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Restoration of Inferior Gluteal Crease in Combined Lower Buttock and Posterior Thigh Lifting

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ABSTRACT

Background: Gluteal contouring surgeries gained a growing public interest. No single procedure can correct different deformities. The patient's existing anatomy determines the best way to recontour the buttocks.

Patients and Methods: The study included nine female patients with gluteal contour deformity in the form of: Long buttocks, double inferior gluteal crease, excess tissue of the lower lateral buttock area and banana roll deformity of the upper posterior thigh. They underwent lower buttock and upper thigh lifting with restoration of the inferior gluteal crease. Two of them were post-bariatric patients and needed additional transverse medial thigh lifting at the same operation. Liposuction of the related anatomical areas was done in all patients. Lipofilling of deficient areas of the buttocks for augmentation or adjusting contour asymmetry was done in 5 patients including the 2 post-bariatric ones.

Results: Medical photographs were collected preoperatively and 3 months post-operatively. The average patients' follow-up period was 3.1 months. All patients were satisfied with the results. Only one patient had mild buttock contour asymmetry. No other complications were recorded.

Conclusion: The lower buttock and upper posterior thigh lifting can be safely combined with preservation of the inferior gluteal crease. It's a useful procedure for correction of the recorded gluteal contour deformities with high patient's satisfaction rate.

Key Words: *Inferior gluteal crease – Lower buttock – Posterior thigh lifting.*

INTRODUCTION

Recently, there is enormous increase in patient's demand for buttock contouring. Accordingly, many surgical procedures have been developed to correct different gluteal contour abnormalities or even enhance its beauty.

Aesthetics of the gluteal area were described extensively in the literature. Cuenca-Guerra et al., identified four aesthetically pleasing characteristics of the gluteal area **[1,2]**. These are; two well defined sacral dimples, a V-shaped sacral crease, short infragluteal fold not extending beyond the medial 2/3 of the posterior thigh and two mild trochanteric depressions. Centeno classified the gluteal region into eight aesthetic units: Two symmetrical flank units, a sacral triangle unit, two symmetrical gluteal units, two symmetrical thigh units and one infragluteal diamond unit **[3]**.

Cuenca-Guerra and lugo-Beltran also stated that; the distribution of fat and its volume in these units provide an aesthetic lateral view with specific features and parameters. They found that; the ideal ratio of anterior superior iliac spine (ASIS) to the greater trochanter and the greater trochanter to the point of maximum buttock projection should not exceed 1:2. They also described the appealing buttocks to have Concave lumbosacral area, no excess fat in the lumbosacral area or subgluteal area and adequate proper buttock projection with the point of maximum projection at the level of mons pubis **[2]**.

There are numerous techniques for correction of gluteal deformities of different aetiologies. These include liposuction, fat transfer, implants, autologous gluteal augmentation and excisional procedures or lifting. Enhancement of aesthetic results is achieved by combining more than one of these procedures. Also addressing not only the buttocks but also the surrounding aesthetic units and even the torso will significantly improve the gluteal aesthetics **[4]**.

This study was held on nine female patients complaining of isolated lower buttock and upper posterior thigh contour deformity. Two patients of them have an additional post-bariatric buttock deflation and antero-medial thigh redundancy but refused lower body lifting operation. An excisional lifting technique (confined to the area of the deformity) was proposed with attempts to restore the inferior gluteal crease.

PATIENTS AND METHODS

Nine female patients with buttock contour deformity in the form of long buttock, double inferior gluteal crease and lower lateral tissue excess to-

gether with upper posterior thigh banana roll deformity were included in this study in the period between 2015 and 2018 (Fig. 1). Two of the patients had additional post-bariatric buttock deflation and antero-medial thigh redunancy.

Preoperative markings were done while the patient is standing (Fig. 2). Inferior gluteal crease was identified first, especially along its medial two thirds. The excised part of lower buttock and upper thigh was estimated by pinch test aiming to achieve the desired shortening of the buttock (with preservation of its aesthetic caudal rounding) and tight lifting of the posterior thigh. The excised tissue was presented as an ellipse transected by the crease. The ellipse might extend medially to the crura and laterally to the trochanteric area according to the amount of tissue excess.

