

CASE REPORT

INFECTION

Case Report: Eyelid and Periorbital Necrotizing Fasciitis: Experience from the Kyiv Regional Clinical Hospital

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SUMMARY

Necrotizing fasciitis (NF) is an extremely severe infection that can lead to cosmetic and functional problems. It is characterized by rapidly progressing necrotizing infection of the superficial fascia with secondary necrosis of the overlying skin. According to a systematic review by Amrith and colleagues (2013), periorbital NF resulted in death in 8.5% of cases. Overall, the mortality rate from NF, usually due to multisystemic shock, ranges from 12% to 57%. In the literature, the following synonyms of the term NF may be used: streptococcal gangrene, hospital gangrene, gangrenous erysipelas, necrotising erysipelas, Fournier's gangrene, and purulent-necrotic process. The purpose of this article is to present to the public the experience of the staff of the Kyiv Regional Clinical Hospital in the treatment of NF of the eyelids and periorbital area in a 38-year-old male patient with the presentation of the result of treatment after one month. Summing up our experience in treating NF, we note that despite extensive areas of necrosis of the eyelid skin, its regenerative capabilities remain at an extremely high level due to existing vascularization and appropriate comprehensive treatment.

KEY WORDS

Necrotizing fasciitis, purulent-necrotic process, eyelids, periorbital area, skin

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INTRODUCTION

Necrotizing fasciitis (NF) is an extremely severe infection that can lead to cosmetic and functional problems.[1] It is characterized by rapidly progressing necrotizing infection of the superficial fascia with secondary necrosis of the overlying skin.[1] According to a systematic review by Amrith and colleagues (2013), periorbital NF resulted in death in 8.5% of cases.[1,2] Overall, the mortality rate from NF, usually due to multisystemic shock, ranges from 12% to 57%.[3] In the literature, the following synonyms of the term NF may be used: streptococcal gangrene, hospital gangrene, gangrenous erysipelas, necrotising erysipelas, Fournier's gangrene, and purulent-necrotic process.[2,4]

The purpose of this article is to present to the public the experience of the staff of the Kyiv Regional Clinical Hospital in the treatment of NF of the eyelids and periorbital area with the presentation of the result of treatment after one month.

CASE REPORT

On April 14, 2012, a 38-year-old male patient was brought by ambulance to the Admission and Diagnostic Department of the Kyiv Regional Clinical Hospital. According to the patient, he was beaten with brass knuckles a few days ago. After the beating, he was at home with facial swelling, after which the swelling began to be accompanied by redness of the skin, increased body temperature, and the appearance of purulent discharge in the left periorbital area.

On examination (Figs 1 and 2), the patient had complete closure of the eyelids of the left eye due to eyelids edema, redness and painful swelling of the skin of the left half of the face, the left temporal region, and the left periorbital region with multiple areas of necrosis. In the left suprabrow area, purulent discharge was also noted in the area of necrosis. Less erythematous edema was noted on the contralateral side. The swelling was significantly smaller on the right side, soft to palpation, and almost painless.

The surgery was performed under general anesthesia. No incisions were made in the periorbital area, and the tissues in the necrotic areas were bluntly dissected to the bone to evacuate the purulent content. A significant amount of purulent discharge was observed in all layers of the periorbital tissues and in the upper and lower eyelid area. However, the spread of the purulent process into the orbit was not observed. Two skin incisions and approaches were made: along the left nasolabial fold and in the area of the left zygomatic arch. An incision of the mucosa and access was also made in the area of the left maxillary tuberosity. These three approaches were created for revision of the infraorbital area, temporal and infratemporal fossa. After the surgical revision, rubber drains were installed in the periorbital tissue areas and three double tubular drains were placed in the three created accesses. Irrigation was carried out with antiseptic solutions, including Betadine solution. During the stay in the intensive care unit, surgical teams performed washing with antiseptic solutions and dressings.

The patient spent three days after the operation in the intensive care unit with appropriate therapy, which included cephalosporins and metronidazole.

