

Necrotizing Soft Tissue Infection as a Result of a “Brazilian Butt Lift” Procedure

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Received date: May 31, 2017; Accepted date: June 12, 2017; Published date: June 16, 2017

Citation: Matthews MR, Helmick EA, Caruso DM, Foster KN (2017) Necrotizing Soft Tissue Infection as a Result of a “Brazilian Butt Lift” Procedure. Trauma Acute Care Vol 2 Iss 3: 46.

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Abstract

Introduction: The Brazilian Butt Lift is an increasingly popular procedure that alters the appearance of the buttocks. Surgical infections range from 1.9% to 5% of the total complication rate for gluteal augmentation, including both superficial and deep infections. We present an uncommon case of necrotizing soft tissue infection after gluteal augmentation requiring multiple debridements.

Methods/Results: A 30 year-old male presented with a twenty-four hour history of buttock pain having undergone a bilateral gluteal implant procedure twelve days prior. After a clinical work-up he was immediately taken to the operating theatre for removal of the bilateral buttock implants and debridement of the necrotic subcutaneous tissue, fascia and muscles of the bilateral buttocks. Large counter incisions were made on the buttocks for removal of the implants and packing of the wounds with dressings. During his hospital course he required 16 bilateral buttock soft tissue debridements and several more involving an abscess to the left posterior thigh that tracked distally from the initial buttock infection. The superior gluteal and left thigh wounds were eventually closed with either delayed primary closure or split thickness skin grafting and discharged forty-eight days after presentation.

Conclusions: Recent fades in aesthetic surgery have led to increases in gluteal augmentation, however, infectious complications have been rarely reported as this procedure has an inherently low infectious risk profile. Standard perioperative and postoperative care is essential and early diagnosis of a soft tissue necrotizing infection coupled with prompt surgical intervention, including removal of such prosthetic implants and debridement is mandatory.

Keywords: Gluteal augmentation; Brazilian butt lift; Gluteoplasty; Necrotizing soft tissue infection; Debridement; Antibiotics; Surgical complication; Implant infection; Prosthetic infection

Introduction

Gluteal augmentation is an increasingly popular procedure that alters the appearance of the buttocks with more than 21,446 operations performed in 2014 [1] up from 542 in 2005 [2]. The first gluteoplasty was performed in 1965 [1]. Since, there have been many technical modifications to the procedure that have been established in order to improve aesthetic outcomes as well as to avoid adverse events [3-7]. Despite these advancements there is a potential for wound complications which have been reported as high as 30% for gluteal augmentation cases. Risks include, wound dehiscence (9.6%), seromas (4.6%), sciatic nerve paraesthesias (1%), hematomas (0.63%), implant dislodgement (0.6%), and infections which reach 1.9% to 5% of the total complication rate including both superficial and deep infections [1,8,9]. Despite the infrequency of this clinical entity, we present an uncommon case of necrotizing soft tissue infection after gluteal augmentation requiring prosthetic ex-plantation and multiple debridements.

Case Report

A 30 year-old healthy male presented to the emergency department with a twenty-four hour history of nausea, vomiting and bilateral buttock pain. Twelve days prior he had undergone a bilateral gluteal implant procedure known as a “Brazilian Butt Lift”, using silicone implants inserted through a midline incision in the gluteal cleft. These implants were tunneled and inserted into the intramuscular compartments below the fascia of the bilateral gluteus maximus muscle. Upon arrival, the patient was felt to be septic with initial vital signs, Blood pressure: 113/50, Heart rate: 130, Temperature: 38.9°C, RR: 24, and white blood cell of 6.6 with a bandemia of greater than 19%. A subsequent computerized tomography (CT) scan (**Figure 1**) revealed fluid and free air in the soft tissues at the gluteoplasty site. He was immediately taken to the operating theater for removal of the bilateral buttock implants (**Figure 2**) and debridement of the necrotic subcutaneous tissue, fascia and muscles of the bilateral buttocks.

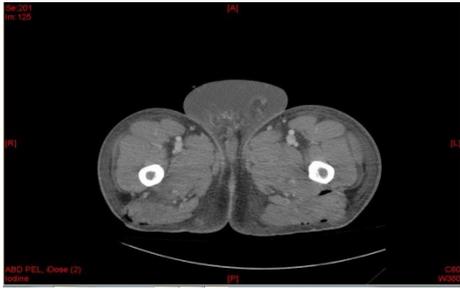


Figure 1: Computerized Tomography Scan revealing air, fluid and edema of bilateral buttock regions consistent with infection.

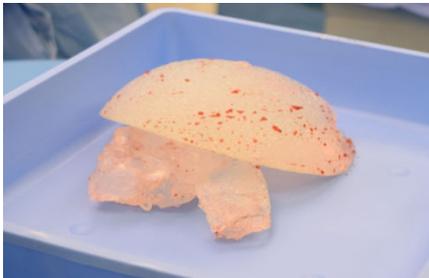


Figure 2: Ex-planted bilateral buttock implants.

Large counter incisions were made superiorly and laterally on the buttocks for removal of the implants (**Figure 3**), drainage, and packing of the wounds with dressings soaked in Dakin's solution (Century Pharmaceuticals, Inc., Indianapolis, IN).



Figure 3: Superior and midline buttock incisions plus a right lateral (relaxing) buttocks incisions for packing. Partial closure of the superior granulating wounds of the bilateral buttocks.