The operation was performed under general anaesthesia. The patient was positioned in the prone position. The excised ellipse was infiltrated with superwet saline adrenaline 1/1000000. Aggressive liposuction of the banana deformity fold was followed by its excision. The superficial fascial system (SFS) of the lower thigh flap was anchored cephalically to the deep gluteal fascial thickening of the inferior gluteal crease at the level of the ischial tuberosity by 4-5 heavy absorbable sutures. Full thickness excision of the excess lower buttock tissue was then done. The SFS and the dermis of the upper buttock flap were held in one bite suture and anchored caudally to the deep gluteal fascia just above the inferior gluteal crease restoring the normal anatomy of the crease through 4-5 sutures. Triple bite sutures connecting the lower thigh and upper buttock flaps with the deep gluteal fascia above the inferior gluteal crease would complete the subcutaneous wound closure followed by skin subcuticular closure.

The post-bariatric patients needed additional transverse medial thigh lifting. The excised ellipse of the medial thigh was continuous with that of the posterior thigh as in the traditional transverse medial thigh lifting operations. The medial thigh lifting was completed from the supine position.

Liposuction of flanks, sacral area, trochanteric areas and thigh was done before the excision in all cases to enhance the results.

Lipofilling to augment deficient areas of the buttocks or to adjust contour asymmetries was done in 5 patients including the 2 post-bariatric ones.

Fig. (1): Three of the patients showing the deformity: Long buttocks, double inferior gluteal crease, excess lower lateral buttock tissue and banana roll deformity of posterior thigh. The patient on the right had post-bariatric buttock deflation and antero-medial thigh laxity.

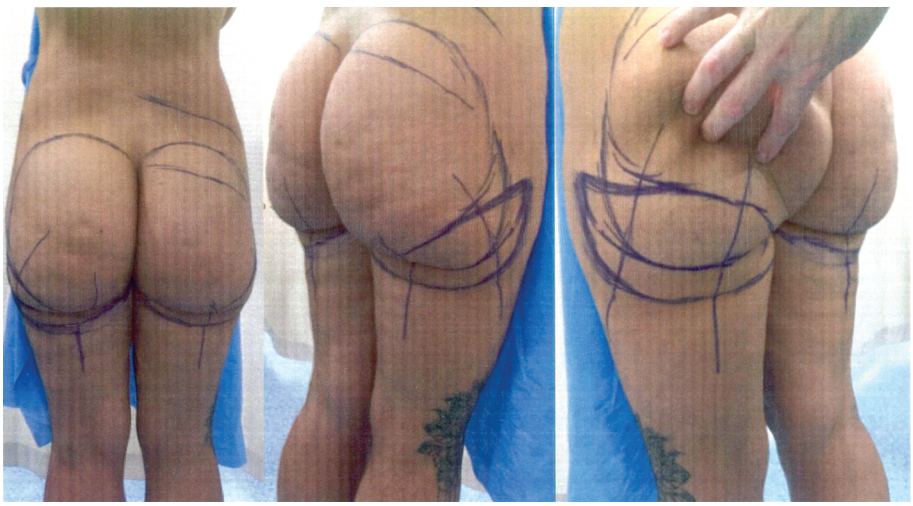

Fig. (2): Pre-operative markings. The hatched longitudinal lines to guide the closure. Markings of the upper right buttock denoted mild asymmetry to be corrected by liposuction and fat transfer.

RESULTS

Nine female patients underwent combined lower buttock and posterior thigh lifting (the described technique) in the period between 2015 and 2018 Transverse medial thigh lifting was also done in the same procedure in the 2 only post-barietric patients. Liposuction of the surrounding anatomical areas (flanks, sacral area, trochanteric areas, thigh) were performed in all patients to correct the associating lipodystrophy of these parts and to improve the overall results. Selected deficient areas of the buttocks, unilaterally or bilaterally were lipofilled in 5 patients including the 2 post-bariatric patients. The patient's age varied between 24-53 years (average 27.2 years). The average patients' follow-up period was 3.1 months.

Pre- and three months post-operative standard medical photographs were taken. Patients were asked to evaluate their final results regarding the following parameters: Buttock contour, posterior thigh contour and tightness, symmetry, position and quality of scars and preservation of the inferior gluteal crease. They were guided to use a four-point numerical rating scale, where 0 indicated no improvement and 3 indicated highly satisfied. In addition, patients were objectively evaluated by 2 plastic surgeons who were not involved in the treatment. These surgeons compared the pre- and post-operative photographs with regard to the same parameters. Their evaluation was recorded as percentage of improvement on a quartile grading scale: <25%: Mild improvement; 25-50%: Moderate improvement; 51-75%: Good improvement and 76-100%: Excellent improvement.

