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CASE REPORT
Cosmetic

Necrotizing Fasciitis after Panniculectomy Caused by *Finegoldia magna*

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Summary: Necrotizing fasciitis is a rare yet severe complication after body contouring surgery. We present a case of a 54-year-old woman with a complex medical history who developed necrotizing fasciitis 9 days after panniculectomy and epigastric hernia repair. Microbiological examination revealed *Finegoldia magna* as the causative agent, a rare pathogen in necrotizing fasciitis. Patients undergoing body contouring may be at increased risk of developing necrotizing fasciitis; therefore, increased attention should be paid to this differential diagnosis in case of postoperative signs of infection. This case report highlights the pivotal importance of early recognition, prompt surgical intervention, and comprehensive medical treatment to improve patient outcomes in necrotizing fasciitis. *(Plast Reconstr Surg Glob Open 2024; 12:e5773; doi: 10.1097/GOX.0000000000005773; Published online 29 April 2024.)*

Necrotizing fasciitis (NF) is a rare but severe disease that can lead to life-threatening septic shock. The time between patient presentation and surgical intervention was shown to be a critical factor regarding clinical outcome in NF.[1] The clinical picture of NF is often indistinct, and findings on physical examination are often insufficient for diagnosis.[2] The best known scoring system is the Laboratory Risk Indicator for Necrotizing Fasciitis, which assigns a risk group for NF based on six laboratory parameters.[3] An adjunct to decision-making presented by our clinic is the Laboratory and Anamnestic Risk Indicator for Necrotizing Fasciitis score, which includes three laboratory parameters as well as three comorbidities.[4] In this case report, we present a compelling and instructive instance of a patient who developed NF after a body contouring surgery.

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CASE PRESENTATION

A 54-year-old woman with end-stage renal disease due to immunoglobulin A nephritis, arterial hypertension, hyperlipoproteinemia, and obesity was rejected for a kidney transplantation by transplant surgeons, due to a significant overhanging panniculus and the associated increased surgical risks. In preparation for the kidney transplantation, we performed a panniculectomy with simultaneous epigastric hernia repair with ULTRAPRO mesh (Ethicon, Inc) in our department. Four years before the surgery, the patient had undergone sleeve gastrectomy, resulting in a weight loss from 112 kg to 74 kg. The woman maintained a stable weight for 1 year before surgery, and her body mass index during surgery was 30. Preoperative laboratory values included: leukocyte count 5.5 per mm^3, Hb 13.5 g per dL, sodium 143 mmol per L, creatinine 2.36 mg per dL, and CRP less than 0.5 mg per dL. Intraoperatively, the patient received a prophylactic dose of clindamycin 600 mg, which was continued postoperatively three times daily for 3 days. The postoperative course was without complications, the inserted drains were successfully removed sequentially, and the patient was discharged on postoperative day 5.

On postoperative day 9, the patient presented again in our emergency department with fever, chills, tachycardia, and pain over the mons pubis (Fig. 1). In the emergency department, the patient presented with critical laboratory values: leukocyte count 11.8 per mm^3, hemoglobin 5.9 g per dL, sodium 138 mmol per L, creatinine 5.18 mg per dL, glucose 345 mg per dL, C-reactive protein 41.7 mg per dL, procalcitonin 2.9 ng per mL and albumin 2.5 g per dL. The respective Laboratory Risk Indicator for Necrotizing Fasciitis and Laboratory

Disclosure statements are at the end of this article, following the correspondence information.

Fig. 1. The visual appearance at presentation to our emergency department. There was a mild diffuse abdominal redness and pain above the mons pubis; beyond that, the local findings were relatively inconspicuous.

and Anamnestic Risk Indicator for Necrotizing Fasciitis score (nine each) both indicated an increased risk of NF. The performed abdominal computed tomography scan showed fluid accumulation in the right lower abdomen, with no intraperitoneal free air. Intramuscularly, minimal air trapping was noted beneath the peritoneal fascia. Additionally, a significant subcutaneous soft tissue defect with lobular air collection was observed in the mid and lower abdomen, ventral to the abdominal fascia/musculature.

The patient was admitted to the intensive care unit, and emergency surgery was performed. Intraoperatively, the clinical presentation revealed NF involving the rectus fascia (Fig. 2). Surgical debridement, fasciotomy, and necrosectomy were performed. The surgical mesh was removed, and the intraperitoneal space was opened, which was inconspicuous. Subsequently, a fascial closure was performed, and an antiseptic dressing with polyhexanide was applied. Specimens were sent for histopathologic and microbial investigation. Histopathological analysis confirmed NF. Microbial analysis identified *Finegoldia magna* as the causative agent. Supportive treatment involved administering broad-spectrum antibiotics, meropenem, and vancomycin. An inconspicuous abdominal surgical exploration the following day led to the placement of a vacuum-assisted closure (VAC) system. The patient's condition improved gradually, allowing for a planned VAC change on the third day after readmission. The VAC was removed on the ninth day, and the wound was closed with the insertion of Redon drains (Fig. 3). These could be removed sequentially, and antibiotics could be discontinued after clinical signs and laboratory results of inflammation improved. A transfusion of packed red blood cells was required during the inpatient stay due to anemia. On day 19 after readmission, the patient could be discharged. The initial aim of the panniculectomy and epigastric hernia repair was to enhance eligibility for renal transplantation. Despite the complication of NF, the patient is currently in the planning phase for renal transplant, suggesting the intended surgical goal was achieved.

