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Case Report

Management of the Complications of Soft Tissue Fillers, 10 Years after Gluteal Augmentation

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Abstract

Augmentation and contouring of the gluteal region have become extremely popular in the last few years with increased demand from our patients. We present the case of a healthy thirty year old female who presented with a bilateral deformity of her buttocks ten years post- gluteal augmentation with soft tissue fillers. Several surgical procedures have been done for her including lipofilling, lateral lifting of hip and gluteal implants. The patient could at the end find herself and obtain an acceptable body contour.

Introduction

Augmentation and contouring of the gluteal region have become extremely popular in the last few years with increased demand from our patients. As plastic surgeons, we can accomplish this via three methods: gluteal implants, fat transfer, and filler injections (1). The medical indications for gluteal augmentation and reconstruction include post-radiotherapy; trauma; malformation; asymmetry; and aesthetics . One such method of augmentation is to inject biodegradable fillers into the gluteal region, which can be broadly categorised into those which have stimulating effect on the dermal microenvironment, and those which provide volume to the space. Hyaluronic acid gel, silicone oil and collagen gel are examples of space-filling injectables, while poly-L-lactic acid (PLA) and calcium hydroxyl apatite (CHA) have additional biostimulatory properties (2). Free silicone injection is currently solely licensed in the setting of retinal detachment, though silicone-based surgical techniques continue to be performed in many countries, often out of standard (3,4). Due to the nature of these procedures, patients may be hesitant to disclose this information to the treating physicians, resulting in reliance on imaging for diagnosis and treatment, as occurred in a similar case to ours (5).

Case Report

We present the case of a healthy thirty-year-old female who presented with a bilateral deformity of her buttocks ten years post-gluteal augmentation with soft tissue fillers. The patient underwent gluteal enhancement with the use of an unknown filler. She was initially happy with the outcome and was free of

complications for many years. However, six years post-procedure she noticed some areas of both buttocks becoming firm and irregular, which eventually developed into an indurated and painful soft tissue deformity with associated hyperpigmentation of the areas. She consulted specialist physicians on various occasions who advised observation, antibiotic therapy and simple analgesia.

The deformity deteriorated over time, developing more intense hyperpigmentation, and with the patient now requiring regular analgesia to manage her discomfort. Eventually, ten years following the initial augmentation, she consulted our team (Fig.1).

Figure 1 A: at the presentation front view

Figure1 B at the presentation oblique view

On clinical examination, her gluteal region was grossly deformed. The skin was discoloured, with an irregular firm and lumpy texture. MRI was performed, which showed diffuse inflammation and foreign material dispersed throughout the gluteal muscles and overlying soft tissue bilaterally. This complex case was discussed on several occasions among the plastic surgery team regarding options for reconstruction.

The first concern was to remove the foreign material dispersed throughout the tissues. Suggestions among the team included staged excision or liposuction, followed by reconstruction by fat grafting and transfer.

Serial excision of the area would likely prove difficult as the material was widely dispersed with no definitive collection. The risks involved included haemorrhage, major tissue loss, and the possibility of

creating a large concave wound with a resultant aesthetically challenging defect. In addition, due to the poor skin quality at this point, wound healing would also be unpredictable.

Liposuction, too, was not an ideal alternative due to the lack of a concentrated collection of material. We also considered gluteal lifting to improve upon contour and projection - however, this is a physiologically demanding procedure, requiring multiple sessions which may have proven difficult due to the lack of elasticity of the deformed skin.

We agreed that the best option at this point was to trial lipofilling, with the aim of adding volume to the multiple defects, to improve the quality of the overlying skin, and to reduce the hyperpigmentation. This was performed as a staged procedure with three to four months in between lipofilling sessions to allow monitoring of the patient's progress and to evaluate the effect of each session. This also allowed us to inject small, controlled volumes of purified fat over multiple sessions, thereby reducing postoperative pain, diminishing fat resorption and so allowing for several lipofilling sessions, and reducing the risk of fat embolism.

The patient had no systemic reaction to the lipofilling procedures. The first session involved the injection of 300 mls of purified fat into each buttock. At the three month review, the contour of both buttocks had improved, however there was no improvement in skin quality or hyperpigmentation. At the six month review, the majority of the injected fat seemed to have resorbed, and the improvement in contour mostly disappeared.