No complaint regarding Buttock contour, posterior thigh contour and tightness, position and quality of scars or preservation of the inferior gluteal crease. Only one patient complained of mild buttock contour asymmetry needed no intervention. The subjective evaluation revealed an overall high degree of satisfaction in 8 of 9 patients (88.9%). One patients (11.1%) reported moderate satisfaction (Fig. 3).

Fig. (3): Pre-operative (upper photos) and 3 months post-operative (lower photos) of one of the two post-bariatric patients.

The objective aesthetic outcome was rated as excellent in 7 patients (77.8%) and good in the remaining 2 patients (22.2%).

All patients showed significant improvement of the buttock contour and thigh firmness with restoration of the inferior gluteal crease and preservation of normal buttock thigh relation.

No major complications were recorded.

DISCUSSION

The gluteal area has gained increasing attention by female population. This is reflected in increasing interest of plastic surgery in gluteoplasty **[5]**. Plethora of techniques was described to manage different buttock contour deformities.

This study aimed to present a technique for correction of an isolated lower buttock contour deformity. Our patients complained of long buttocks, double inferior gluteal crease, lower lateral tissue excess of the buttock proper and upper posterior thigh banana roll deformity. These abnormal findings were found to come together in some patients with over-sized A-shaped buttocks according to Mendieta buttock shapes classification **[6]**.

Liposuction of lower buttock or upper posterior thigh has bad reputation of worsening the situation. It results in attenuation of buttock support and failure of banana roll skin to redrap. Excision of the tissue excess of the lower buttock and the banana roll of the upper thigh carried the risk of violating the inferior gluteal crease. In our study, separate anchorage sutures of the upper buttock flap (dermis and SFS in one bite) and lower thigh flap (SFS) in the deep gluteal fascia at the crease level (restoring the normal anatomy of the crease) were taken after the excision.

Accentuation of the inferior gluteal crease is aesthetically required in its medial 2/3. The resulting scar is relatively long extending from the crural area medially till the trochanteric area laterally with its medial half hidden in the inferior gluteal crease. This scar might extend medially and anteriorly for medial thigh lifting as in the two patients with post-bariatric antero-medial thigh ptosis. These two patients objected doing circumferential lower body lifting.

Pitanguy **[7]** was the first to address both buttock ptosis and the trochanteric lipodystrophy through a long scar along the gluteal crease that extended nearly to the anterior superior iliac spine (ASIS). This technique didn't consider the buttock contour, resulting in flattened buttocks. Later, he suggested the removal of only skin and minimal local tissue to improve the results **[8,9]**. This improvement was explained by Gonzalez as; conservative soft tissue excision above the inferior gluteal crease preserved the supporting tissues being a very important consideration **[10]**. However, liposuction solved the problem of trochanteric lipodystrophy avoiding the need of long scars.

Baroudi and Moraes **[11]**, Lockwood **[12,13]**, and Pascal and Le Louarn **[14]** also described their refined techniques to manage excess ptotic skin at the gluteal crease level. They used superior buttock excision with or without autoaugmentation. Inadequate buttock ptosis correction despite of long scars was a known pitfall of their techniques especially in cases with lower buttock deformity with no significant ptosis.

There is confusion between the trochanteric lipodystrophy and excess tissue of the lower lateral buttock area of buttock proper in the literature. The term trochanteric-buttock ptosis was used to describe the laxity in the lower buttock area and trochanteric area caused by significant weight loss, undesirable lipoplasty sequelae, and severe local deformities **[10]**.

The majority of our patients (7 out of 9) experienced no body weight loss with no or mild skin laxity and the two post-bariatric patients seemed to have the same deformity even before weight loss. There were associating trochanteric lipodystrophy in six of our patients. It was treated by liposuction while the lower lateral buttock tissue excess was included in the excised ellipse.

Gonzalez stated that the lower buttock lifting procedures has to be done exclusively to shorten the long buttocks when no significant ptosis is present **[10]**. He invented several excisional techniques: An upper buttock lift, a lower dermo-tuberal anchorage lift, a lateral buttocks lift and a medial buttocks lift **[15]**. In the lower dermo-tuberal anchorage lift, he claimed that ptosis of the inferior gluteal crease did happen in long buttocks necessitating its recreation at a higher level by anchorage sutures in deep gluteal fascia covering the ischial tuberosity. Creation of a new crease at a higher level was firstly attempted by Coban et al. and Kirwan **[16,17]**.

