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Case Report

Severe Granulomatous Foreign Body Reaction Following Gluteal Genefill Dermal Filler Injection: A Surgical Excision Case Study

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Abstract

The use of injectable dermal fillers for gluteal augmentation has increased globally, particularly in non-regulated cosmetic settings. While short-term aesthetic outcomes may appear satisfactory, delayed and severe complications related to permanent or semi-permanent fillers are increasingly reported. We present a complex case of bilateral granulomatous foreign-body reaction following a Genefill gluteal dermal filler injection, with a prolonged disease course spanning from January 2022 to January 2023. The patient developed progressive pain, induration, deformity, and functional impairment. Magnetic resonance imaging (MRI) demonstrated extensive subcutaneous and subfascial filler deposition with inflammatory changes compatible with dermal filler.

Definitive treatment required a wide bilateral surgical excision. This report highlights the diagnostic value of MRI, the surgical challenges encountered, and the importance of awareness regarding long-term complications of gluteal fillers administered by unlicensed and untrained healthcare professionals in an unsafe, nonclinical environment.

Keywords: *Gluteal fillers, Genefill, foreign body granuloma, dermal filler complications, MRI, surgical excision*

Introduction

Gluteal augmentation has become a popular cosmetic procedure, driven by evolving aesthetic trends and increased demand for body contouring. Autologous fat grafting remains the gold standard technique due to its biocompatibility and safety profile. However, injectable dermal fillers, permanent or semi-permanent substances, continue to be used in many regions despite limited regulatory approval and insufficient long-term safety data. [1,2].

Products such as Genefill, believed to contain synthetic or biopolymeric materials, have been associated with severe delayed complications, including foreign body granulomatous reactions, chronic inflammation, fibrosis, migration, and tissue necrosis [3,4]. These reactions may present months or even years after injection, complicating diagnosis and management.

Foreign body granulomas represent a chronic inflammatory response characterized histologically by

macrophages, multinucleated giant cells, and fibrotic encapsulation of exogenous material [5]. Once established, these lesions often respond poorly to medical therapy, making surgical intervention necessary in advanced cases [6].

This case study provides a comprehensive clinical, radiological, surgical, and pathological correlation of a severe delayed reaction following gluteal Genefill injection, with detailed photographic documentation over one year.

Case Presentation

A female patient presented with progressively worsening bilateral gluteal symptoms following cosmetic dermal filler injections administered for gluteal augmentation in January 2022. The procedure was performed outside a regulated medical environment, and the exact composition and volume of the injected material were not fully documented. According to the patient's history, the filler product used was identified as Genefill. The immediate post-procedural period was uneventful; however, over time, the patient developed gradually progressive symptoms.

Beginning in mid-2022, the patient noted increasing firmness and discomfort in both buttocks, which was initially mild and intermittent. Over the subsequent months, these symptoms progressed to persistent deep-seated pain, increasing tissue hardness, and palpable subcutaneous nodularity. By late 2022, visible contour deformity and bilateral asymmetry became increasingly apparent, with distortion of the normal gluteal profile evident on posterior and oblique clinical views (Figure 1). The overlying skin appeared stretched, and the patient reported significant discomfort during sitting and routine daily activities. Conservative measures failed to provide symptomatic relief, and the condition continued to worsen.

On physical examination, both gluteal regions demonstrated diffuse induration with poorly defined margins. The tissues were firm and tender on palpation, with multiple deep-seated subcutaneous masses noted bilaterally. There were no clinical signs of acute infection such as erythema, fluctuance, or systemic fever at the time of evaluation. The chronicity, progressive nature, and extent of the findings raised a strong suspicion for a delayed foreign body granulomatous reaction to dermal filler material.

Figure 1 - *Posterior and oblique views of the gluteal region demonstrating bilateral contour deformity and subcutaneous bulging following dermal filler injection.*

Magnetic resonance imaging (MRI) of the buttocks was subsequently performed to assess the full extent of disease involvement and to aid surgical planning. MRI revealed multiple irregular nodular and confluent lesions distributed throughout the subcutaneous and submuscular tissues of both gluteal regions. These lesions demonstrated heterogeneous signal intensity consistent with injected foreign material, with surrounding inflammatory and fibrotic changes. Evidence of filler migration beyond the expected injection planes was observed, while the underlying gluteal musculature remained preserved mainly. These imaging findings were consistent with a chronic granulomatous foreign-body reaction secondary to a dermal filler injection (Figure 2).

