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RESEARCH ARTICLE

CATASTROPHIC CONSEQUENCES OF A TRIVIAL TRAUMA IN AN IMMUNOCOMPETENT PATIENT: A CASE REPORT

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Abstract

Necrotising fasciitis (NF) is an uncommon but fulminant soft tissue infection characterized by rapidly spreading necrosis of fascia and subcutaneous tissue, often accompanied by severe systemic toxicity. It has been historically described as “flesh-eating disease,” and despite advances in critical care and surgical management,it remains associated with significant morbidity and mortality, with reported mortality rates ranging from 20% to over 40% in some cohorts.[1],[2]The disease can be polymicrobial (Type I), typically involving aerobic and anaerobic organisms, or monomicrobial (Type II) ,most frequently due to Strepto coccus pyogenes or Staphylococcus aureus, including methicillin resist ant strains.[3] Risk factors include diabetes mellitus, peripheral vascular disease, immunosuppression, chronic renal failure, obesity, non ambula tory patient and recent trauma or surgical wounds.[4] However, necrotisi ng fasciitis has also been documented in patients without identifiable risk factors, making early clinical suspicion crucial.[5]

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Introduction:-

Early diagnosis is frequently challenging in NF due to nonspecific initial symptoms that can mimic cellulitis or simple soft tissue infection. Prompt recognition, aggressive surgical debridement, broad-spectrum antimicrobial therapy, and critical care support remain the mainstays of treatment. Recent studies have highlighted the role of advanced diagnostic tools—including imaging modalities and laboratory scoring systems such as the Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC)—to facilitate earlier recognition and improve outcomes.[6]In this report, a case of a 56-year-old male with necrotising fasciitis of the lower limb is discussed , underscoring the importance of timely multidisciplinary management.

Case Report:

A 56 years non diabetic, non hypertensive , non addict male presented to the Emergency department with pain in the inner aspect of left thigh for the last 10 days without any swelling, fever, weakness of any part of the body. He is a cook by occupation and has a history of fall by the roadside 20 days ago. There was no history of nausea, vomiting, exertional breathlessness orthopnoea, PND or any visual or hearing impairment. There is no history of

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chest pain or calf muscle tenderness.On examination, the patient was alert, conscious, cooperative, oriented to time, place and person. There was mild pallor, vitals were stable and there was mild tenderness in the inner side of the left thigh with mild abrasion. All the peripheral pulses were palpable, there was no organomegaly.
Examination of Respiratory, Cardiovascular, Neurological, Haemotological and Rheumatological system were unremarkable.Patient was put on oral antibiotics, oral paracetamol and PPI. From day 5 of admission, the pain increased over left thigh and temperature was 100.0 degree F. There was diffuse swelling over the affected region of the thigh with desquamation of superficial part of the skin.Initial investigations revealed no abnormalities of Fasting plasma glucose, urea, creatinine, electrolytes. There was mild hypoalbuminemia with normal Chest X Ray, ECG.

But when investigations were sent again on day 5 of admission, total leukocyte count was 54 ,000/ mm3 with toxic granules and Haemoglobin was 9 gm/dl. Platelet count was normal.Patient became disoriented and sodium was 105 mmol/l with mild hyperkalemia. USG left thigh revealed diffuse subcutaneous edema along the lateral aspect of the left lower limb. EEG revealed encephalopathy, Procalcitonin was 22U/L and patient was put on Intravenous Meropenem , Clindamycin and Vancomycin. Three iv antibiotics were administered keeping in mind the Provisional diagnosis of Necrotising fascites.DVT was excluded by venous doppler of the affected lower limb.

Patient refused MRI of the affected foot. CxR revealed haziness of the left lower zone and HRCT THORAX showed left sided consolidationPatient developed hypoglycemia,25% Dextose was administered .3 percent hypertonic saline 100 ml was administered keeping in mind the risk of osmotic demyelination syndrome .Patient was put on Ryle's tube, catheter and iv fluid 0.9% Sodium chloride was administered keeping a close monitoring on volume status with IVC diameter and collapsibility. EF was 60% with no regional or diffuse wall motion abnormality. Cardiac biomarkers of ACS were unremarkable.General Surgery Consultant noticed a blackish discoloration and advised immediate fasciotomy and wound debridement as a life saving procedure.Patient started to improve from Day 5 of administration of triple iv antibiotic therapy, sodium rose to 130 mmol/l ,potassium was normal. Hyponatremia work up didn't reveal any definite diagnosis except mild decrease in urine sodium.

