

Abstract

COMPLICATIONS AND HOW TO PREVENT THEM : LIPOSUCTION

Sri Lestari

Dermatology-Venereology Department of Dr M Djamil Hospital, Faculty of Medicine,
University of Andalas, Padang, West Sumatra, Indonesia

The majority of medical and surgical complications from tumescent liposuction, can be avoided by comprehensive perioperative patient evaluation. Aesthetic complication can be minimized by proper patient selection, patient education, and good technique.

A comprehensive preoperative consultation including a screening questionnaire is used to identify patients who are appropriate candidates. During the consultation, the risks, goals, anticipated resulted and expected postoperative course are discussed. The tumescent technique was invented to allow liposuction more safely. The tumescent technique has virtually eliminated all complications. By a good technique, a large volume of lidocaine with epinephrine can be administered in dilute concentration into the subcutaneous, resulting in minimal blood lidocaine levels, painless, greatly patient comfort, minimal blood loss, decrease patient morbidity and expense, and elimination of the risks of general anesthesia. Liposuction is characterized by rapid patient recovery, safe and no deaths were reported.

COMPLICATIONS AND HOW TO PREVENT THEM : LIPOSUCTION

SRI LESTARI

Head of Dermatology-Venereology Department, Dr M Djamil Hospital,
Faculty of Medicine, University of Andalas,
Padang, West Sumatra,
Indonesia

Complications :

- Oedema, bruises, dysesthesia, and discomfort → are not complications → but part of the procedure.
- Minor pains → part of the technique
- Feeling faint when getting up the next day → due to a stretch reflex of the operated tissues
- Surgical complications → seldom :
 - hematoma, seroma
 - pulmonary embolism and fat embolism
- Infections → very seldom → aseptic techniques
Preoperative antibiotics

Liposculpturing :

- Has a very low rate of complication
- Due to errors, or beginners

Pre-operative errors

Error In patient information

How important the operation is :

- About the potential complications
- About oedema, bruising, dysesthesia, delayed menstruation or temporary increase in breast size (the adipose tissue is a large reservoir of oestrogens and the balance is disturbed)
- Skin dimples on the buttocks, stretch marks and cellulite will not disappear after the operation
- The incision is small but the wound is huge

Pre-operative errors

Errors in examination :

- Pseudosaddle bags, umbilical hernia not diagnosed
- Rupture of a previous scar (one case of death has been reported)
- Failure to identify allergy to drugs, bandaging tape or iodized alcohol
- Operating on heavy smokers

Recommendations :

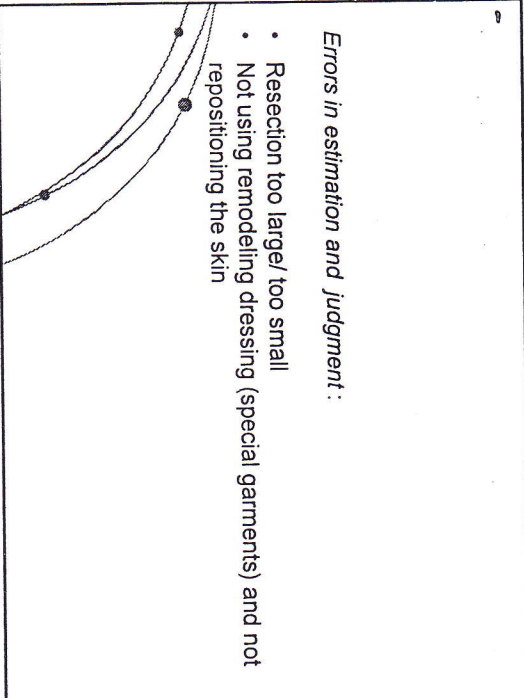
- Do not operate during the menstrual cycle because of increased bleeding and anxiety
- Do not operate on a patient poorly prepared psychologically
- Do not do a too extensive resection of adipose tissue at one time

Errors in equipment :

- Use only blunt, no sharp and small instruments
- One of the great advantages of the syringe → the operator can control his/her work much more easily than with the machine

Errors in strategy and technique :

- Fan-shaped work → fan-shaped result
- Bicycle spoke wheel work → bicycle spoke wheel result
- Surface defects due to too overly superficial work → result in surface irregularities
- Use of sharp instruments
- Moving the cannula horizontally
- Irregular work → will give an irregular result
- Touching the tip of the cannula with your fingers



Errors in estimation and judgment :

- Resection too large/ too small
- Not using remodeling dressing (special garments) and not repositioning the skin

Aesthetic complications : (continued)

- Flat buttocks → too much has been resected in the bermuda short triangle
- "Waves" in the saddle bag area → when not enough has been resected from the hips and buttocks when the patient had pseudosaddle bags or complex saddle bags
- Washboard deformity in the abdominal area → when there is poor skin tonicity or a bad pre-estimation

