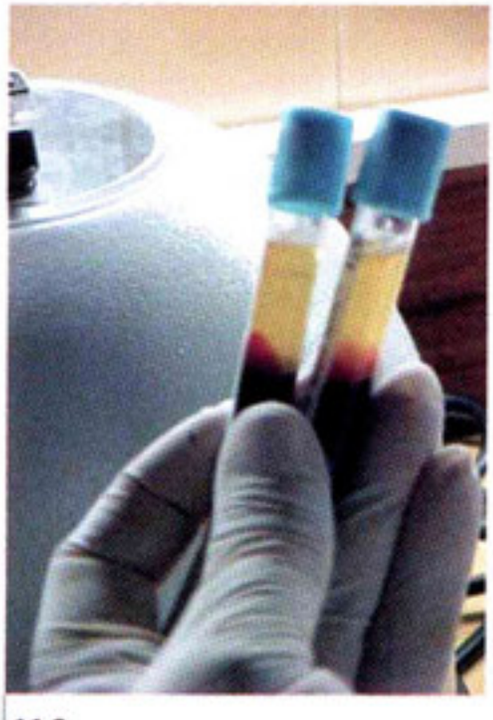


11-1



11-2

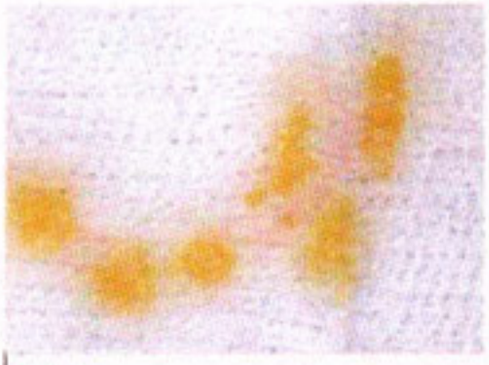
Fig. 11-1 – Patient blood.
Fig. 11-2 – Centrifuge.



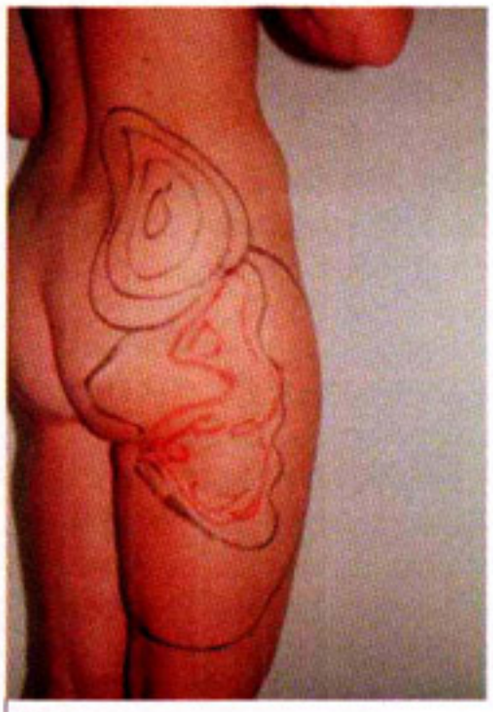
11-3

11-4

Fig. 11-3 – Division between plasma and red cells.
Fig. 11-4 – Separation in PRP and PPP.