In our patients, there was no actual ptosis of the inferior gluteal crease. It was always at the level of ischial tuberosity despite of its ptotic appearance due to the long buttock deformity.

Gonzalez operated on patients with long buttocks and trochanteric laxity by combining the lower dermo-tuberal anchorage lift and the lateral buttock lift **[15]**. This resulted in two scars, one was hidden in the inferior gluteal crease and the other was along the iliac crest extending from anterior superior iliac spine to the posterior superior iliac spine. The contradictory vectors of the two liftings of the buttock might decrease each other contouring effect.

The technique described in this article was the first to combine lower buttock and upper posterior thigh lifting to manage a complex contour deformity around the inferior gluteal crease. It also succeeded in preservation of the local anatomy of the crease.

Conclusion:

Combining lower buttock lifting and posterior thigh lifting with carful anchorage of the upper and lower flaps to restore the inferior gluteal crease offered aesthetically pleasing results. It was a useful technique for correction of long buttock, double inferior gluteal crease, excess tissue of lower lateral buttock area and banana fold deformity of the posterior thigh. Transverse medial thigh lifting can be done at the same time if needed. Liposuction and lipofilling of the surrounding anatomical areas would enhance the aesthetic outcome. The scars were relatively long but of accepted quality. High satisfaction was achieved in all patients.

REFERENCES

1- Cuenca-Guerra R. and Quezada J.: What makes buttocks beautiful? A review and classification of the determinants of gluteal beauty and the surgical techniques to achieve them. Aesthetic Plast. Surg., 28 (5): 340-347, 2004.

2- Cuenca-Guerra R. and Lugo-Beltran I.: Beautiful buttocks: Characteristics and surgical techniques. Clin. Plast. Surg., 33 (3): 321-332, 2006.

3- Centeno R.F.: Gluteal Aesthetic Unit Classification: To improve outcomes in body contouring. Aesthetic Surg. J., 26 (2): 200-208, 2006.

4- Ali Ahmed: Contouring of the Gluteal Region in Women. Ann. Plast. Surg., 67 (3): 209-214, 2011.

5- Mendieta C.G.: Gluteal Reshaping. Aesthetic Surg. J., 27: 641-655, 2007.

6- Mendieta C.G.: Classification System for Gluteal Evaluation. Clin. Plast. Surg., 33 (3): 479-496, 2006.

7- Pitanguy I.: Trochanteric Lipodystrophy. Plast. Reconstr. Surg., 34: 280, 1964.

8- Pitanguy I.: Surgical Reduction of the Abdomen, Tighs and Buttocks. Surg. Clin. N. Am., 51: 479, 1971.

9- Pitanguy I.: Dermolipectomy of Abdominal Weall, Thighs and Buttocks. In: Converse J.M., editor. Reconstructive Plastic Surgery. Philadelphia: WB Sounders Co., 3800-3823, 1977.

10- Gonzalez R.: Buttocks lifting: The Dermo-Tuberal Anchorage Technique. Aesthetic Surg. J., 25 (1): 15-23, 2005.

11- Baroudi R. and Moraes M.; Philosophy, technical principles, selection and indications in body contouring surgery. Aesthetic Plast. Surg., 15: 1-18, 1991.

12- Lockwood T.: Transverse flank-thigh-buttock lift with superficial fascial suspension. Plast. Reconst. Surg., 87: 1019-1027, 1991.

13- Lockwood T.: Lower body lift superficial fascial system suspension. Plast. Reconst. Surg., 92: 1112-1122, 1993.

14- Pascal J.F. and Le Louarn C.: Remodeling body lift with high lateral tension. Aesthetic Plast. Surg., 26: 223-230, 2002.

15- Gonzalez R.: Buttocks lifting: How and when to use medial, lateral, lower and upper lifting techniques. Clin. Plast. Surg., 33: 467-478, 2006.

16- Coban Y.K., Uzel M. and Celik M.: Correction of buttock ptosis with anchoring deepithelialized skin flaps. Aesthetic Plast. Surg., 28: 116-119, 2004.

17- Kirwan L.: Anchor thigh plasty. Aesthetic Surg. J., 24: 61-64, 2004.