Aesthetic complications :

→ Due to incorrect diagnosis, incorrect selection, incorrect pre-estimation, incorrect concept, incorrect instrument, incorrect technique, poorly applied dressings

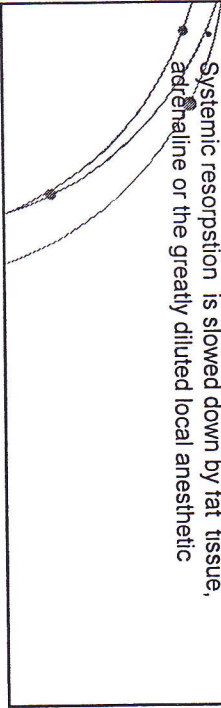
- Residual adiposites, craters, surface irregularities due to irregular work, recesses (waves) and elevations (decreased since the syringe has come into use)
- Skin irregularities → poor skin tone (due to solar elastosis)
- Checkerboard deformities → lack of PMU
- Sawtooth indentations → fan work
- Asymetry → unequal resection (seldom seen since the syringe has come into used)

Complication due to blood loss :

- Hypotention and shock → any resection dealing with liters
- The fluid and electrolyte balance is indispensable
- Prescribing marital postoperative therapy can avoid a long convalescence

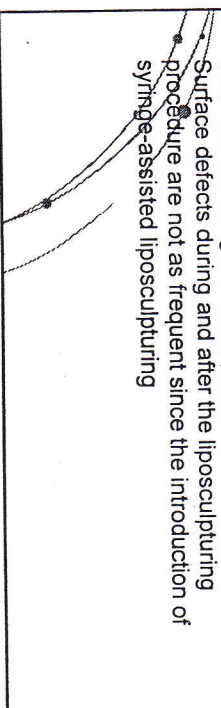
Complication due to anesthesia :

- due to the large amount of local anesthesia used → rarely :
- Local anesthesia is given in stages for each area to be operated on .
- Systemic resorption is slowed down by fat tissue, adrenaline or the greatly diluted local anesthetic



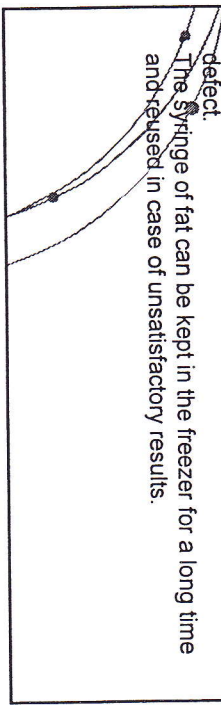
Treatment of surface defects post operatively :

- Small instruments should be used to treat surface irregularities
- Fat mounds should be reduced, and this same fat should be injected into depressed areas after a wide peripheral mesh undermining has been performed
- Surface defects during and after the liposculpturing procedure are not as frequent since the introduction of syringe-assisted liposculpturing

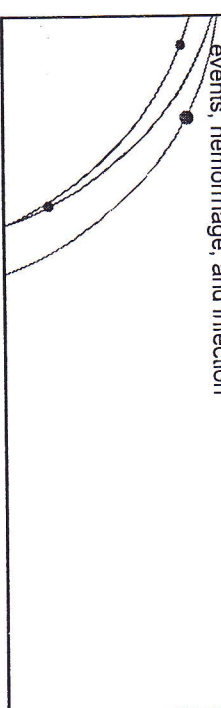


Treatment of per-operative complications

- If too much adipose tissue has been removed, the previously extracted fat can be partly re-injected.
- Lipo re-injection is routinely used to give more homogeneity to the treated defect area.
- A delay of six months is necessary before correcting the defect.
- The syringe of fat can be kept in the freezer for a long time and re-used in case of unsatisfactory results.



COMPLICATION → Leading causes of liposuction-related deaths includes : pulmonary embolism, a penetration injury to an abdominal organ, anoxia, pulmonary edema, acute cardiac events, hemorrhage, and infection



Systemic complication (cont.)

1. Death

The dermatologic literature has not reported death from liposuction surgery; plastic surgeons, have a record of an extremely high death rate. The causes of death : pulmonary emboli, perforated viscus, lidocaine toxicity, multiple procedure in one session, thus prolonging operation time

→ The key to safety lie in patient selection, conservative goals for total aspirate, short operative time, and proper technique

Systemic complication (cont.)

2. Infection

Death revealed inpatients undergoing liposuction and abdominoplasty were due to massive infection. Infection could resulted from contamination of the operative area

→ The use of proper techniques, sterile fields, and prophylactic per-operative antibiotic agents is the best approach to avoiding infection

Infection is extremely rare, possible due to the antibacterial effect of lidocaine and will increase when buffered with sodium bicarbonate

Systemic complication (cont.)