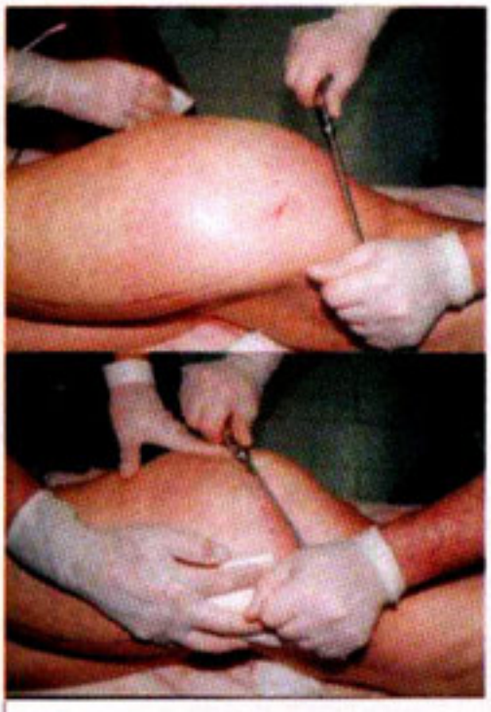


55-3

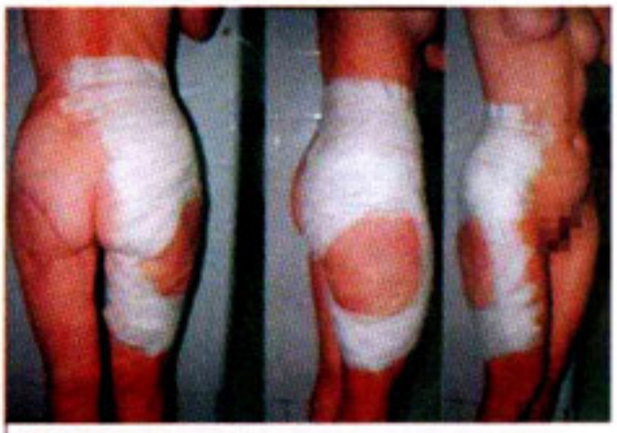


55-4

Fig. 55-3 – Microinjertos obtenidos.
Fig. 55-4 – Marcación de las zonas donadora y receptora.

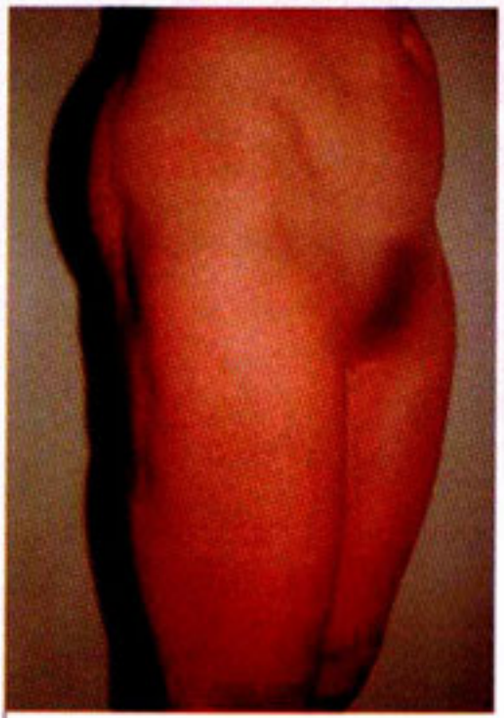


55-5

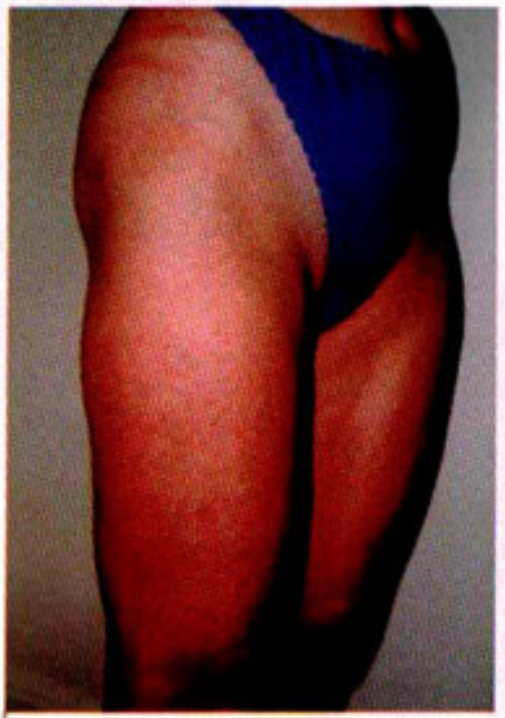


55-6

Fig. 55-5 – Maniobras de movilización.
Fig. 55-6 – Curativo selectivo.