MRI OF THE GLUTEAL REGION

Technique:
MRI of bilateral gluteal region was done in 3 Tesla MRI scanner using dedicated sequences in orthogonal planes. 10 mL of IV contrast was also injected for postcontrast study.

Clinical Data:
Pain in bilateral gluteal region. History of Genefill injections in buttocks bilaterally.

Findings:

The study shows evidence of innumerable foci of altered signal intensity appearing hyperintense on T2 and hypointense on T1-weighted images noted in the fat planes of bilateral gluteal region. They are predominantly in the posterior and posterior lateral location.
External markers were kept at the site of the pain and it shows peripheral enhancement of few of the abovementioned cystic foci - most likely inflammatory changes.
Underlying gluteal muscles appear normal in morphology and signal intensity.
Visualized bones appear normal in alignment. No abnormal marrow signal changes seen.
No significant joint effusion is noted in bilateral hip joints.

Impression:
- Innumerable foci in fat planes of bilateral gluteal region, predominantly in the posterior and posterolateral location – consistent with history of Genefill injections in buttocks bilaterally.
- External markers were kept at the site of the pain and shows peripheral enhancement of few of the above mentioned cystic foci – most likely inflammatory changes.
- Correlation with clinical detail and inflammatory markers is suggested.

Figure 2 - *MRI report of the pelvis and gluteal region demonstrating heterogeneous subcutaneous nodular lesions consistent with filler deposition and granulomatous inflammatory reaction.*

Given the progressive symptoms, failure of conservative management, and extensive involvement demonstrated on imaging, surgical intervention was recommended, and in January 2023, the patient underwent bilateral surgical exploration for excision of the granulomas and cleaning of the affected gluteal tissues (Figure 3).
The incisions were made in the upper part of the buttocks, along the bikini line, to help conceal the resulting scars. The pattern involved two symmetrical, curved incisions that radiated outward, beginning near the intergluteal crease and extending toward the hips.

Figure 3 - *Preoperative clinical markings outlining areas of maximal granulomatous involvement prior to surgical excision.*

Intraoperatively, dense fibrotic subcutaneous tissue was encountered with multiple encapsulated granulomatous nodules embedded within the adipose layer. The regular tissue planes were markedly distorted by chronic inflammation (Figure 4). A white gelatinous (foam consistency) foreign material consistent with dermal filler was identified above and underneath the fascia of the Gluteus Maximus on both sides (Figure 5 and video 1)).

Figure 4 - *Intraoperative exposure on the both buttocks revealed dense fibrotic tissue and multiple granulomatous nodules within the subcutaneous plane.*