Cultures of the wounds were positive for *Escherichia coli*, *Streptococcus beta C* and *Enterococcus faecalis*. The patient was placed on appropriate intravenous antibiotic therapy and was admitted to the Arizona Burn Center for management. Because of the nature of the bacteria (synonymous with feces), there was a concern for a possible rectal injury which was ruled out with a CT of the pelvis with rectal contrast which proved to be negative. During his hospital course he required 16 bilateral buttock soft tissue debridements, several of which involved the

debridement on an abscess of the left posterior thigh that had tracked distally from the original left buttock abscess cavity (**Figures 4 and 5**).



Figure 4: Presence of the tunneled infection into the posterior left thigh from the main left buttocks infection illustrated by insertion of suction device directed superiorly toward the left buttocks.



Figure 5: Left posterior thigh and delayed primary closure of superior buttock wounds with open bilateral inferio-lateral (relaxing) granulating buttocks and midline gluteal cleft incision sites.

The superior gluteal wounds were eventually closed with delayed primary closure, while the lateral buttock wounds healed by secondary intention and his left posterior thigh wound was closed with split thickness skin grafting. He was discharged forty-eight days after presentation. Subsequently, ten weeks post-discharge, the grafted sites were well-healed and he elected to undergo surgical scar management to his bilateral buttocks (**Figure 6**).



Figure 6: Healed buttock wounds with epithelial scarring.

Discussion

This case illustrates the serious complication that albeit uncommon can potentially arise from aesthetic gluteal augmentation procedures, specifically regarding gluteal implants used to improve body image and physical appearance. However, because of the low infection risk profile, the literature only has sparse mention addressing the risk of infection requiring explantation of the prosthesis [8,10,11]. The majority of buttock implants must be able to withstand shear and compressive forces, and therefore a semisolid silicone elastomer implant has been approved for use in the United States [12]. Because of the proximity of the anus and rectal vault to the gluteal cleft incision site (within 4 to 6 cm inferiorly within the midline) [12] for the insertion of the gluteal augmentation procedure, there is a potential risk for bacterial contamination of the surgical entry incision as well as the implant [12]. Strict adherence to sterile technique, prevention of the implant's contact with the skin and adequate peri-operative preparation of the skin and anal sphincter is important to help avoid cross contamination of the prosthesis [12].

The gluteal cleft incision over the sacrum is necessarily dissected free from the deep tissues for the insertion of the gluteal augmentation device. This area is well known to have a tenuous and sparse arterial blood supply with minimal perforating arteries which has led to attempts at modifying the augmentation procedure to find ways to avoid unnecessary damage to this gluteal cleft region [12-15]. In addition, the region is fragile despite two major arteries feeding the gluteus maximus muscle and the poor vascular perforators are believed to be the cause of wound dehiscence with this procedure [1,5]. Incisions made elsewhere for insertion of gluteal implants are more visible and consequently less aesthetic despite a decrease in the risk for an infection [12,16].

Surgical site infections beyond superficial cellulitis [9] need appropriate and prompt surgical treatment with removal of any infected prosthetic implants that are present. The patient should also be made aware of the possible sequelae of infectious complications infection (1.9 to 5%) [11,12]. In one review of wound complications in forty patients undergoing gluteal augmentation, infection was only found once, while seromas and hematomas were listed as the only two major complications [15]. One study did not find any infectious complications, stating that all patients' were "satisfied with results" [17], while another listed just 3 patients out of 746 patients with an infection and that "all patients greatly satisfied with results" [18]. An additional study reported only one infection in 73 patients [19]. A three year retrospective series established a surgical infection rate of only 5% for both superficial and deep infections [9], even still, in the majority of reviews, infectious risk is low [12], despite one author citing a 7% infection rate for subfascial implant placement [20]. By far the preponderance of data suggests that cellulitis, abscess or sepsis, including necrotizing soft tissue infections is uncommon and that the procedure has a low infectious risk [12] which and is why this case report is so unusual.

Recalcitrant infection is also rare but has been described in the medical literature [10,21]. The treatment for an infection may be as simple as treating a superficial cellulitis with antibiotics [21] compared to the more serious deep seeded infection which may require removal of the implants and repeated surgical debridements as in our patient [11]. In a case report from Europe, the patient needed multiple debridements and dressing changes to the right buttocks as well as prolonged intravenous antibiotics for cultures that grew *Mycobacterium abscessus* sub-speciation *massiliense* [10]. In that case report, intravenous antibiotics and medical care lasted for over ten months. Another case report had a positive culture for *Mycobacterium abscessus* after culture biopsy of the tissue around the buttock implant which subsequently resolved after a full course of appropriate intravenous antibiotic therapy [21].

Prior to performing gluteal augmentation, it is important to have extensive preoperative planning including a detailed patient discussion regarding the procedure, the risks as well as the postoperative follow-up to identify an early infectious complication [11]. While there are multiple technical modifications in performing the "Brazilian Butt Lift" procedure involving the approach and the placement of the semisolid silicone elastomer implants [3-7,12], once a necrotizing soft tissue infection is suspected, the immediate plan should consist of a detailed physical examination, intravenous fluid resuscitation, appropriate broad-spectrum intravenous antibiotics, pertinent laboratory and computed tomographic studies of the involved area, and an aggressive surgical debridement coupled with the removal of the prosthetic implants [11].

Conclusion

Recent fades in aesthetic surgery have led to an increase in gluteal augmentation, and subsequent infectious risk is very low. Standard perioperative and postoperative care is essential and early diagnosis of a soft tissue necrotizing infection coupled with prompt surgical intervention, including removal of such prosthetic implants and debridement, is mandatory. While most large series reveal a low incidence of infection, the patient must be made aware of the risks inherent and the possible negative outcomes, including pain and scarring, before reconstruction should be considered.

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