Figure 3 demonstrate condition of the soft tissues on day 5 after surgery. The pronounced edema and erythema of the soft tissue start to decrease. The final formation of areas of necrosis with their clear demarcation from intact tissues is noted. These days, procedures are being carried out to irrigate areas of necrosis with Betadine solution.

Figure 4 shows the result of periorbital tissues healing on day 31 (i.e., May 15, 2012) after the surgery. The patient is able to lower the upper eyelid and close the left eye. No skin grafting procedures were performed during the first month after surgery.

The patient was recommended further plastic surgery.

DISCUSSION AND CONCLUSION

Correct diagnosis and immediate treatment of purulent pathology of facial soft tissues are important not only for health, but also for preserving the patient's life in general.[5–7] NF, being an aggressive purulent-necrotic process, also requires radical surgical treatment.[8–11] In our case, the purulent content were evacuated, and all necessary conditions were created for the tissues in the periorbital area for reparative processes and spontaneous removal of necrosis, with their gentle excision.

Summing up our experience in treating NF, we note that despite extensive areas of necrosis of the eyelid skin, its regenerative capabilities remain at an extremely high level due to existing vascularization[1] and appropriate comprehensive treatment.



FIGURE 1. Frontal preoperative view of a 38-year-old patient upon admission to the hospital (i.e., April 14, 2012).



FIGURE 2. Left (**A**) and right (**B**) lateral preoperative view of a patient upon admission to the hospital (i.e., April 14, 2012). **(Fig 2 continued on next page.)**



FIGURE 2 (continued). Left (**A**) and right (**B**) lateral preoperative view of a patient upon admission to the hospital (i.e., April 14, 2012).



FIGURE 3. Patient's appearance on day 5 after surgery (i.e., April 19, 2012): Frontal (**A**) and left lateral (**B**) view. **(Fig 3 continued on next page.)**



FIGURE 3 (continued). Patient's appearance on day 5 after surgery (i.e., April 19, 2012): Frontal (**A**) and left lateral (**B**) view.



FIGURE 4. The result of healing on day 31 (i.e., May 15, 2012) after the surgery. Anterior view of the face with open eyes (**A**) and close view of the left periorbital area with closed eyes (**B**).

TERM OF CONSENT

Writing patient's consent was obtained for publication the photos and data.

AUTHORS' CONTRIBUTIONS

Drafting of the manuscript: Fesenko II. Critical revision of the manuscript: all authors. Approval of the final version of the manuscript: all authors.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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ЗВІТ ПРО ВИПАДОК

UKRAINIAN LANGUAGE

Звіт про випадок: некротизуючий фасціїт повік та періорбітальної ділянки: досвід з КНП КОР «Київська обласна клінічна лікарня»

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АНОТАЦІЯ

Некротизуючий фасціїт (НФ) (синонім: некротичний фасціїт) – надзвичайно тяжкий інфекційний процес, який може призвести до косметичних і функціональних проблем. Характеризується швидко прогресуючою некротизуючою інфекцією поверхневої фасції з вторинним некрозом прилеглої шкіри. Відповідно до систематичного огляду Амріта і колег (2013), періорбітальний НФ призводив до смерті у 8,5% випадків. Загалом рівень смертності від НФ, зазвичай внаслідок мультисистемного шоку, коливається від 12% до 57%. У літературі можна знайти такі синоніми терміну НФ: стрептококова гангрена, госпітальна гангрена, гангренозна бешиха, некротична бешиха, гангрена Фурньє, гнійно-некротичний процес. Метою даної статті є ознайомлення громадськості з досвідом роботи співробітників Комунального неприбуткового закладу Київської обласної ради «Київська обласна клінічна лікарня» щодо лікування НФ повік та періорбітальної ділянки у пацієнта 38 років із представленням результату лікування через один місяць. Підсумовуючи наш досвід лікування НФ, зазначимо, що незважаючи на великі ділянки некрозу шкіри повік, її регенеративні можливості залишаються на надзвичайно високому рівні завдяки існуючій васкуляризації та відповідному комплексному лікуванню.

КЛЮЧОВІ СЛОВА

Некротизуючий фасціїт, гнійно-некротичний процес, повіки, періорбітальна ділянка, шкіра

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