DISCUSSION

This case represents a serious complication after a body contouring procedure. Marchesi et al stated in their review that NF should be considered as a differential diagnosis after aesthetic surgery. They also observed that NF usually occurs within the third postoperative day.[5] In our case report, the patient presented with clinical signs of NF after 9 days, although it should be noted that in panniculectomy the functional component predominates as the operative goal. It was also found that functional panniculectomy was associated with more complications, such as sepsis, compared with cosmetic abdominoplasty.[6] This is based in part on the fact that patients undergoing functional panniculectomy often have significant comorbidities,[6] such as the patient in our case report. Despite the increased risks, panniculectomy can be a step toward a kidney transplantation in patients with end-stage renal disease, transforming patients who were previously ineligible for kidney transplantation into potential kidney transplant recipients.[7]

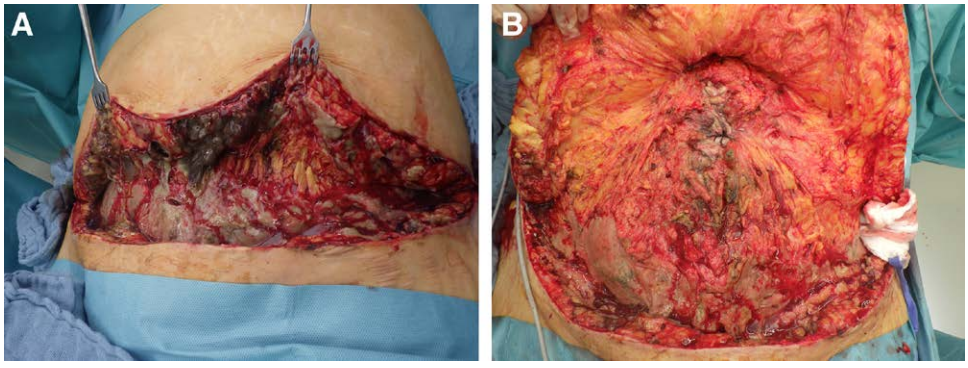

Fig. 2. Findings during surgical wound exploration. There were diffuse, but in the inferior wound area, pronounced fat tissue necroses as well as lytic fascia tissue clinically compatible with necrotizing fasciitis. A, First impression after wound opening. B, After complete wound exploration.

Fig. 3. Final result at a follow-up visit 5 months after secondary wound closure.

The *Finegoldia magna* presented in this case report is a rather rare pathogen in NF.[8] Begaj et al described the first case of NF due to *Finegoldia magna* on the abdominal wall in their 2020 case report, in which an overhanging panniculus was also reported, although, as opposed to our case, no previous surgical treatment was performed on the patient.[9] Another case of NF of the abdominal wall caused by *Finegoldia magna* was presented in 2021 by Thomas et al.[10] Again, no surgery was reported before the onset of NF in this patient. Although *Finegoldia magna* is an infrequently reported pathogen in NF, its occurrence in our case, after panniculectomy and hernia repair, distinguishes it from prior cases. In contrast to previous instances, our patient's complex medical history, marked by end-stage renal disease and multiple comorbidities, coupled with the surgical complexity of panniculectomy and epigastric hernia repair, likely contributed to the development of NF with *Finegoldia magna*. The surgical procedure may have served as an entry, possibly through contamination of the surgical site or translocation from the skin flora. Such procedures, particularly those involving manipulation of the abdominal wall, can create opportunities for opportunistic pathogens like *Finegoldia magna* to infiltrate tissues, especially in individuals with predisposing medical conditions. The delayed onset of symptoms prompts consideration of environmental or patient-specific factors influencing the infection, highlighting the importance of postoperative surveillance.

CONCLUSIONS

This case report highlights the grave implications of NF as a rare yet severe complication after body contouring procedures. The differential diagnosis of inflammatory signs after such procedures should always include NF, as these patients often have predisposing conditions that favor the occurrence of this life-threatening complication. The unusual identification of *Finegoldia magna* as the causative pathogen in our case serves as a stark reminder of the diverse microbial agents that can underlie this condition.

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DISCLOSURES

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