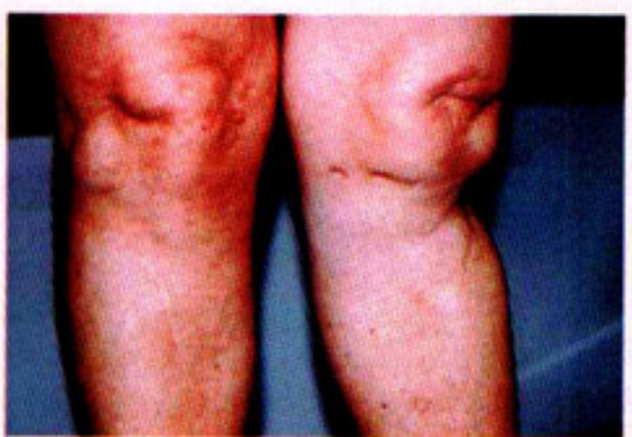


55-7A

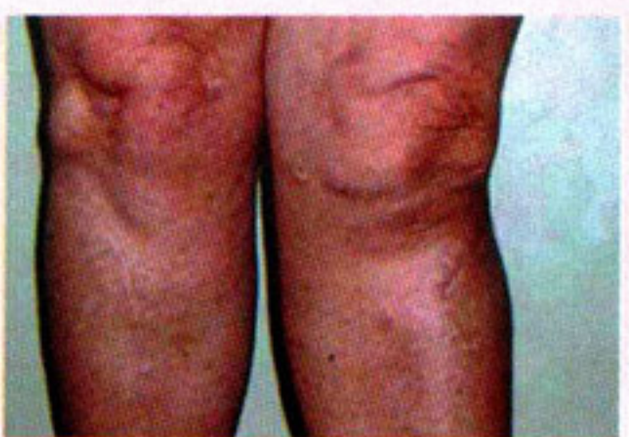


55-7B

Fig. 55-7 – Antes y después de un liposhifting en una paciente con un defecto post-liposucción.

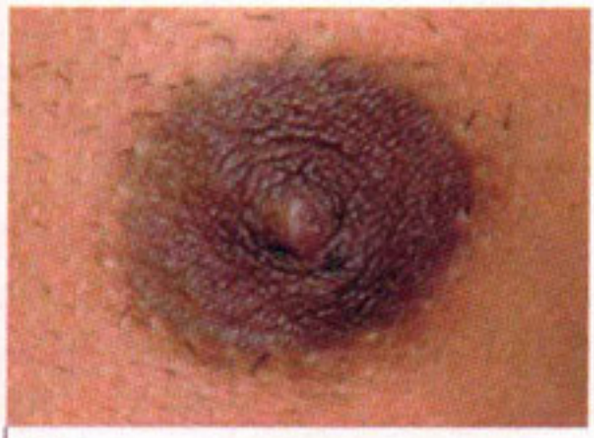


55-8A

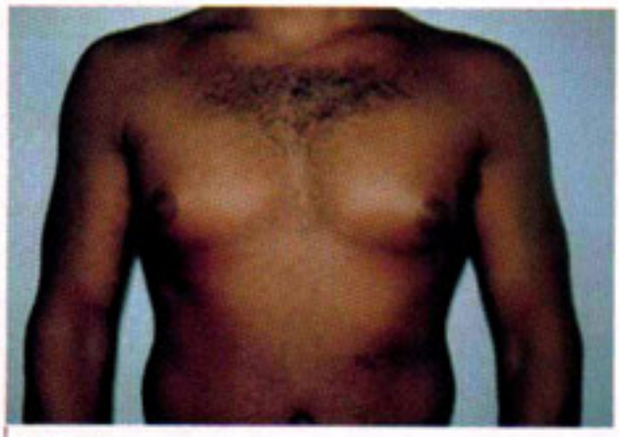


55-8B

Fig. 55-8 – Antes y después de liposhifting en secuela postquirugica de cirugía ortopédica.

