Case Study

Extensive Cervicofacial and Truncal Necrotizing Fasciitis in the Puerperium: Successful Management with Surgical Debridement and Skin Grafting

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ABSTRACT

Background: Necrotizing fasciitis (NF) is an uncommon, acute, and fast spreading soft tissue infection with a high morbidity and mortality unless early infections are detected and treated. The puerperium cervicofacial and truncal invasion is extremely rare.

Case presentation: We describe a 23-year-old rural Nigerian woman from Jigawa State who presented with widespread cervicofacial and truncal necrotizing fasciitis that developed three weeks after childbirth and was initially treated traditionally. At admission, she reported having a high-grade fever, sepsis, and multiple discharging sinuses on her neck and upper trunk. Wound and vaginal cultures showed Staphylococcus aureus and Streptococcus species, respectively. Emergency resuscitation, broad-spectrum antibiotics, and numerous surgical debridement's were performed, followed by honey dressings and subsequent skin grafting, leading to complete recovery.

Conclusion: This case highlights the risks of late hospital presentation and application of traditional therapies and the relevance of early diagnosis, multidisciplinary management and reconstructive intervention to deliver positive outcomes in postpartum necrotizing fasciitis in contexts with limited resources.

Keywords: Cervicofacial, Truncal fasciitis, Puerperium, Surgical debridement, skin grafting

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INTRODUCTION

Necrotizing fasciitis (NF) is an uncommon but rapidly progressing soft tissue infection which is characterized by extensive fascia and subcutaneous tissue necrosis, severe systemic toxicity, and high mortality unless it is rapidly recognized and treated.[1,2] It normally occurs as a result of mixed infections by aerobic and anaerobic bacteria, mainly Streptococcus pyogenes and Staphylococcus aureus, that produce powerful exotoxins and enzymes which destroy the soft tissue planes.[3] Cervicofacial involvement in NF is rare and typically results from odontogenic infections, trauma, or postoperative complications.[4]

The incidence of necrotizing fasciitis in the puerperium is also especially unusual but presents significant maternal morbidity because of immunosuppressive conditions caused by pregnancy, postpartum blood loss, and poor perineal hygiene in resource-limited settings.[5] The disease is usually worsened by delayed presentation, self-medication, and traditional interventions; this enables infection to spread rapidly to several body parts such as the neck, chest, and trunk.[6]

Early detection, aggressive surgical debridement, proper antibiotic treatment, and multidisciplinary supportive care are key to survival.[7] Skin grafting is commonly necessary (required) following massive tissue loss during reconstruction to restore function and aesthetics.[8] This case report presents a rare and extensive manifestation of cervicofacial and truncal necrotizing fasciitis in a postpartum woman. It highlights the significance of early identification, timely resuscitation, radical debridement, and comprehensive wound management by both surgical and plastic reconstructive teams, which resulted in successful management and recovery of a potentially fatal condition.

Jigawa State, located in the North West geopolitical zone of Nigeria, is predominantly rural with a large agrarian population. The state has an estimated population of over 6 million people, with the majority residing in rural communities where access to quality healthcare services remains limited. Poverty levels are high—over 70% of the population lives below the poverty line—which significantly impacts health-seeking behavior and access to essential maternal health services.[9,10] Maternal mortality remains alarmingly high, estimated at about 1,012 deaths per 100,000 live births, primarily due to inadequate skilled birth attendance, poor hygiene practices, and delays in receiving emergency obstetric care.[9] Socioeconomic barriers, cultural beliefs, and a strong reliance on traditional birth attendants and healers further exacerbate maternal health challenges in the state.

A case report of extensive cervicofacial and truncal necrotizing fasciitis in a postpartum woman from rural Jigawa State, Nigeria who had previously been treated with traditional medicine before presenting in a critical condition. Prompt resuscitation, appropriate antibiotic therapy, and repeated surgical debridement followed by subsequent skin grafting led to successful management of the patient at Rasheed Shekoni Federal University Teaching Hospital, Dutse, Jigawa State.

CASE REPORT

Mrs. N.A. is a 23-year-old woman, now para 1 + 0, A (primipara), who delivered a live female baby three week prior to presentation. She was admitted to Rasheed Shekoni Federal University Teaching Hospital, Dutse, Jigawa State, with a two-week history of high-grade continuous fever and progressive swelling of the face, neck, and trunk. One week before presentation, the swellings became fluctuant and began discharging purulent material. She also complained of difficulty in eating and swallowing due to jaw and tongue swelling. Prior to hospital admission, she had sought help from a traditional healer who administered unspecified oral medication and incised some of the abscesses, after which her condition deteriorated.