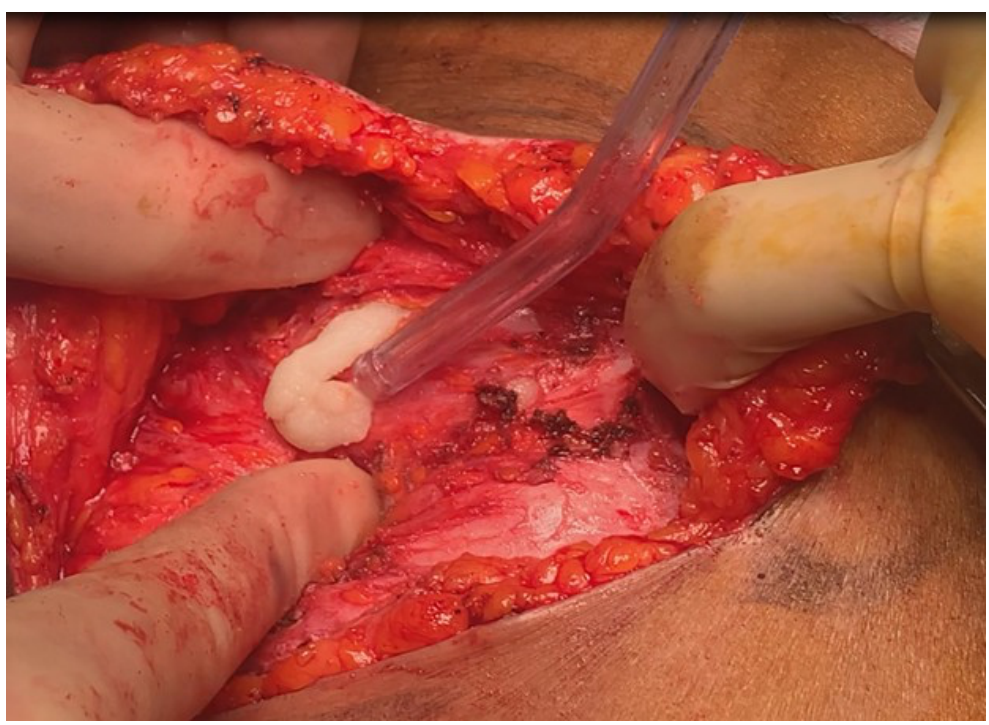

Figure 5 - Intraoperative exposure of the gluteal subcutaneous plane demonstrating extrusion of whitish, gelatinous foreign material consistent with residual Genefill dermal filler, surrounded by inflamed and fibroticadipose tissue.

Wide debridement, involving the removal of damaged tissue and encapsulated granulomas from the wounds, was performed with careful dissection to preserve skin viability and underlying musculature (Figures 6, 7, 8 and 9).

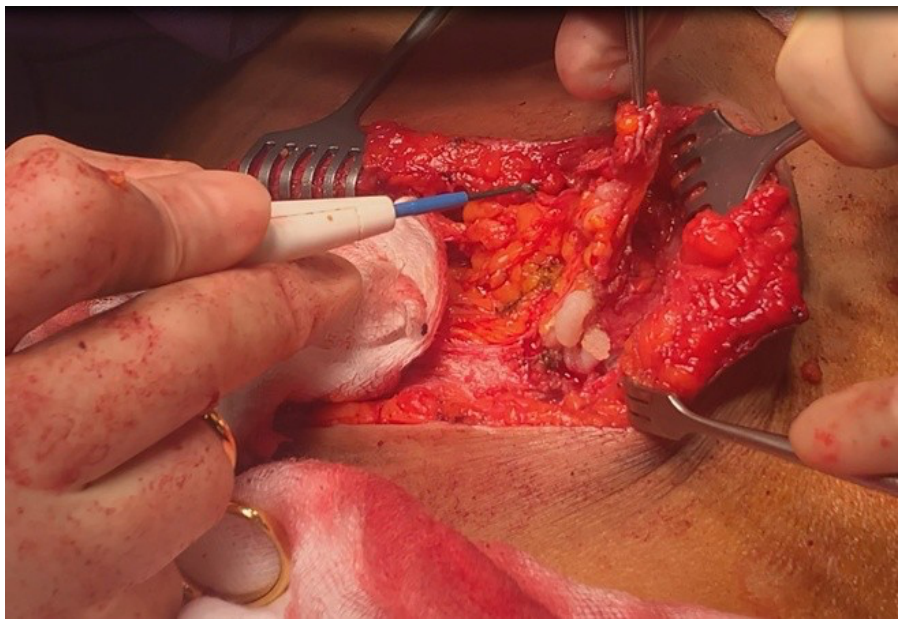

Figure 6 - Intraoperative dissection revealing multiple encapsulated nodules of foreign body material embedded within fibrotic gluteal tissue. Sharp and blunt dissection is used to isolate the granulomatous deposits, illustrating the irregular distribution and deep infiltration of filler material within the subcutaneous plane.