Ryle's tube was removed and patient was started on oral feeding and patient underwent fasciotomy and wound debridement. Biopsy revealed mixed inflammation without malignancy. Pus culture sensitivity was negative as patient was already on antibiotics. Blood culture and urine culture reports revealed no abnormality. Reports of Malaria, Dengue, Typhoid, Scrub Typhus and Leptospira were unremarkable.Patient improved further after the procedure(Figure 1) , antibiotics were tapered down and the patient was discharged on day 25 of admission.The patient had normal TLC with electolytes during discharge after receiving triple iv antibiotics for 14 days .The patient came to follow up for secondary suturing and was discharged with healthy wound(Figures 2,3). Presently, he is doing well with normal mobility.The important history in the patient was sustaining roadside injury which lead to this catastrophic result and stresses the fact that with proper history taking, difficult diagnoses also are seldom missed.This case of necrotising fasciitis is an emergency with high morbidity and mortality.

Discussion:-

Necrotising fasciitis(NF)continues to be a clinical emergency with high mortality if diagnosis and intervention are delayed. The initial presentation may be deceptively benign, often resembling less severe soft tissue infections such as cellulitis. Severe pain disproportionate to physical findings is a hallmark clinical clue and should raise suspicion for NF, particularly when accompanied by systemic signs of toxicity.[7]

Epidemiology and Risk Factors:-

The annual incidence of NF has been variably reported between 0.3 and 15 cases per 100,000 population globally, with higher rates in populations with increasing prevalence of diabetes mellitus and cardiovascular disease.[8] Diabetes remains the most commonly identified predisposing condition, with up to 60% of patients with NF having underlying diabetes.[9] Our patient did not have pre existing diabetes or immunocompromised state, illustrating that NF can occur even in the absence of classic risk factors and comorbities.

Microbiology and Pathophysiology:-

Polymicrobial infections (Type I) predominate in the perineal and truncal regions, whereas monomicrobial NF (Type II) caused by Group A Streptococcus or S. aureus tends to involve the limbs.[10] Polymicrobial synergy facilitates rapid tissue destruction via a combination of bacterial virulence factors, ischemia, and host immunologic response.[9] Contemporary studies have also identified community-associated methicillin-resistant Staphylococcus

aureus (CA-MRSA) as an emerging pathogen in NF, with implications for empirical antibiotic selection.[11]

Diagnosis:-

Although NF remains a clinical diagnosis, adjunctive tools may assist in early detection. The LRINEC score—which incorporates CRP, white blood cell count, hemoglobin, sodium, creatinine, and glucose—has demonstrated variable predictive value. While some studies report high specificity for scores ≥6, others highlight limited sensitivity, particularly early in disease course.[6] Imaging studies such as ultrasound and MRI can detect subcutaneous gas and fascial fluid collections and may be useful when clinical diagnosis is uncertain; however, reliance on imaging should not delay surgical exploration.[12]