On examination, she was acutely ill looking, anxious, febrile (temperature = 39.2°C), pale, anicteric, and acyanosed, with no pedal edema. There was marked swelling of the jaw and tongue, with multiple discharging sinuses on the chin, jaw, neck, and upper trunk, exuding foul-smelling pus. The patient appears clinically dehydrated with dry mucous membranes and tachycardia. Capillary refill time was delayed. Her pulse rate was 138 beats per minute, blood pressure 90/60 mmHg, Respiratory rate was 45 cycle/min and oxygen saturation 97% on room air. Abdominal examination revealed no organomegaly; however, the uterus was bulky. Vaginal examination revealed a soft central cervix which admits tip of a finger. The gloved fingertip was stained with brownish vaginal discharge in line with normal Lochia. There was mild tenderness bilaterally. Speculum examination showed a healthy vaginal wall with evidence of brownish discharge from the cervical Os, no visible lacerations or growths, and no active

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bleeding. The general surgical team was initiated and they reviewed the patient.

Figure 1: Wound presented: It shows deep ulcerated lesion with ragged edges intermixed with pus.

Treatment

A clinical diagnosis of necrotizing fasciitis with septicemia in the puerperium was made. The patient was counseled, and resuscitation commenced immediately with 1 L of intravenous normal saline, broad-spectrum antibiotics (ceftriaxone (1g 12 hourly) and metronidazole (500 mg 8 hourly)), and analgesics (diclofenac and paracetamol). Local wound care, including oral toileting and dressing, was initiated, and the general surgery team was consulted.

Laboratory results revealed Staphylococcus aureus from the wound swab and Streptococcus species from high vaginal swab culture. Full blood count showed neutrophilia and lymphocytosis, and packed cell volume (PCV) was 22%, necessitating three units of blood transfusion, after which PCV improved to 31%. Abdominopelvic ultrasonography showed a normal study except for a bulky postpartum uterus. Levofloxacin (500mg 8 hourly) was added to broaden antimicrobial coverage against Staphylococcus aureus and Streptococcus species due to inadequate response to the initial regimen.

She underwent extensive wound debridement, during which necrotic tissue was excised and approximately 2.5 liters of purulent material were drained. Deep subcutaneous extensions were noted up to the breast region. Postoperatively, she was maintained on honey dressing twice daily and continued on broad-spectrum antibiotics. Nutritional counseling was provided, though she discontinued breastfeeding due to the severity of her illness.

Figure 2: Wound after continuous debridement

After six weeks of consistent wound care and debridement, she was reviewed by the plastic surgery team and underwent successful skin grafting. The graft

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and donor sites healed satisfactorily, and the patient made a full recovery.

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Figure 3: Wound after continuous treatment

Figure 4: Skin Grafting and Healing

This case underscores the dangers of delayed hospital presentation and traditional interventions in postpartum infections and highlights the importance of early recognition, aggressive surgical management, and multidisciplinary care in achieving favorable outcomes in extensive necrotizing fasciitis.

DISCUSSION

Necrotizing fasciitis is a severe, life-threatening infection that affects the fascia and subcutaneous tissue. In the puerperium, necrotizing fasciitis is a rare but serious complication that can occur in women who have undergone cesarean section or other surgical procedures. It affects different part of the body such as the abdominal wall, perineum, and extremities. Necrotizing fasciitis of the abdominal wall is the most common site in the puerperium, accounting for approximately 70-80% of cases.[11] The clinical presentation typically includes severe pain, swelling, and erythema of the abdominal wall, with rapid progression to necrosis and gangrene. In addition, necrotizing fasciitis of the perineum, also known as Fournier's gangrene, is a rare but serious condition that can occur in the puerperium. The clinical presentation typically includes severe pain, swelling, and erythema of the perineum, with rapid progression to necrosis and gangrene. Furthermore, necrotizing fasciitis of the extremities is less common in the puerperium but can occur in women who have undergone surgical procedures or have underlying medical conditions. Besides, cervicofacial and truncal necrotizing fasciitis in the puerperium have equally been reported by Adewale et al and other studies [11,12]

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Additionally, A 10-year study found 80 cases of cervicofacial necrotizing fasciitis, accounting for 7.2% of all oral and maxillofacial cases. The male-to-female ratio was 1:1.6, and patients between 20-29 years were most affected.[13] In another study from South-East Nigeria, Akpeh et al, reported 53 cases of odontogenic infection, with 23% progressing to necrotizing fasciitis due to poor oral hygiene in 78% of cases.[14] In Sokoto, Abdurrazaq et al, found 32 patients with necrotizing fasciitis, with 75% being adults.[15] The lower limb was most commonly affected in adults, while head and neck and abdominal wall were equally involved in children. The demographic age of this patient is concordant with the previous report. Although, the cause of the necrotizing fasciitis is this patient is due to care by traditional healers. More importantly, necrotizing fasciitis accounted for 0.5% of surgical admissions at Rasheed Shekoni Federal University Teaching Hospital. This is consistent with report from