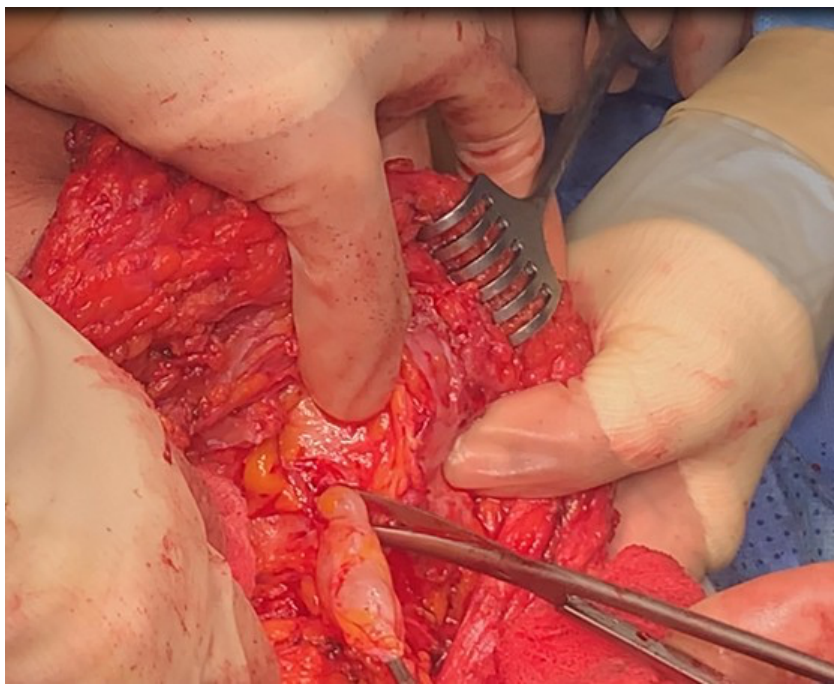

Figure 7 - *Surgical excision of a well-defined granulomatous mass from the left gluteal region. The image demonstrates careful separation of the foreign body granuloma from surrounding inflamed adipose tissue, emphasizing the firm consistency and nodular architecture characteristic of chronic foreign body reactions following dermal filler injections*

Figure 8 - *Intraoperative view of the right buttock following excision, showing the surgical cavity after removal of foreign material and inflamed tissue.*