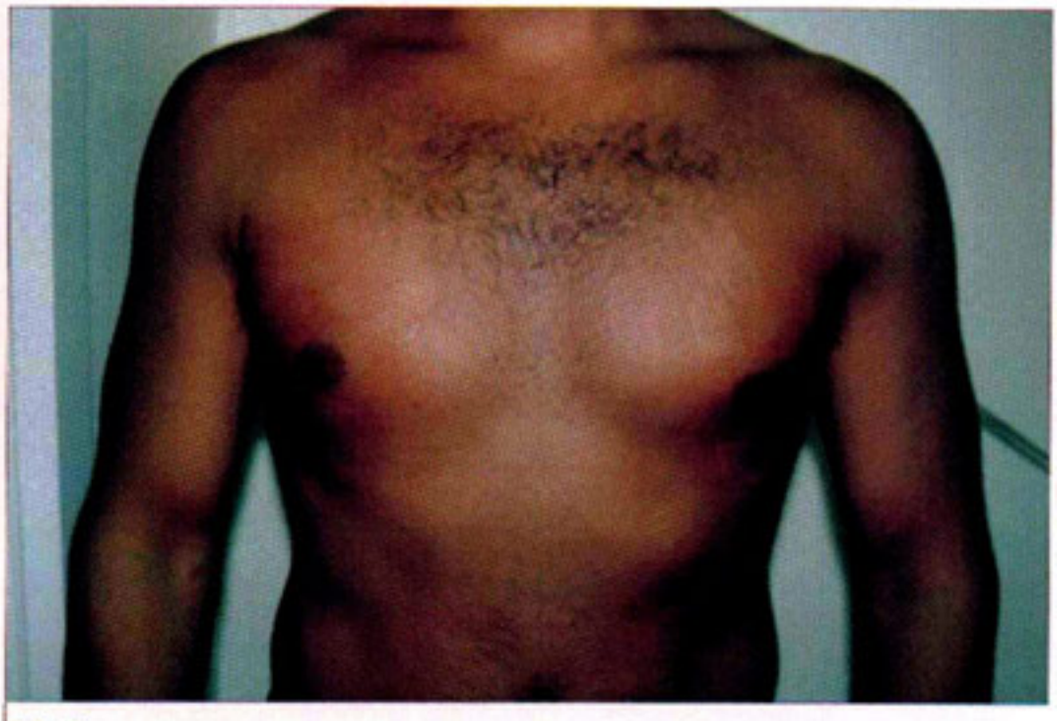


56-11



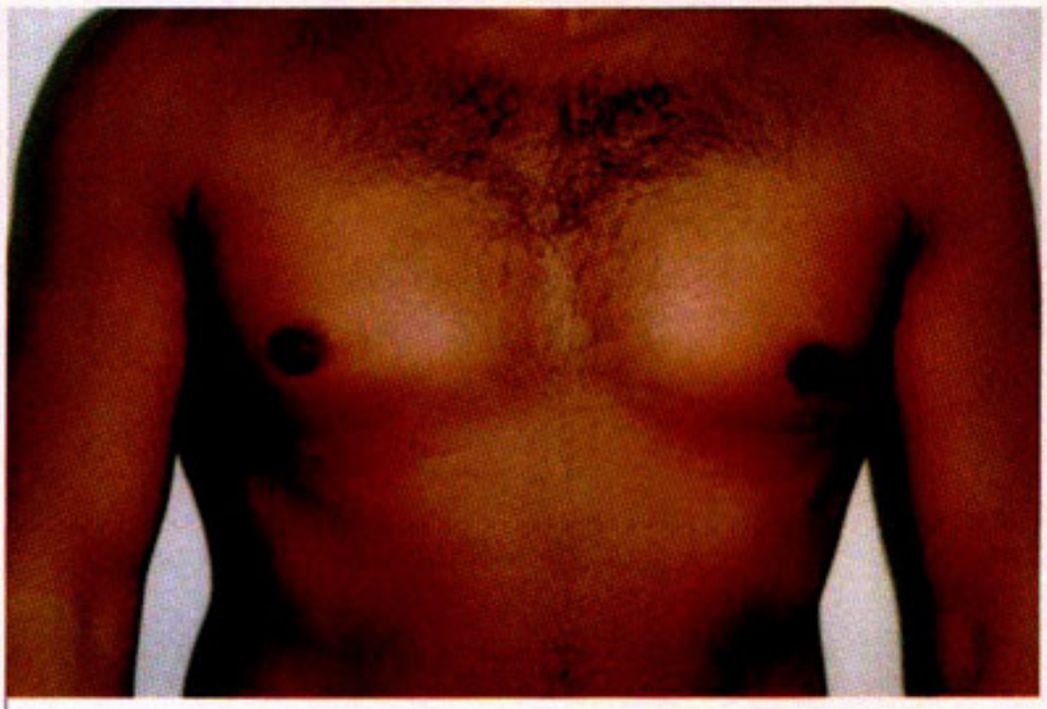
56-12

Fig. 56-11 – View of the scar after six months.
Fig. 56-12 – Preoperative view.



56-13

Fig. 56-13 – View of patient 24 hours after surgery.



56-14

Fig. 56-14 – Postoperative view six months after the surgery.

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