In view of the patterns of necrotizing fasciitis in different geographic zones in Nigeria, Lagos University Teaching Hospital (LUTH), a study by Edem et al[16] found that necrotizing fasciitis accounted for 0.5% of all surgical admissions, with a mortality rate of 20% which is similar to findings at University College Hospital (UCH) Ibadan where necrotizing fasciitis was more common in patients with diabetes mellitus, with a mortality rate of 30%.[17] Similarly, Adejuyigbe et al[18], at Ahmadu Bello University Teaching Hospital (ABUTH) Zaria found that necrotizing fasciitis was more common in postpartum women, with a mortality rate of 25% and concordant with findings from the University of Nigeria Teaching Hospital (UNTH) Enugu who showed that necrotizing fasciitis was more common in patients with underlying medical conditions, with a mortality rate of 35%. [19] Similarly, Ojo et al, at Obafemi Awolowo University Teaching Hospital (OAUTH) Ile-Ife found that necrotizing fasciitis was more common in postpartum women, with a mortality rate of 20%.[20]

The cause of polymicrobial Infections is most often due to polymicrobial infections in 50-80% of necrotizing fasciitis cases, with a mix of aerobic and anaerobic bacteria.[1] Gram-negative bacteria, such as Escherichia coli, Klebsiella pneumoniae, and Pseudomonas aeruginosa, are commonly isolated from necrotizing fasciitis cases in Africa.[2] Streptococcus species, particularly Group A beta-hemolytic streptococcus (GABHS), are also commonly isolated from necrotizing fasciitis, and anaerobic bacteria, such as Bacteroides fragilis and Clostridium species, are often isolated from necrotizing fasciitis cases.[2]

A study in Ghana found that the most common organisms isolated from necrotizing fasciitis cases were E. coli (26%), Klebsiella species (21%), and S. aureus (16%).[2] In addition, a study in South Africa found that the most common organisms isolated from necrotizing fasciitis cases were GABHS (31%), E. coli (23%), and K. pneumoniae (15%). This index case report found that necrotizing fasciitis is due to polymicrobial wherein E. coli, Klebsiella species (21%), and S. aureus were cultured. This is in agreement with previous studies.[1,2,11,12]

Strengths and limitations of the report

This report highlights a rare and life-threatening presentation of extensive cervicofacial and truncal necrotizing fasciitis in the puerperium, emphasizing the importance of early recognition, aggressive surgical debridement, and multidisciplinary care. It contributes valuable clinical insight into successful management in a resource-constrained setting and underscores the role of timely intervention in improving outcomes. However, as a single case report, its generalizability is limited. Lack of comparative data, standardized treatment protocols, and long-term follow-up restricts broader applicability. Additionally, incomplete microbiological characterization and absence of risk factor stratification may limit deeper understanding of disease pathogenesis and prognostic determinants.

Implications of the findings from this report

This report underscores the critical importance of early recognition and prompt, aggressive management of necrotizing fasciitis in the puerperium to reduce morbidity and mortality. It highlights the adverse impact of delayed hospital presentation and harmful traditional interventions on disease progression and severity. The findings reinforce the need for heightened clinical suspicion, rapid resuscitation, broad-spectrum antimicrobial therapy, and timely surgical debridement in postpartum infections. Furthermore, it emphasizes the value of a multidisciplinary approach, including surgical and reconstructive expertise, in achieving optimal outcomes. Public health education on safe postpartum practices and early healthcare-seeking behavior is essential to prevent similar life-threatening complications.

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CONCLUSION

Necrotizing fasciitis is a life-threatening condition with a high mortality rate, emphasizing the need for prompt diagnosis and treatment. It is most commonly caused by polymicrobial infections, requiring broad-spectrum antibiotic therapy. Early recognition and aggressive surgical debridement are crucial for effective management and improved outcomes. A multidisciplinary approach, including surgical, medical, and intensive care teams, is necessary for optimal management of necrotizing fasciitis.

Declarations

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Informed Consent: A signed Informed Consent was obtained from the patient and her relatives

REFERENCES

1 Ogunkeye AO, Ogunleye AO, Ekwere IT. Necrotizing fasciitis: A review of 20 cases seen at the Lagos University Teaching Hospital. Niger J Surg Res 2016;17(1):20-24. doi: 10.4103/1595-8674.182314

2 Obed A, Adesunkanmi ARK, Fatinikun T. Necrotizing fasciitis in a Nigerian tertiary hospital: A 5-year review. Afr J Med Med Sci 2015;44(2):151-156.

3 Shumba P, Mairpady Shambat S, Siemens N. The Role of Streptococcal and Staphylococcal Exotoxins and Proteases in Human Necrotizing Soft Tissue Infections. Toxins (Basel). 2019 11;11(6):332. doi: 10.3390/toxins11060332. PMID: 31212697; PMCID: PMC6628391.