3. Fat emboli

Fat emboli to be responsible of deaths almost thrombi as the cause of pulmonary embolus. It was most commonly reported in cases where liposuction was combined with an open proseedure such as abdominoplasty

4. Perforation of abdominal viscera.

Although often blunt, the cannula may penetrate deep tissue. They can be approached from various angles to remove the fat adjacent to them. If the cannula easily sliders under the scar when it is gently probed, liposuction can be safely done underneath the scars

Systemic complication (cont.)

5. Blood loss

Blood loss is greatly minimized with the tumescent technique

6. Lidocaine toxicity → is potential complication with tumescent technique

Anoxia → is a known complication of systemic anesthesia → has caused death. But virtually unknown with infiltration local anesthesia

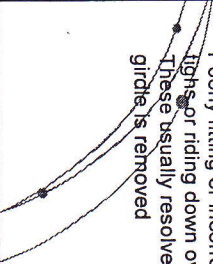
LOCAL COMPLICATION

9

1. Contour irregularities: persistent irregularities such as skin dimpling, depressions, divots or dents, waviness, asymmetry, redundancy → require a second corrective procedure

Depressed grooves → inappropriate positioning of compression or girdle devices

Poorly fitting or incorrectly worn girdles pulled too high over the thighs or riding down over the belly during postural changes
These usually resolve → spontaneously over time after the girdle is removed



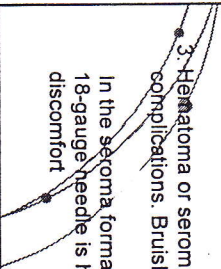
LOCAL COMPLICATION

2. Effect of weight gain on body contour. In the breasts and buttocks, new weight gain may preferentially localize as fat storage areas are reduced or eliminated through liposuction.

Although liposuction does not appear to predispose a patient to weight gain → weight control is a factor that should be discussed with the patient

3. Hematoma or seroma are uncommon and very manageable complications. Brushing is seen in almost all cases.

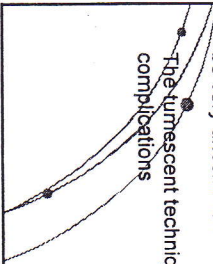
In the seroma formation → aspiration and evacuation with an 18-gauge needle is helpful to expedite healing and alleviate discomfort



If the improvement is not to the patient's satisfaction → massage for 6-8 weeks may be beneficial

If no improvement, a touch-up procedure comprising of serial microlipoinjections to level off the depression can be performed.
→ A small instruments are used, significant irregularity should be very uncommon

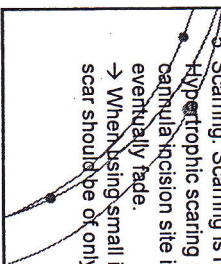
The tumescent technique has virtually eliminated all other complications



LOCAL COMPLICATION

4. Paresthesia, is a common sequela of liposuction. It is caused by the negative pressure of the vacuum pump and the blunt traumatization of cutaneous nerves.
→ resolves spontaneously but may persist for 6 months to a year.

5. Scarring. Scarring is most often a result of external forces. Hypertrophic scarring or keloid formation can occur at the cannula incision site in the scar-prone individuals → will eventually fade.
→ When using small instruments with the tumescent technique, scar should be of only minor importance



LOCAL COMPLICATION

6. Hypopigmentation and hyperpigmentation. Abrasion from the garment which may discolor.
→ the discoloration will be eventually fade
7. Asymmetry. It is important to discuss any pre existing asymmetries with the patient and have pre-operative photograph
8. Superficial skin necrosis. Usually occurs from the overlying tape, friction from poorly fitting compression garments, liposuction performed in the superficial plane in a large contiguous surface area, the use of ultrasound-assisted liposuction in the superficial plane

Conclusion :

- Good selection of patients
- Good operative concept as is criss-crossed work
- It is better to do little than too much → can come back to the treated area if too little has been removed
- The most important think → is not what you remove but what you leave and how you leave it

LOCAL COMPLICATION

9. Infection is extremely rare, possible due to the antibacterial effect of lidocaine and will increase when buffered with sodium bicarbonate
10. Abdominal perforation. They can be approached from various angles to remove the fat adjacent to them.
If the cannula easily slides under the scar when it is gently probed → liposuction can be safely done underneath the scars

Conclusion :

- Learn how to avoid complications and to treat them
- Do not give blood during the operation unless it is an absolute emergency → make the patient bleed by raising the blood pressure or because of the sodium citrate in the blood flask
- Hypotension is a defense reaction in the case of these major undermining → blood should be done after the operation when the bandaging has been done and natural hemostasia is ensured