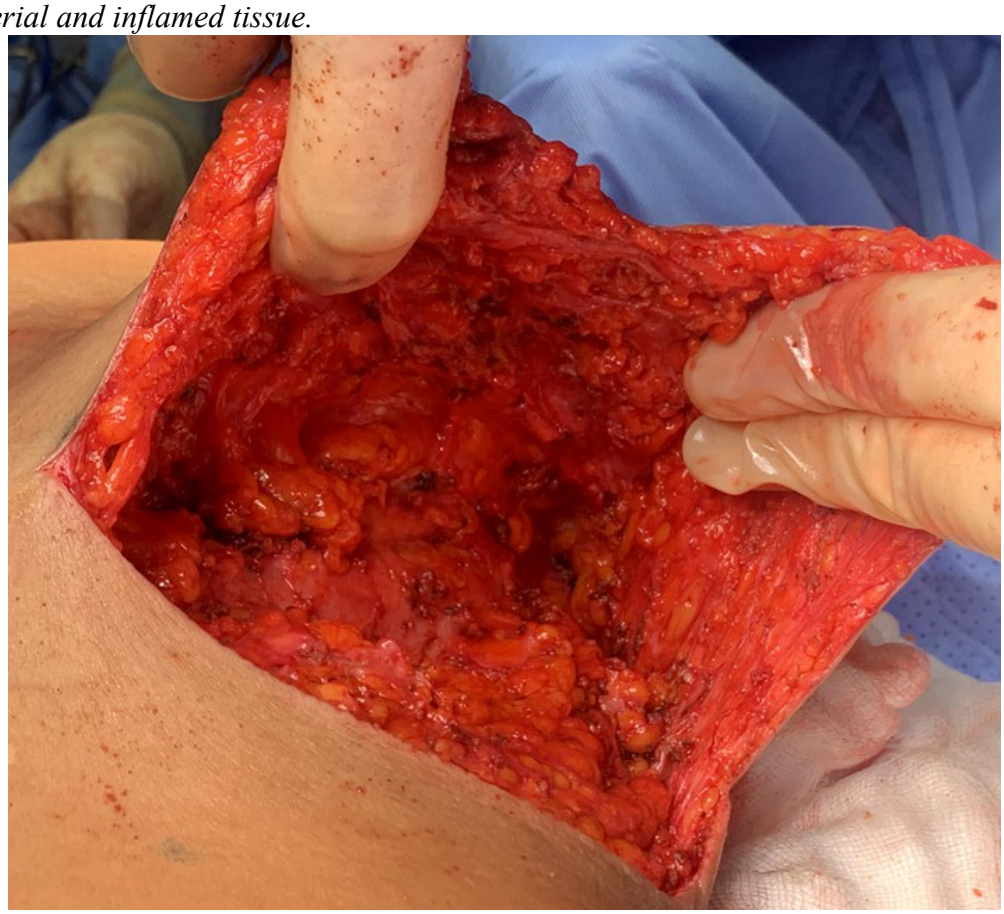

Figure 9 - Wide intraoperative view of the left gluteal surgical cavity following complete excision of granulomatous tissue and foreign material. The image highlights the extent of tissue involvement, residual fibrotic changes, and the depth of dissection required to achieve adequate clearance while preserving surrounding viable tissue.

Multiple specimens were removed for pathological analysis. Gross examination demonstrated irregular nodular masses characteristic of a foreign-body granulomatous reaction, and histology showed dermal cyst-like spaces filled with white foreign material and a granulomatous surrounding response with multiple multinucleated foreign-body-type giant cells, findings compatible with the surgical findings. (Figures 9 and 10).

Figure 10 - *Gross specimens removed during surgery demonstrating irregular nodular masses consistent with foreign body granulomatous reaction.*

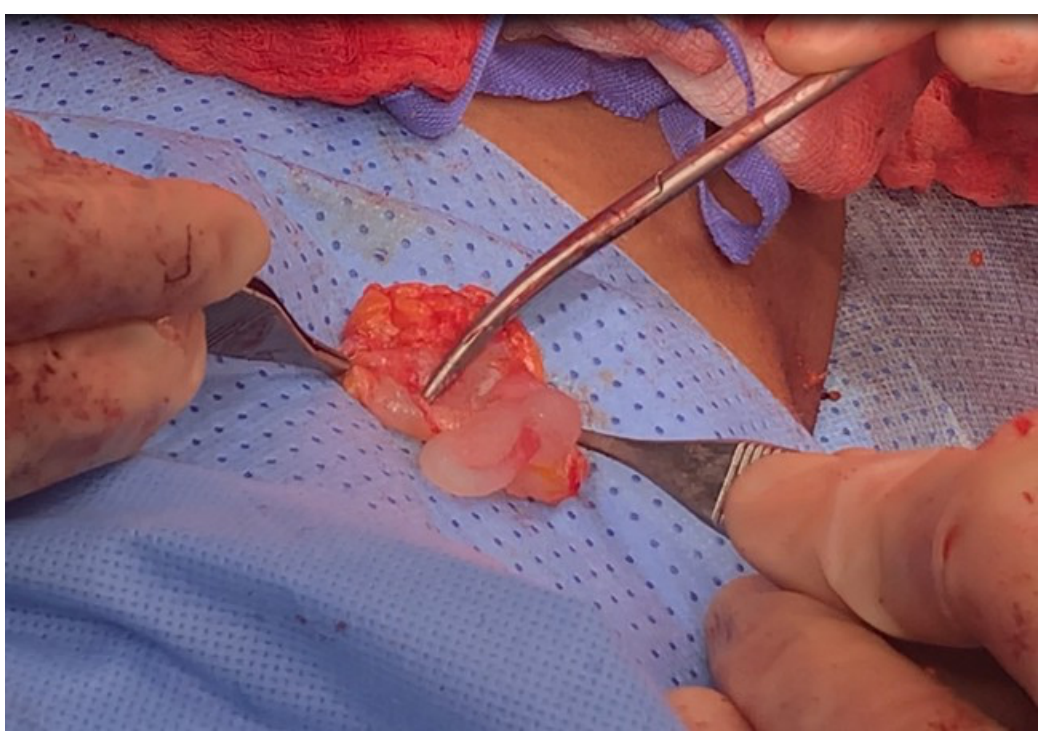

Figure 11 - Gross specimen of excised foreign body material displaying translucent, lobulated, gel-like nodules consistent with dermal filler remnants embedded within adipose tissue. The specimen illustrates the characteristic morphology of filler-induced granulomas removed during surgical excision.