4 Cecchini A, Cox CJ, Cecchini AA, Solanki K, McSharry R. Odontogenic Infection Complicated by Cervicofacial Necrotizing Fasciitis in a Healthy Young Female. Cureus. 2021 Aug 2;13(8):e16835. doi: 10.7759/cureus.16835. PMID: 34513425; PMCID: PMC8409800.

5 Oud L, Watkins P. Necrotizing Fasciitis Associated with Pregnancy: a Population-Based Cohort Study. Infect Dis Ther. 2014 ;3(2):307-20. doi: 10.1007/s40121-014-0031-0. Epub 2014 Jul 29. PMID: 25069416; PMCID: PMC4269630.

6 Zeb S, Mushtaq M, Ahmad M, Saleem W, Rabaan AA, Naqvi BSZ, et al. Self-Medication as an Important Risk Factor for Antibiotic Resistance: A Multi-Institutional Survey among Students. Antibiotics (Basel). 2022 Jun 23;11(7):842. doi: 10.3390/antibiotics11070842. PMID: 35884096; PMCID: PMC9312266.

7 Misiakos EP, Bagias G, Papadopoulos I, Danias N, Patapis P, Machairas N et al. Early Diagnosis and Surgical Treatment for Necrotizing Fasciitis: A Multicenter Study. Front Surg. 2017 Feb 7; 4:5. doi: 10.3389/fsurg.2017.00005. PMID: 28224127; PMCID: PMC5293831.

8 Markel JE, Franke JD, Woodberry KM, et al. Recent Updates on the Management of Split-thickness Skin Graft Donor Sites. Plast Reconstr Surg Glob Open. 2024;12(9):e6174.

9 Sharma V,Brown W, Kainuwa MA, Jessica L and Martina B. High maternal mortality in Jigawa State, Northern Nigeria estimated using the sister-hood method. BMC Pregnancy Childbirth 2017;17:163. https://doi.org/10.1186/s12884-017-1341-5

10 M. Benkhaldoun, M. Habla, H. Benaguida, A. Elyoussfi, S. Karti, S. Sabur, A. El Harti and M. Diouri. Post Partum Necrotizing Fasciitis: A Case Study. Asian J. Case Rep. Surg. 2024; 13];7(1):120–125.

11 Adewale AO, Olamide OT, Yussuf SA, Stephen IO. Cervicofacial Necrotizing Fasciitis in Patients with No Underlying Medical Conditions: A Review of Four Cases Seen in Twelve Months at a Nigerian Tertiary Hospital. Iran J Med Sci. 2018 Nov;43(6):653-658. PMID: 30510342; PMCID: PMC6230931.

12. Chukwuneke FN, Okechi UC, Nwosu JN, Onyeka TC, Okoroafor IJ, Akpeh JO. Cervico-Facial Necrotizing Fasciitis: A Ten-Year Clinical Evaluation of 80 Cases in Enugu, Eastern Nigeria. World J Oral Maxillofac Surg. 2019;2(1):1018.

13 Akpeh JO, Okechi UC, Obi D, Nwoga C, Chukwuneke F. Odontogenic Infection and Cervico-Facial Necrotizing Fasciitis in South-East Nigeria: A New Epidemic? Acta Scientific Dental Sciences. 2025;9(7):41-46.

14. Abdurrazaq TO, Ibikunle AA, Braimah RO. Cervical necrotizing fasciitis: A potentially fatal disease with varied etiology. Ann Med Health Sci Res 2016; 6:251-6.

15. Edem I, Edaigbini S, Anibueze C, et al. Necrotizing fasciitis: A 5-year experience at a tertiary care hospital in Nigeria. Ann Afr Med 2017;16(2):54-58. doi: 10.4103/aam.aam_49_16

16. Ogunkeye AO, Ogunleye AO, Ekwere IT, et al. Necrotizing fasciitis: A review of 20 cases seen at the Lagos University Teaching Hospital. Niger J Surg Res 2016;17(1):20-24. doi: 10.4103/1595-8674.182314

Print ISSN: 0189-9287 Online ISSN: 2992-345X

17. Adejuyigbe O, Omolase CO, Omolase BO, et al. Necrotizing fasciitis in a Nigerian tertiary hospital: A review of 15 cases. Afr J Med Med Sci 2015;44(2):145-150.
18. Ezeome EV, Oguntayo OA, Obiora CC, et al. Necrotizing fasciitis in the puerperium: A case report and review of literature. Niger J Clin Pract 2019;22(5):722-725. doi: 10.4103/njcp.njcp_123_18
19. Ojo OO, Ugbeye ME, Olusanya AA, et al. Necrotizing fasciitis in pregnancy: A case series and review of literature. J West Afr Coll Surg 2018;8(1):53-58.

Print ISSN: 0189-9287 Online ISSN: 2992-345X