Management:-

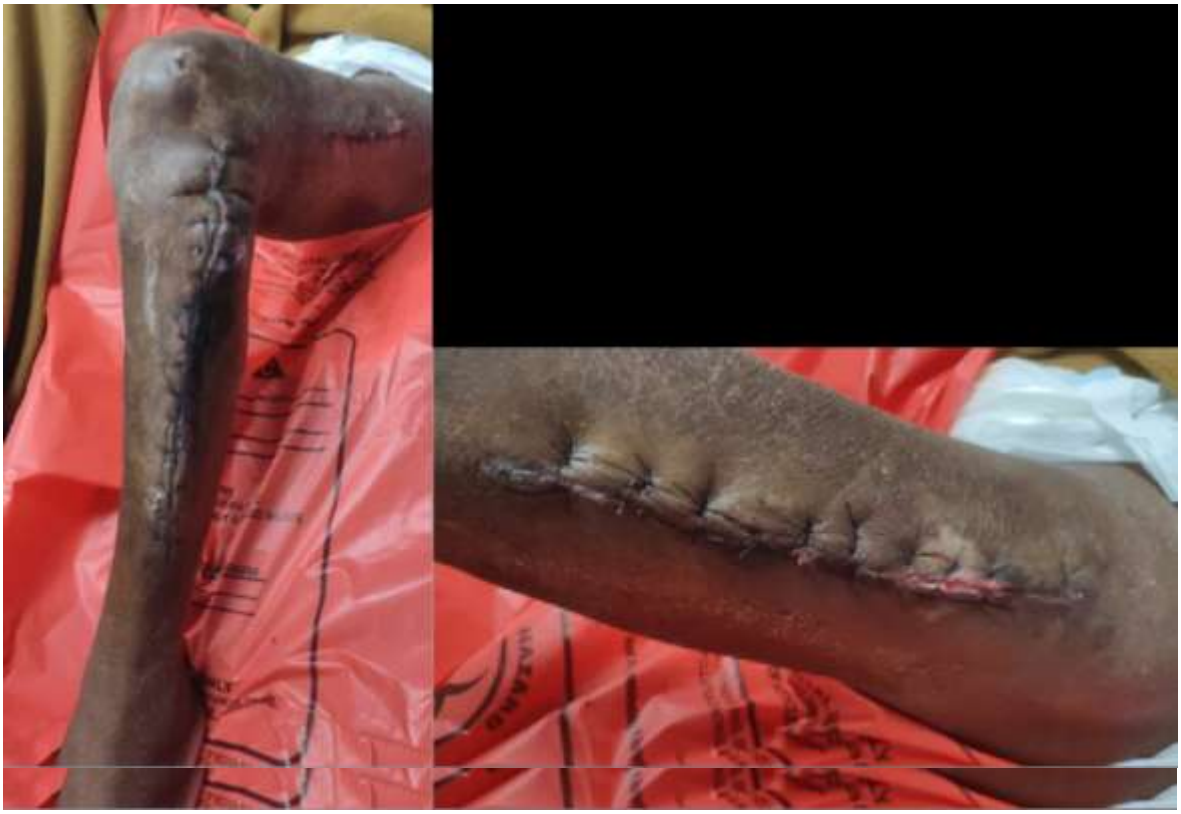
The cornerstone of management is urgent and thorough surgical debridement. Early and repeated debridement has been consistently associated with improved survival.[13] Broad-spectrum empirical antibiotics—targeting Gram-positive, Gram-negative, and anaerobic organisms—should be initiated immediately, then tailored based on culture results. Our approach included emergency surgery and combination antimicrobial therapy consistent with current recommendations. Adjunctive therapies such as intravenous immunoglobulin (IVIG) have been proposed in severe streptococcal infections, although evidence remains mixed and reserve use for select patients.[14]

Prognosis and Outcomes:-

Recent retrospective analyses suggest that early recognition and multidisciplinary care can reduce mortality and limb loss.[8] Yet, delays in surgical intervention—even by hours—have been correlated with significantly worse outcomes.[7] In our case, prompt surgical management and intensive care resulted in very good prognosis, demonstrating the impact of early intervention.