We repeated the procedure at this point, with a reduced volume of purified fat - 200mls into each buttock - alongside infiltration of local analgesia to avoid severe post-operative pain, and an overnight stay in hospital for observation. This was followed by a further 150ml injection 3 months later as a day case (Fig. 2).

Figure 2 After 3 sessions of lipofilling

Following this, the patient then underwent two further lipofilling procedures at four month intervals.

Re-evaluation at eighteen months post-initial lipofilling procedure was satisfactory. The form of the gluteal region bilaterally was less irregular, the skin quality improved and softer to touch; the color less intensely pigmented; and most importantly, the pain and tenderness of the region hugely improved. However, there was at this point some lateral sagging of the skin on the patient's hips. She underwent a further procedure under general anaesthesia at this point to lift the hips, which involved an elliptical excision and upward lifting of the skin, alongside lipofilling 200mls into each side (Fig 3).

Figure 3 After hip lifting

Six months following this, the patient again presented with some lateral sagging of the skin, though less severe as before. At this point, she also expressed concern that her buttocks had become flat looking. She was again re-evaluated, and the decision was made to perform another lateral lifting procedure, in addition to inserting gluteal implants to increase volume in the region and to further improve upon the irregularities. 300cc polytech implants were inserted by SMS technique. The procedure was uncomplicated (Fig.4).

The patient was extremely satisfied with the end result, free from pain and discomfort. We maintained the size while improving upon the symmetry of the region, and the color of the skin has improved dramatically, with a 70-80% reduction in hyperpigmentation. The only area of concern are the bilateral scars at the level of the patient's waist post-lateral lifting, which are concealed by the linear skin creases in the area, and so do not require revision.

Figure 4 A after gluteal implants and final hip lifting front view

Figure 4 B After gluteal implants and final hip lifting oblique view

Discussion

In recent years, gluteal enhancement has become an increasingly popular procedure in the realm of cosmetic surgery. Gluteal augmentation can be either false, where one creates the illusion of augmentation, or true augmentation, which may be achieved by surgical or non-surgical means. The most popular forms of surgical augmentation include lipofilling and gluteal implants, with the latter increasingly used due to the higher risk of fat embolism related to lipofilling the gluteal region.

Non-surgical techniques of gluteal augmentation include the use of filler injections in different forms and compositions. This technique is widely used as it is straightforward, displays immediate results, and has a

shorter recovery time compared to surgery. As well as this, it can be useful to correct asymmetry and small defects which only require minor correction, and avoids the need to undergo general anaesthesia.

The most common post-filler adverse reactions described in the literature are those of skin hyperpigmentation, painful swelling, nodule formation, and fibrosis – as in our case (6). These adverse effects can occur immediately, early on, or as they did for this patient, delayed for years post-procedure. Long-term complications can include chronic infection, granulomatous formation, soft tissue necrosis, autoimmune reactions, and filler migration (7).

Of the different formulas currently in use, free silicone injection carries the highest complication rate, particularly concerning migration of the filler from the original injection site, with the subsequent formation of painful soft tissue reactions. This includes granulomatous formation in up to 20% with pure medical grade silicone (3,5,8). Our patient was unaware of the nature of the product used to inject her gluteal region, and she was satisfied with the results of her procedure for the first few years, with no immediate or early adverse effects. However, she eventually began to experience discomfort and unfortunately developed complications later on. We biopsied the tissue and material removed from her gluteal region which was then sent for histology, elucidating that the filler injected into this woman was none other than free silicone.

Thankfully, our patient did not have any systemic or distant complications, with her unfortunate outcome confined to the gluteal region. More serious adverse side effects of free silicone injections have been recorded, such as a case described by Hana et. al. The patient suffered from retroperitoneal fibrosis secondary to a deep-seated chronic soft tissue infection following injectable silicone gluteal augmentation. This retroperitoneal fibrosis progressed, leading to vascular occlusion and obstructive uropathy, a devastating complication following an elective procedure (9).

Dermal fillers of hyaluronic acid gel base have been shown to have much lower rates of complications compared to other techniques, as well as other types of fillers. Broadly, dermal fillers are a safe and effective way of improving upon gluteal shape, proportion and consistency. However, use of unlicensed substances increases the risk of adverse outcomes both short and long-term, occasionally with devastating consequences for the patient. Due to the lack of information surrounding the product injected and the individual who performed the procedure in this case, it is not possible to discern if this was a result of poor technique or an inappropriate use of poor-quality substance.

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