

# Management of Gluteal Adjuvant Disease by Resection and Rotation of Pre-Expanded Lumbar Flaps

de Rungs Brown DR\*, Sandoval Rodríguez IJ and Jaramillo hurtado MC

Department of Plastic & Reconstructive Surgery Service, American British Medical Center, Av. Carlos Fernández Graef, Santa Fe, Contadero, Cuajimalpa de Morelos Ciudad de México, Mexico

\*Corresponding author: de Rungs Brown DR, Department of Plastic & Reconstructive Surgery Service, American British Medical Center, Av. Carlos Fernández Graef 154, Santa Fe, Contadero, Cuajimalpa de Morelos 05330 Ciudad de México, Mexico, Tel: +5215524993215, E-mail: De\_rungs@hotmail.com

Citation: de Rungs Brown DR, Sandoval Rodríguez IJ, Jaramillo hurtado MC (2020) Management of Gluteal Adjuvant Disease by Resection and Rotation of Pre-Expanded Lumbar Flaps. J Surg Oper Care 5(1): 103

Received Date: July 01, 2020 Accepted Date: December 19, 2020 Published Date: December 22, 2020

## Abstract

**Objective:** To evaluate and discuss the main options for reconstruction in patients with gluteal adjuvant disease.

**Design:** Retrospective revision of a clinical case and techniques used.

**Environment:** Tertiary and private reference center.

**Introduction:** The adjuvant human disease is defined as any clinical manifestation associated with the parenteral administration of adjuvant substances purposes and that occurs at least 3 months after administration.

**Clinical case:** We present the case of a 45-year-old female patient, managed with resection of gluteal adjuvants and reconstruction with a lumbar perforator flap.

**Conclusion:** The management for gluteal adjuvant disease in an early stage by modeling resection and rotation of pre-expanded lumbar flaps, is an adequate management option in the correct patient.

**Keywords:** Gluteal; Adjuvant Disease; Expansion; Lumbar Flap

## Introduction

Adjuvant disease is defined as any pathology with clinical manifestations related to parenteral administration of substances for modeling purposes and that manifests itself at least three months after administration, excluding soft tissue infection and malignancies. The evolution of this requires early staging and multidisciplinary management [1]. In patients with gluteal disease in early stages, resection of models and reconstruction is possible.

In the reconstruction of the lumbar region in large defects such as oncological resections, trauma, pressure ulcers and in modeling resections, flap coverage is necessary [2]. Multiple flaps have been proposed for the reconstruction of the lumbar region, including the dorsal flap, wide, rhomboid, gluteal, transverse lumbosacral reverse, however they present donor site morbidity or a limited arc of rotation [3]. The lumbar perforator flap is an adequate option because it presents a constant and reliable irrigation for reconstruction of local defects with minimal Donor zone morbidity [4].

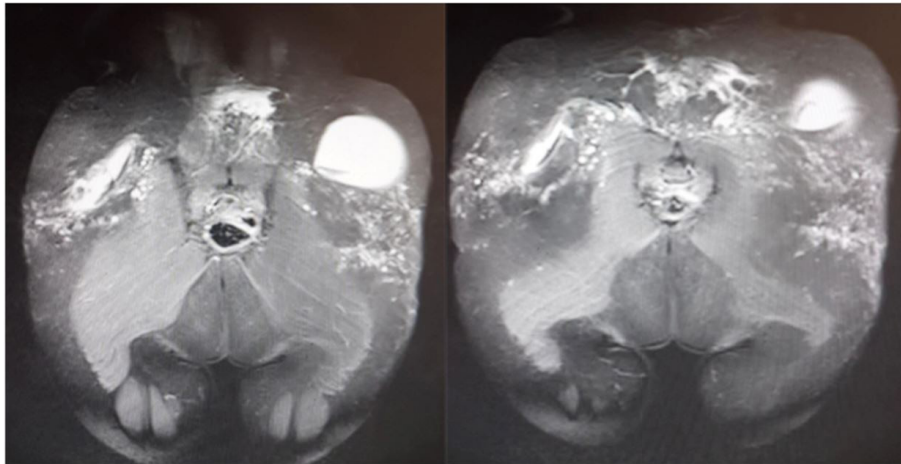
We present the case of a 45-year-old female patient managed with resection of the gluteal modeling and reconstruction with a lumbar perforator flap.

## Clinical Case

This is a 45-year-old female patient with no significant history, who started her current condition 10 years ago after being infiltrated with an unknown substance in the gluteal region for modeling purposes. One year before our evaluation, she began to experience stabbing, intermittent pain, predominantly at night, in the gluteal region, accompanied by periods of changes in erythematous coloration and increased skin consistency.

On examination, there are indurated areas in the upper gluteal quadrants, accompanied by color changes, without perineal involvement. Protocol is started by performing MRI as well as assessment and management by the rheumatology service

(Figure 1). Evidence of skin and subcutaneous cell tissue involvement is evident, predominantly in the superolateral quadrants, respecting the muscular plane, corresponding to a stage 1 of the Priego-Villanueva Scale, for the management of models, deciding the placement of lumbar expanders for subsequent resection of buttocks. with reconstruction with rotation of pre-expanded lumbar flaps (Figure 2).