Figure 1 Post fasciotomy and wound debridement before secondary suturing

Figure 2



Secondary suturing post fasciotomy and wound debridement

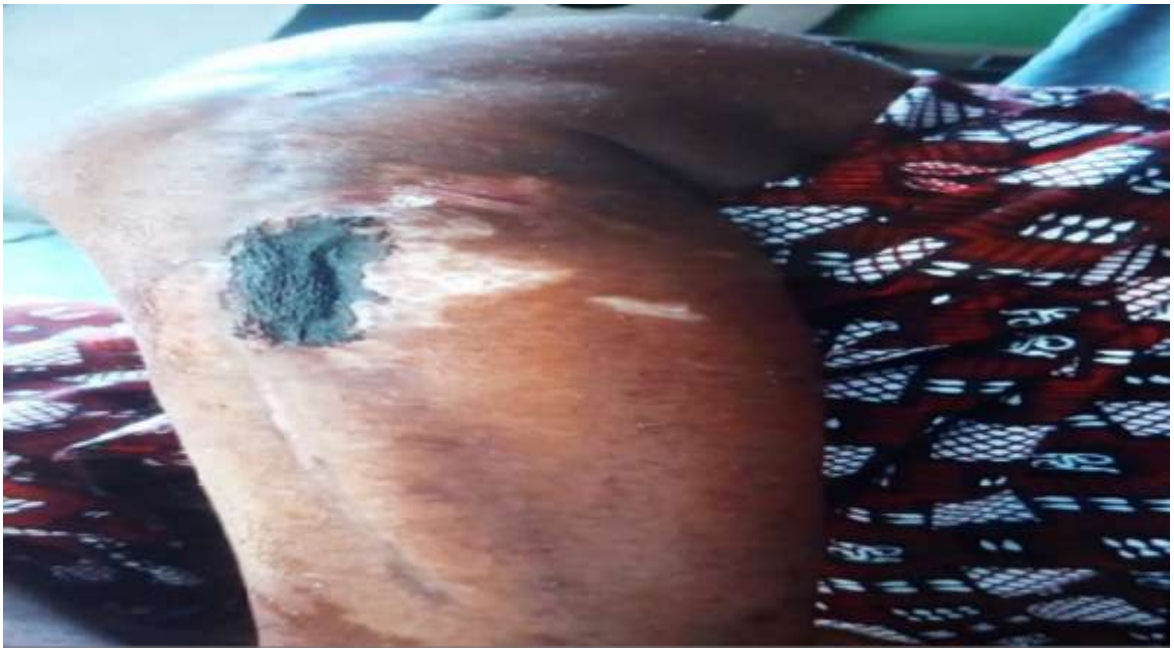


Figure 3 Healed skin after secondary suturing

Conclusion:-

Necrotizing fasciitis is a rapidly progressive, life-threatening soft tissue infection that requires a high index of clinical suspicion for timely diagnosis. This case highlights the importance of early recognition of severe pain, systemic toxicity, and rapidly evolving soft tissue changes, even when initial findings may appear very subtle.Prompt surgical exploration and aggressive debridement, combined with broad-spectrum intravenous antibiotics and intensive supportive care, remain the cornerstone of management and are critical in reducing morbidity and mortality.Our patient's clinical course underscores the value of a multidisciplinary approach involving surgery, infectious disease, critical care, and wound management teams. Early intervention in this case contributed significantly to favourable clinical outcomes and limb preservation. Delays in diagnosis or inadequate debridement are strongly associated with poor prognosis, emphasizing that necrotizing fasciitis should be considered a surgical emergency until proven otherwise.In conclusion, heightened awareness, rapid clinical decision-making, and aggressive management are essential to improve survival rates in necrotizing fasciitis. Continued reporting of such cases is vital to enhance understanding of risk factors, optimize treatment strategies, and reinforce the necessity of early, decisive intervention.

Conflicts of Interest-
None

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Nil

References:-

1. Wong CH, Khin LW, Heng KS, et al. The LRINEC score: A tool for distinguishing necrotizing fasciitis from other soft tissue infections. Crit Care Med. 2004;32(7):1535–1541.
2. Stevens DL, Bryant AE. Necrotizing soft-tissue infections. N Engl J Med. 2017;377(23):2253–2265.
3. Hasham S, et al. Necrotising fasciitis. BMJ. 2005;330(7495):830–833.
4. Anaya DA, Dellinger EP. Necrotizing soft-tissue infection: Diagnosis and management. Clin Infect Dis. 2007;44(5):705–710.
5. Misiakos EP, et al. Current concepts in the management of necrotizing fasciitis. Front Surg. 2014;1:36.
6. Sharma D, et al. Diagnostic accuracy of LRINEC score in early detection of necrotizing fasciitis: A systematic review. Infect Dis (Lond). 2025;57(1):13–22.
7. Hasham S, et al. Clinical features distinguishing NF from severe cellulitis. Ann R Coll Surg Engl. 2018;100(7):563–568.
8. Tang LM, et al. Trends in incidence and outcomes of necrotising fasciitis: A nationwide analysis. J Infect. 2024;88:45–53.
9. Elliott D, et al. Necrotizing soft tissue infections: Risk factors and outcomes. Surgery. 2023;173(4):1034–1041.
10. Elliott DC, Kufera JA, Myers RA. The microbiology of necrotizing fasciitis. Am Surg. 2015;81(11):982–986.
11. Miller LG, Perdreau-Remington F, et al. MRSA skin infections: Epidemiology & outcomes. Clin Infect Dis. 2019;29(5):1178–1186.
12. Chen SL, et al. Imaging in necrotising fasciitis: Role of MRI and CT. Radiographics. 2022;42(2):457–472.
13. Brook I. The role of early surgical debridement in NF management. J Surg Res. 2023;284:449–456.
14. Kaul R, et al. IVIG therapy in severe streptococcal NF: A randomized trial. Lancet Infect Dis. 2020;20(12):1467–1475.