The postoperative course was uneventful. The patient experienced a gradual resolution of pain and a significant improvement in tissue softness and functional comfort. Follow-up clinical evaluation demonstrated satisfactory wound healing and marked improvement in gluteal contour and symmetry. Postoperative images obtained at one-year follow-up confirmed a favorable aesthetic and functional outcome, with satisfactory scars. (Figure 11).

Figure 12 - *Postoperative appearance showing improved gluteal contour and symmetry following bilateral surgical excision (one-year follow-up - January 2024).*

Supplementary Video: ***https://youtu.be/-AaSLDDmuAY***
Intraoperative video demonstrating surgical exploration of the right gluteal region following Genefill dermal filler injection. The footage shows extrusion of gelatinous filler material from underneath the fascia of Gluteus Maximus Muscle, highlighting the extent of foreign body reaction and the complexity of surgical management.

Discussion

Injectable dermal fillers have gained widespread popularity for soft tissue augmentation; however, their use in large-volume gluteal enhancement has been associated with a growing number of complications. Among these, delayed foreign body granulomatous reactions represent a significant clinical challenge due to their unpredictable presentation, diagnostic difficulty, and resistance to conservative management. The present case highlights a severe granulomatous reaction following Genefill injection, necessitating surgical excision after failure of non-operative measures [3,4].

Granulomatous foreign body reactions are mediated by chronic macrophage activation in response to non-biodegradable or poorly metabolized filler materials. These reactions may manifest months to years after injection and are often triggered by immunologic stimuli such as infection, trauma, or systemic inflammation. Clinically, patients may present with pain, firmness, nodularity, deformity, or functional impairment,

frequently in the absence of overlying skin changes, as observed in our patient [5].

Magnetic resonance imaging plays a crucial role in the evaluation of suspected filler-related complications. As described in previous studies, filler materials typically appear hypointense on T1-weighted sequences and hyperintense on T2-weighted or STIR sequences, reflecting their hydrophilic properties and associated inflammatory changes. MRI is particularly valuable in differentiating foreign material from neoplastic or infectious processes and in assessing the depth of involvement, thereby guiding surgical planning. In the present case, MRI confirmed confinement of the pathology to the subcutaneous plane, allowing for safe excision without muscular violation[6,7].

Management of granulomatous filler reactions remains controversial. Conservative therapies, including corticosteroids, antibiotics, and immunomodulators, may provide temporary symptom relief but often fail in cases involving large-volume injections or permanent fillers. Surgical excision, while technically demanding, remains the definitive treatment for symptomatic patients with extensive disease, as supported by previous literature. The article by Christensen et al. emphasizes that complete removal of the offending material is critical to prevent recurrence and persistent inflammation, a principle that guided the operative strategy in this case[8,9].

This case further underscores the risks associated with off-label use of dermal fillers in the gluteal region, particularly products not specifically approved for large-volume body contouring. Surgeons and patients alike must be aware of the long-term complications associated with such practices. Regulatory oversight, patient education, and careful product selection are essential to minimize adverse outcomes[10,11].

In conclusion, delayed granulomatous foreign body reaction is a serious complication of gluteal dermal filler injection. MRI serves as an indispensable diagnostic and surgical planning tool, while complete surgical excision remains the most effective treatment in advanced cases. Reporting such cases is essential to raise awareness and contribute to safer aesthetic practice.

Conclusion

Severe granulomatous foreign body reaction following Genefill gluteal dermal filler injection represents a serious delayed complication with significant functional and aesthetic consequences. MRI plays a critical role in diagnosis and surgical planning. In advanced cases, wide surgical excision offers effective symptom relief and satisfactory outcomes. Increased awareness among clinicians and patients is essential to prevent similar complications.

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