

Necrotizing Fasciitis of the Head and Neck Region

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Necrotising fasciitis is a soft tissue infection which has been associated with streptococcal organism. A review of 12 patients who presented at Mayo Hospital, Lahore treated with a combination of aggressive surgery and medications. The outcome was very satisfactory and it is advocated that early identification along with proper surgical management followed by medical treatment be instigated.

Key words: Necrotising fasciitis, streptococcal infection, diabetes mellitus

The study was conducted at The Department of Oral and Maxillofacial Surgery, Mayo Hospital, Lahore, Pakistan. The aim of the study is to review the use of a certain modality of treatment (Surgical with Medicinal) for Necrotizing Fasciitis and report its outcome.

Necrotizing Fasciitis is usually found in the immunocompromised patients¹. Mortality rate is high and presents a challenge to anesthesiology who must secure an airway to administer anesthesia safely². Craniofacial Necrotizing Fasciitis is a soft tissue infection of the face that spreads at the level of fascia causing thrombosis with compromised blood supply and resulting in necrosis with loss of large areas of skin. Most infections are polymicrobial with both aerobic and anaerobic bacteria. No single organism or combination of organisms is consistently responsible; however invasive beta-hemolytic Lancefield group A Streptococcal organisms have been associated with severe infections of this type³. Sub-acute necrotizing fasciitis is caused by gas-producing Staphylococcus aureus. Necrotizing fasciitis can occur after perforating trauma or surgery.

Materials :

Subjects: Twelve patients with Necrotizing Fasciitis were studied. Nine of these were diabetics and three were non-diabetics. Age range of six diabetics were 50-70 years, while three young patients were of 28-32 years age-range. Three non-diabetic patients were between the age of 18-36 years.

Apparatus: In all cases the assessment consisted of complete history as well as clinical and radiographic examination. The routine pre-operative investigations included Complete Blood Picture, Blood Sugar Level, Urine test, Blood Culture, Chest X-ray and C.T. Scan.

Blood Sugar level and Vital Signs were monitored regularly.

Nutrition was maintained/ improved by the administration of Intra-venous Aminovil, Lipofuscin, Albumin and Vitamin therapy. Intra-venous antibiotics (Ciprofloxacin 1g ,12 hourly⁴ with Flagyl 500mg 8 hourly) were given to all patients along with a suitable anti-pyretic. This was followed by the surgical procedure.

Discussion:

After the pre-operative measures (i.e. nutrition maintenance and Anti-biotic cover) patients were prepared for General Anesthesia. Under General Anesthesia, dependent incision parallel to vascular supply was given; debridement performed in all cases with normal saline followed by Hydrogen peroxide and finally with Flagyl wash (1:1 Flagyl with Normal Saline). The necrotic soft tissue was removed.

Debridement and wash was continued on daily basis until an infection-free granulation tissue was achieved. In cases where patients responded well, the defects were reconstructed with various flaps. Pectoralis Major flap was used to cover the defect in two patients, the Latissimus dorsi flap was used in one patient. In two other patients, forehead flaps were used while only in one female patient, the Radial Forearm flap was used for reconstruction.

Results:

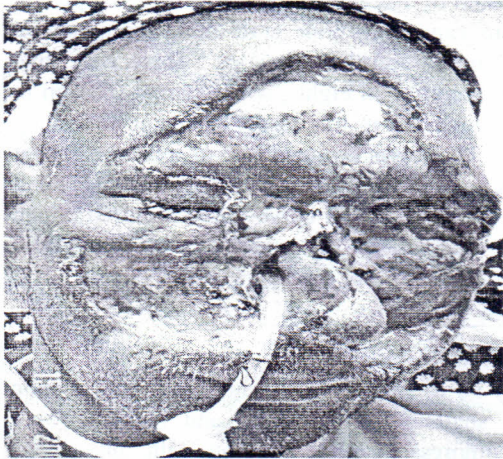
Out of the nine diabetic patients, five old patients (60-70 years) died because of advanced Fasciitis involving the forehead region. Only one survived. All the three young diabetic patients also survived.

Out of three non-diabetic patients, one patient lost vision and later on died due to Cavernous Sinus Thrombosis and Meningitis. One patient didn't turn up for follow-up.

Four diabetic patients were saved out of a total 9 patients so success rate is 44%. Out of the 3 non-diabetics, only 2 survived, so success rate in this case is 66%. The success rate in diabetics will always be low owing to the poor healing and the increased susceptibility to healing in these patients.

The blood sugar levels were monitored and controlled regularly. Debridement with Hydrogen Peroxide, Normal Saline and Flagyl Washes was done on daily basis to root out the infection. Ciprofloxacin was prescribed in all the patients along with Metronidazole. Blood Cultures were run for all the patients and in one case fungal hyphae were reported. In this particular case, Amphotericin B was prescribed along the standard prescription (i.e. with Ciprofloxacin and Metronidazole).

It is pertinent to note that the immune system doesn't work properly in these patients owing to defects in Neutrophil function. Infection susceptibility also increases with hyper-glycemia. Old age also accounts for the poor healing and that is why out of a total 6 old diabetic patients, 5 died due to intra-cranial infections despite strict monitoring and assessment. It was also noticed that out of the twelve patients, eleven had involvement, to varying degree, of the maxilla/e, cheek and palate area while only one patient had mandibular involvement.



Conclusion:

Early diagnosis and proper treatment are the key issues affecting the chances of recovery for patients with necrotizing fascitis⁵. The clinical suspicion of this condition calls for prompt intervention with effective and aggressive management including surgical as well as therapeutic measures. Age, Diabetes, Malnutrition and Low Socio-economic status are different identified factors that influence the prognosis of Necrotizing Fascitis of the Cervicofacial region.

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