Body Contouring - Post-bariatric Massive Weight Reduction

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Introduction

There are increasing numbers of bariatric surgeries performed worldwide in weight reduction per year. It is not surprising to see a series of new body disfigurement conditions requiring correction. The traditional abdominoplasty techniques cannot solve all the new problems. The post-operative care for body contouring in post-massive weight reduction patients is expected to be long and challenging. New terms such as belt lipectomy, lower body lift, panniculectomy and truncoplasty are introduced for this new pathology.

There are a number of deformities of the body, namely the abdomen, back, buttock, thigh and upper arm. Body contouring surgery is deferred until the patient’s weight is stable, generally at least 1 year after bariatric surgery. Surgeries are needed in a planned and scheduled sequence. Usually the circumferential abdominal excess skin is the first (Fig 1 & 2) to be addressed, followed by other deformities as required. Brachioplasty and mastopexy are done in the same stage. The medial thigh and back are done in separate operations. Scar revision for the previous surgeries may be performed during subsequent body part surgery.

The risk of associated nutritional deficiency needs to be addressed or else this will severely affect the wound healing process. Seroma and wound dehiscence are the most commonly encountered post-operative complications. Raised Body Massive Index at the time of body contouring surgery is strongly correlated with these complications.

Procedures

Panniculectomy/ Circumferential Abdominoplasty/ Lower Body Lift, Belt Lipectomy

After losing over 100lbs with bariatric surgery, the dependent tissue creates problems of its own. Skin irritation under the folds of redundant tissue is common. If the weight reduction is not too much, sometimes panniculectomy (excision of the redundant lower abdominal skin) is good enough. For more lateral redundancy, sometimes a vertical incision after an "elliptical spade-shaped excision" is necessary for the better shaping of the waist tissue. The overall shape of the body is more important than the presence of a scar over the abdomen.

Massive weight loss resulting in back tissue excess and hence there is a greater need to extend the excisional component of traditional abdominoplasty to the lateral sides and back, eventually leading to a circumferential resection. There are a number of names to describe the procedure: circumferential or extended panniculectomy, central body lift, lower body lift and belt lipectomy.

Belt lipectomy consists of several operations: abdominoplasty, lateral thigh lift, buttocks lift, abdominal wall tightening and liposuction. It is an extensive surgery involving multiple intra-operative turnings. Pre-operative planning is of utmost important. Understanding of the extensiveness of the surgery and significant risks associated are equally important to patients and surgeons. However in order to improve the lower body contour after massive weight loss, belt lipectomy is the most efficient way to remove the excess skin and fat. Contra-indications for belt lipectomy...
include significant medical or psychiatric problems. The circumferential extensive tissue excision would put a great stress to the heart-lung function.

**Back Contouring**
Depends on the amount of weight loss, there are usually 4 folds at the back namely the breast fold, scapula fold, lower thoracic fold and hip fold (Fig 4). The former two folds are removed in the same session with mastoprexy and the latter 2 are removed during the belt lipectomy. Dehiscence is of major concern in the post-operative period. Pre-operative markings must give enough freedom for the patient to flex the back, yet at the same time remove as much redundant skin as possible.

**Brachioplasty**
Massive weight reduction will cause redundancy of the upper arm skin and ptosis. Brachioplasty is to re-shape the upper arm, sometimes the forearm by liposuction and skin excision. The procedure itself may be associated with poor scar formation and other complications such as seroma, paresthesias and wound dehiscence. The incision is placed in the bicipital groove and hence the resultant scar would be hidden when the arm is adducted.

**Mastoprexy**
Breast ptosis is apparent after massive weight reduction. Men would suffer from the same deformity known as pseudogynecomastia. It is characterised by increased subareolar fat without enlargement of the breast glandular component. The treatment (Table 1) depends on the amount of excess skin, lateral skin roll, position of nipple-areolar complex (NAC) and infra-mammary fold (IMF). Treatment modalities include liposuction, skin excision, pedicle nipple reconstruction and free-nipple graft reconstruction.

Mastoprexy is often carried out with brachioplasty in females. The combined procedure can often give a better result to both deformities.

**Conclusion**
Massive weight reduction after bariatric gives rise to a series of new challenges to plastic surgeons. The redundant inelastic skin hangs over various parts of the body causing cosmetic and skin problems. The expectation of body shape changes and body contouring surgeries should be introduced to patients at the time of bariatric surgery. New procedures such as belt lipectomy has been an evolvement from traditional abdominoplasty. Combination and modifications of various body parts with contouring surgeries such as brachioplasty, back lipectomy and mastoprexy are necessary to attain an optimal body shape. They are extensive surgeries. Both the surgeons and patients need to understand clearly the operative procedure, risks and after care.

**Table 1. Classification and Treatment Algorithm for Pseudogynecomastia after Massive Weight Loss.**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Minimal excess skin and fat, minimal alternation of NAC, normal IMF</td>
<td>Ultra-sound assisted Liposuction (UAL)</td>
</tr>
<tr>
<td>1a</td>
<td>No lateral skin roll</td>
<td>UAL and direct excision of roll</td>
</tr>
<tr>
<td>1b</td>
<td>Lateral skin roll</td>
<td>Pedicled nipple reconstruction</td>
</tr>
<tr>
<td>2</td>
<td>NAC and IMF below the ideal IMF, lateral chest roll, minimal upper abdominal laxity</td>
<td>Free-nipple graft reconstruction</td>
</tr>
<tr>
<td>3</td>
<td>NAC and IMF below the ideal IMF#, lateral chest roll, significant upper abdominal laxity</td>
<td></td>
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#Ideal IMF defined as the inferior border of the pectoralis major

**References**