

CLINICAL CASE

LIPOFILLING COMPLICATED WITH EXTENSIVE NECROTIZING FASCIITIS: A CASE REPORT

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Abstract

Lipofilling is a popular cosmetic procedure, meaning to enhance the volume in certain body segments (such as breasts and buttocks) and slim down others (as fat is usually harvested from the abdomen, flanks, and thighs). It represents 5,9% of all nonsurgical aesthetic procedures. Gluteal as a site of fat injection has a complication rate of up to 5,89%, with incidents including fat necrosis, gluteal erythema, infection, and fat embolism. We will present the case of a 34 years old female, who developed extensive necrotizing fasciitis of the back and thigh after undergoing a lipofilling procedure, complicated with meningoencephalitis and an accentuated deterioration of neurological functions.

Keywords: necrotizing fasciitis, lipofilling, autologous fat transfer, meningoencephalitis

Introduction

Lipofilling is a popular cosmetic procedure, that enhances the volume in certain body segments (such as breasts and buttocks) and slims down others (as fat is usually harvested from the abdomen, flanks, and thighs). It represents 5,9% of all nonsurgical aesthetic procedures [1]. For the gluteal injection site, the complication rates can be up to 5,89%, making them very rare, with incidents including fat necrosis, gluteal erythema, infection, and fat embolism [2].

We present a case of necrotizing fasciitis, developed 3 weeks after a lipofilling procedure, and complicated with meningoencephalitis through hematogenous dissemination.

Case presentation

A 34 years old, female patient presented at the hospital with diffuse abdominal pain,

purulent secretions (green, fetid smell) from a surgical access point and dyspnea.

She had undergone an abdominal liposuction and gluteal lipofilling intervention three weeks prior in another country, and although she showed signs of infection she was discharged under antibiotic treatment. From her history we note a mammary implant surgery.

Physical examination at admission revealed tachycardia (120 bpm), hypotension (90/50 mmHg) and fever (39° C).

The surgical consult revealed liposuction incisions on the lower abdomen, back, posterior thighs, with a fetid secretion from the incision sites of the back and left thigh. The upper back, left axilla, left superior thigh presented with marbled cyanotic tegument and the thighs and lower abdomen with ecchymoses.

The patient was diagnosed with necrotizing fasciitis of the back, trunk and left thigh and septic shock, and underwent an emergency surgical intervention.

Large incisions of the back and left thigh were performed, with debridement of the dead tissue and necrotic fascia, pus drainage, washing and dressing. She was admitted in the ICU, where she required controlled mechanical ventilation through orotracheal intubation, vasopressor support with noradrenaline. She was maintained under sedation and analgesia with propofol and fentanyl. Urine output in the first 24h was 1880 ml. Empirical antibiotherapy was started with piperacillin/tazobactam, amikacin and teicoplanin.

On the second day, a second look surgery was performed, with debridement, washing and dressing, when an improvement of secretions was observed. The clinical state of the patient was stable. She was kept under sedation, controlled mechanical ventilation and vasopressor support.

The antibiotherapy was switched to meropenem, colistin, teicoplanin, according to the microbiology assay.

On the fifth day of admission, patient underwent dialysis with a cytokine filter for 48 h. The response was positive: ceasing of vasopressor support and a switching from controlled mechanical ventilation to spontaneous mechanical ventilation. Anidulafungin was added to the antibiotic treatment according to the urinary culture results.

On the eighth day, a third look surgery was performed, with debridement, washing, suturing, and dressing of the left open wound with Flamazine (post-operative evolution presented in Figures 1 & 2). The patient subsequently required vasopressor support with noradrenaline in small doses for 24 h.



Figure 1 - Aspect of the back and left thigh (5 weeks after the third intervention)

As the critical time period of septic shock had passed, the sedation was ceased, an EEG was performed, and the patient was assessed neurologically. The results revealed vertical spontaneous nystagmus, equal and reactive pupils, absent corneal reflex bilaterally, without cervical redor and flaccid tetraplegia, absent Babinski reflex bilaterally. The patient could open the eyes spontaneously, without response to verbal stimulation, and she received a Glasgow Coma Scale (GCS) score of 4.

An ophthalmological exam revealed bilateral papilledema. The patient was referred to an IRM examination, which showed two intracerebral abscesses, right lenticulocapsular,

with continuity in with right lateral ventricle, with no signs of intracranial hypertension.

The neurosurgical consult confirmed the GCS score of 3-4, the absence of important cerebral edema and hydrocephalus, and confirmed that a neurosurgical intervention was not needed at the moment. The Infectious diseases consult recommended the addition of vancomycin in her antibiotic treatment plan of meropenem, colistin, teicoplanin and anidulafungin.

On 21st day, a tracheostoma was placed. The evolution of the patient was slow but favorable, scoring 6 on the GCS at subsequent neurological evaluations, after 5 weeks.



Figure 2 - Detail of a necrotized bedsore on the left hip (5 weeks after the third intervention)

Future management of the case includes a CT scan, to evaluate the cerebral abscesses response to the antibiotic treatment, a surgical reintervention for skin grafting, and removal of ventilation support if neurological exam proves deglutition possible in patient.

Discussions

Necrotizing fasciitis is cited as a rare, severe complication of autologous fat transfer. In the general population it has an incidence of 0,4 per 100.000 inhabitants. It is usually associated with systemic risk factors that reduce the body's immunity, such as malignancy, IV drug abuse, age >50 years, diabetes mellitus, immunosuppression, alcohol abuse [3], none of which were identified in our patient. The preadmission treatment with antibiotics masked the severity of the infection, and thus negatively influenced the clinical course of the patient. As a study on meningitis shows, preadmission treatment is associated with a higher rate of neurological sequelae, due to a prolonged duration of the illness [4]. According to guidelines, preadmission antibiotics do not improve the outcome of acute bacterial meningitis [5].

Cerebral dissemination with such a grave outcome has rarely been reported in the literature. Intracerebral abscess antibiotic treatment is done after a cerebrospinal fluid culture.

Due to the lumbar localization of the infection, a diagnostic lumbar puncture could not be performed. Thus, the intracerebral abscesses were treated with an empirical course of meropenem, vancomycin and colistin.

Conclusions

This case highlights the need for a careful consideration of the risk/benefit ratio of every medical and surgical procedure, even ones deemed safe such as the autologous fat transfer.

References

- [1]Gir P, Brown SA, Oni G, Kashefi N, Mojallal A, Rohrich RJ. Fat grafting: evidence-based review on autologous fat harvesting, processing, reinjection, and storage. *Plast Reconstr Surg.* 2012;130: 249–258.
- [2]Cárdenas-Camarena L, Arenas-Quintana R, Robles-Cervantes J-A. Buttocks fat grafting: 14

years of evolution and experience. *Plast Reconstr Surg.* 2011;128: 545–555.

[3]Wong C-H, Chang H-C, Pasupathy S, Khin L-W, Tan J-L, Low C-O. Necrotizing fasciitis: clinical presentation, microbiology, and determinants of mortality. *J Bone Joint Surg Am.* 2003;85-A: 1454–1460.

[4]Kaplan SL, Smith EO, Wills C, Feigin RD. Association between preadmission oral antibiotic therapy and cerebrospinal fluid findings and sequelae caused by *Haemophilus influenzae* type b meningitis. *Pediatr Infect Dis.* 1986;5: 626–632.

[5]Moller K. Guidelines for managing acute bacterial meningitis. *BMJ.* 2000;320: 1290–1290.