

Procedures for Obesity by Plastic Surgeons.

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Abstract:

Treatment of Obesity is always indirect because there is a generalized fat collection. Many surgeons have devised different methods which are either direct or indirect.

Indirect methods: Are abdominal procedures where the size of stomach is reduced by different surgical methods and hence the size of stomach, so the absorption of food becomes limited.

Direct Methods: Are insufficient to control the obesity; an attempt is made to show some of the procedures which can be used for not the generalized obesity but for localized collection of fat volumes.

Plastic surgeon has devised many such procedures one of these and most common is liposuction. Liposuction has undergone lot of variations, it has started in 1983 and there are five conventional methods of liposuction. The commonest technique now a days is vibro liposuction with tumescent technique:

Procedures for obesity by Plastic Surgeons:

- Simple Wedge Excision for Lymph dystrophic Tissues of Limbs.
- Reduction Mammoplasty.
- Abdominoplasty.
- Mastopexy.
- Dermolipectomy after Massive Weight Loss.
- Surgical Lipectomy (Belt Lipectomy).
- Ultrasonic Liposuction (early 1990).
- Vibro liposuction (1997).

Reduction Mammoplasty.



Abdominoplasty.



Mastopexy.



Liposuction.



Liposuction what's special: One of the most commonly performed cosmetic surgery operation. Relatively easy to perform however extremely difficult to get perfect result. Therefore, revision rate is approximately 20 – 30% (Grazer F.M.) and 10-15% with modern techniques

Liposuction

Causes of fat deposition

- Genetic – saddle bags

- Environmental – diet/exercise
- Age related – fat: muscle

Liposuction: Not a treatment of obesity. Indications for Liposuction

- Spot fat removal
- Contouring
- Finessey sculpturing
- Debulking

Evolution of liposuction

- 1983 - Conventional liposuction (SAL)
- 1985 - Syringe liposculpture
- 1987 - Tumescant technique
- 1990 - Ultrasonic Liposuction (UAL)
- 1997 - Vibroliposuction (VAL)

Tumescant Infiltration (Klein – 1987) Most significant development

- Decreased blood loss
- Less bruising
- Fluid plenishment
- Enlarged subcutaneous space

Tumescant Formula

- Normal Saline/Ringer Lactate =1 Litre
- Lignocaine 2% = 25 mls
- Adrenaline 1:1000 = 1 ml
- NaHCO₃ 8.4% = 2.5mls
- (to neutralise acidity of Lignocaine)
- Lignocaine 0.05%
- Adrenaline 1: million
- Use warm fluid - never chilled

Tumescant Volumes: To achieve levels of 1.5 to 2 ug/ml

- 50 kg 3.5 L
- 60 kg 4 L
- 70 Kg 5 L
- 80 kg5.5
- 90 Kg 6 L
- 100 kg 7 L

Infiltration Technique: 2 – 3 mm cannula or spinal needle

- Roller pumps (5 – 6 L can be infiltrated in 15 – 20 minutes)
- Pressurised infusion bags
- Syringe

End point of infiltration

- Look – swollen & indurated

- Feel – firm to hard
- Fountain sign – ‘fully tumescent’
- **Fat: Fluid**
- Fat = 80%
- Fluid = 20%

Ultrasonic Liposuction early 90’s

Advantages

- Gentler procedure
- Good skin retraction
- Smoother skin
- Less operator fatigues

Disadvantages

- Very expensive
- High maintenance cost
- Very slow
- Risk of thermal injuries

Power Liposuction 1997: VIBROLIPOSUCTION

benefits of ultrasonic liposuction + speed of conventional liposuction

- Uses Compressed air
- Vibration of cannula
- Lysis of adipose tissue
- Aspiration of emulsified fat

Advantages

- Less swelling
- Less bruising
- Quicker recovery
- Smoother skin
- Less postoperative pain
- No heat liberation
- Inbuilt security system
- Less operator fatigues

Complications of Liposculpture

- Anaesthetic/drug related
- Scars
- Infection
- Excessive swelling & bruising
- Excessive pain and tenderness
- Surface irregularities
- Induration
- Residual skin excess
- Asymmetry
- Under correction/ over correction

Conclusion:

At present, Vibroliposuction combined with Tumescant infiltration and deep i/v sedation appears to be the best option available for liposculpture.

References:

1. Coleman WP, 3rd, Glogau RG, Klein JA, Moy RL, Narins RS, Chuang TY, et al. Guidelines of care for liposuction. *J Am Acad Dermatol.* 2001; 45:438–47.
2. Lawrence N, Coleman WP. Liposuction. 2002; 47:105–8.
3. Robles-Cervantes JA, Martinez-Molina R, Ca´rdenas-Camarena L. Heating infiltration solutions used in tumescent liposuction: Minimizing surgical risk. *Plast Reconstr Surg.* 2005; 116:1077–1081.
4. Khan UD. Risk of seroma with simultaneous liposuction and abdominoplasty and the role of progressive tension sutures. *Aesthetic Plast Surg.* 2008; 32:93–99; discussion 100.
5. Lawrence N, Coleman WP., 3rd Liposuction. *Adv Dermatol.* 1996; 11:19–49.
6. Cavallini M, Baruffaldi Preis FW, Casati A. Effects of mild hypothermia on blood coagulation in patients undergoing elective plastic surgery. *Plast Reconstr Surg.* 2005; 116:316–321; discussion 322–323.
7. Cooter R, Babidge W, Mutimer K, et al. Ultrasound-assisted lipoplasty. *ANZ J Surg.* 2001; 71:309–317. 7. Heller JB, Teng E, Knoll BI, Persing J. Outcome analysis of combined lipoabdominoplasty versus conventional abdominoplasty. *Plast Reconstr Surg.* 2008; 121:1821–1829.
8. Skouge JW. The biochemistry and development of adipose tissue and pathophysiology of obesity as it relates to liposuction surgery. *Dermatol Clin.* 1990; 8:385–93.
9. Johnson D, Cormack GC, Abrahams PH, Dixon AK. Computed topographic observations on subcutaneous fat: Implications for liposuction. *Plast Reconstr Surg.* 1996; 97:387–96.

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