**Figure 1:** Magnetic resonance with evidence of adjuvants in the gluteal region in subcutaneous cellular tissue. The adjuvant substance is fixed into soft tissue and extending into peripheral lymph vessels



**Figure 2:** Clinical photographs completed tissue expansion. Demonstrates the lumbar wounds. And an asymmetrical extension of the expanders. Completing the soft tissue dimension for the coverage

In a second surgical period, six months after the first event, a gull wing approach was performed, a wide resection of the upper quadrant adjuvant glutes, as well as reconstruction with rotation of the lumbar flaps. (Figure 3 and 4).

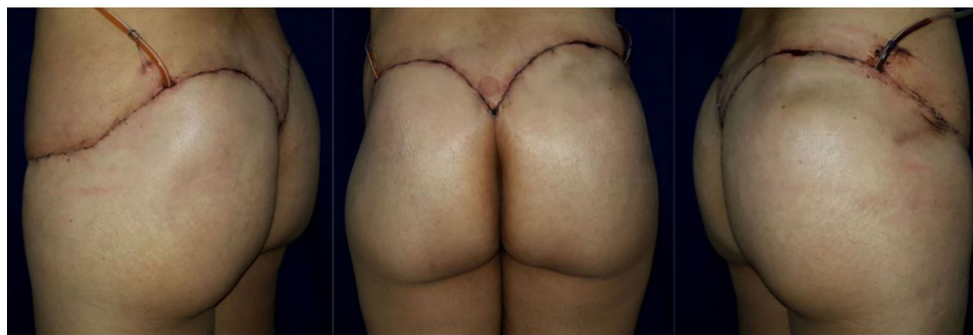


**Figure 3:** Rotation of lumbar flaps. With Good soft tissue thickness with previous depithelatio



**Figure 4:** Resected gluteal adyuvant invasion and rectangular expansions

In the immediate postoperative period, the patient presented cellulite data that gave way with the medical treatment, without showing dehiscence. Currently with adequate postoperative evolution, with a decrease in the amount of gluteal adyuvants, with the consequent decrease in the systemic condition, and without presenting aesthetic deformity (Figure 5 and 6).



**Figure 5:** Clinical photographs seven days after surgery with Good evolution wounds



**Figure 6:** Clinical photographs 45 days after surgery. With no complications

## Discussion

Gluteal adyuvant disease is defined as that pathology in which an immune reaction associated with inflammatory rheumatic disease occurs due to the infiltration of modeling substances. The distribution by gender is 72.4% in women and 27.6% in men. The gluteal region is the most infiltrated anatomical region followed by the breasts, pelvic limbs, hip and face. These substances cause acute and chronic alterations at the histological level. The acute or also called exudative phase presents an infiltration of polymorphonuclear cells and the appearance of macrophages containing vacuoles of oily material. In the chronic phase, there is a predominance of lymphocytes, fibroblasts, and plasma cells, as well as the formation of foreign body granulomas and there may be lung, liver, or kidney disease [5].

The study protocol should include joint management at the rheumatology, psychology service, and MRI to assess the affected tissues. Medical management by rheumatology in 90% of cases helps to control local and systemic manifestations, and decreases their progression, making them more sporadic and less aggressive, visibly improving the conditions and vascularity of the infiltrated tissues [6].

Based on the affected anatomical plane and the presence or absence of systemic disease, surgical management will be decided. Patients with adequate general condition, without associated systemic disease and with a model located in the subcutaneous plane, without muscle involvement, are candidates for model resection and reconstructive management. Patients who have involvement of deep muscle planes, bone and perineal management should be medical due to the morbidity that would be the resection of the structures involved [7].

A reconstructive option for early stage patients with adequate general condition is the lumbar perforator flap. In 1987 Taylor and Palmer<sup>8</sup> introduced the angiosome theory, which was an important step for perforator flap surgery. The advantages of perforator flaps are the ability to preserve the underlying muscle as well as decreased donor site functional deficit and pain.

The first study on lumbar perforating arteries in flaps was carried out by Kato *et al.* [8] in 1988 in cadavers and clinical cases. The main arteries supplying the lumbar region are the lateral branches of the inferior posterior intercostal arteries and the lateral lumbar arteries, as well as the deep inferior epigastric artery, superficial inferior epigastric artery, deep superior epigastric artery, and superficial and deep circumflex iliac vessels. previously. These vessels converge on the lateral flank, creating significant deep and superficial anastomoses, providing numerous options for possible elevation of the lumbar flap [9].

The lumbar perforators arise from the posterior part of the aorta, four on each side of the body, and travel behind the psoas major muscle. The three upper lumbar arteries run laterally and backward between the lumbar square muscle and the erector spinalis musculature. The last set of arteries normally runs in front of the lumbar square muscle. Not all lumbar arteries emit a perforating artery. The midpoint of perforation of the lumbar fascia by a lumbar perforating vessel is 5 to 9cm from the midline [10].

The lumbar perforator flap is based on a versatile design that allows a rotation angle of 90 degrees, with a medial pedicle, which favors an increase in the anteroposterior diameter in the axis of greatest gluteal projection, with an improvement in the gluteal contour that adds to a decrease in the hip circumference, causing a more harmonious relationship in the patient's waist and giving a better definition to the infra-gluteal fold, with the advantage of providing autologous tissue, with reliable circulation and constant anatomy that provides sufficient volume but it can be modified based on the needs of each patient. Furthermore, it allows carrying out total resections with primary closure if the surrounding tissues allow it, with consistent results both in the medium and long term [11].

## Conclusion

Management for adjuvant gluteal disease due to early stage through resection of modeling agents and rotation of pre-expanded lumbar flaps is an adequate management option in the indicated patient, which leads to clinical improvement, decrease in systemic progression, and favorable aesthetic results.

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