

# Purpura fulminans evolving into necrotising fasciitis

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## Abstract

Purpura Fulminans is a haemorrhagic condition with intravascular thrombosis and infarction of the skin that is rapidly progressive, accompanied by disseminated intravascular coagulation and vascular collapse which can be infective or idiopathic. Necrotizing fasciitis is a potentially fatal infection involving rapidly progressive, widespread necrosis of the superficial fascia. We report a case of Purpura fulminans evolving into Necrotising fasciitis. We report a teenage girl with Purpura Fulminans evolving into necrotizing fasciitis

**Key words:** Purpura Fulminans, Necrotizing fasciitis, intravascular thrombosis, disseminated intravascular coagulation

## Introduction

Purpura fulminans (PF) is a haemorrhagic condition characterized by a triad of hypotension, disseminated intravascular coagulation (DIC) and purpura leading to tissue necrosis with small vessel thrombosis & usually associated with either benign infection or severe sepsis. Necrotizing fasciitis is a potentially fatal infection involving rapidly progressive, widespread necrosis of the superficial fascia. Though these two conditions are distinctly separate entities, tissue necrosis that occurs in purpura fulminans can invite multibacterial infections and their symbiotic relationship can eat away the muscle & fascia.

## Case report

16 year old unmarried girl presented with 3 days history of fever for which she has received injection diclofenac on both her buttocks & 2 days after that it was followed by multiple reddish painful lesions and few blood filled blisters over gluteal region & thighs. Few days later she developed similar lesions over her legs and arms. Patient also gave history of decreased urine output.

Physical examination revealed hypotension & dermatological examination revealed multiple well defined tender ecchymotic patches with perilesional erythema & few hemorrhagic bullae over gluteal region, posterior aspect of thighs, legs and lateral aspect of both arms, clinically presenting as Purpura Fulminans (Fig. 1).



*Fig.1. multiple well defined tender purpuric and ecchymotic patches with perilesional erythema and few hemorrhagic bullae*

Lab investigations revealed anaemia, thrombocytopenia, elevated prothrombin time and C Reactive Protein. Her bleeding time, clotting time and were normal. Patient was treated with Inj.Cefotaxim, Heparin, 2 units of Blood, Intravenous Immunoglobulin and Heparin. Lesion over legs and arms improved, but during the course of the treatment gluteal and upper thigh lesions evolved into deep ulcers with involvement of the sub cutis and fascial plane. Necrotising Fasciitis was diagnosed .Patient was shifted to surgical care. Pus culture grew Staphylococcus aureus and Pseudomonas aeruginosa and she was treated with Inj.Piperacillin&Tazobactam .Histopathology showed predominantly neutrophils, few lymphocytes & plasma cells in the dermis with numerous capillaries with extravasated RBCsThe infiltrate extended into the subcutaneous fat (Fig.2, 3)

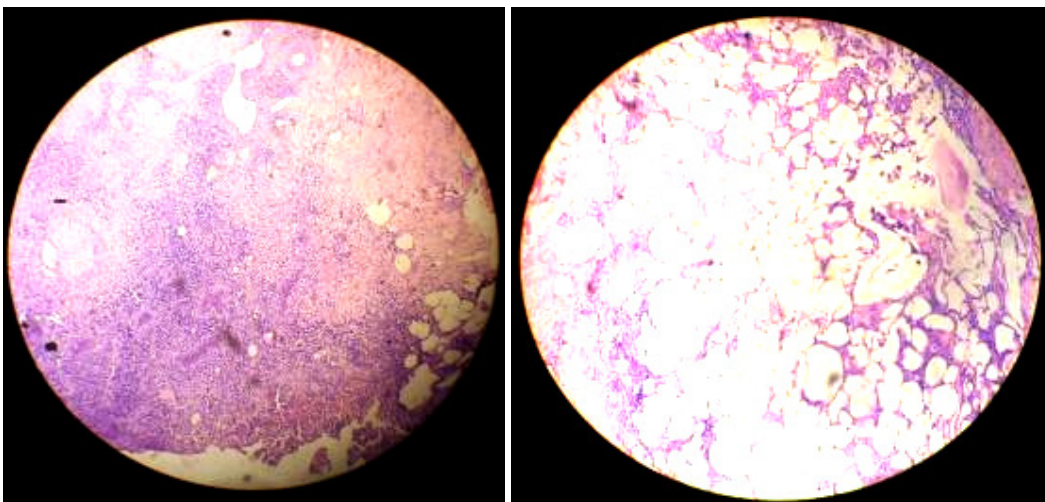


Fig.2,3. H&E section showing inflammatory infiltrate, numerous capillaries with extravasated RBCs. High power showing the infiltrate extending into the subcutaneous fat

Surgical debridement under local anaesthesia was done. Fluid and nutritional management was given. Patient was taken up for further wound debridement and plastic reconstruction. After a period of 5 months, the entire wound healed with scar (Fig.4).



Fig.4. Healing ulcers of necrotizing fasciitis

## Discussion

PF is a serious life-threatening disorder characterized by sudden onset of cutaneous haemorrhage and necrosis caused by DIC and dermal vascular thrombosis<sup>1</sup>. It can be of three types: 1) inherited or acquired abnormalities of the protein C or other coagulation systems, 2) 'acute infectious' PF and 3) 'idiopathic'<sup>2</sup>.

Necrotizing fasciitis – this infection may arise at a site of minimal trauma or post operative incision. The most common cause is group A streptococci. A mixed facultative and anaerobic flora can also cause it. Clinical course can be destructive if there is multibacterial symbiosis and synergy<sup>3, 4</sup>. Use of NSAIDs has been reported to allow progression of skin & soft tissue infections. Bacteraemia & hypotension can be present without other organ-system failure.

Our patient initially presented with features of Purpura Fulminans, however before the classical DIC could set in, patient was treated adequately and consumptive coagulopathy was averted. Unfortunately thigh and gluteal region lesions got colonized by the microbes and she developed necrotizing fasciitis which was managed

with proper supportive care, early surgical intervention and high order antibiotic therapy.

## **Conclusion**

PF (infective type) and necrotising fasciitis are destructive infections that involve both skin & soft tissue having different presentation & pathophysiology. However watchful observation, in cases of all Purpura Fulminans with a high index of suspicion to detect early, the evolving complications like, necrotizing fasciitis and early surgical intervention will minimize tissue loss and save life.

## **References**

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