



Necrotizing fasciitis in children: diagnostic and therapeutic aspects

Meltem Bingöl-Koloğlu^{a,*}, Raşan Vargün Yıldız^a, Bilal Alper^a, Aydın Yağmurlu^a, Ergin Çiftçi^b, İsmail Haluk Gökçora^a, Erdal İnce^b, Murat Emiroğlu^c, Hüseyin Dindar^a

^aDepartment of Pediatric Surgery, Ankara University School of Medicine, Ankara 06100, Turkey

^bDivision of Pediatric Infectious Disease, Department of Pediatrics, Ankara University School of Medicine, Ankara 06100, Turkey

^cDepartment of Plastic and Reconstructive Surgery, Ankara University School of Medicine, Ankara 06100, Turkey

Index words:

Necrotizing fasciitis;
Streptococcus pyogenes;
Children;
Soft tissue infections

Abstract

Background: Necrotizing fasciitis (NF) is a severe life-threatening soft tissue infection characterized by rapidly spreading necrosis of the fascia and the subcutaneous tissue. Its incidence owing to invasive *Streptococcus pyogenes* has significantly increased in children recently. Our experience with NF in children to describe diagnostic and therapeutic aspects is hence presented herein.

Methods: Records of children who were treated for NF in our unit from 1999 to 2006, inclusive, were reviewed retrospectively. Information recorded for each patient included medical history, clinical characteristics, diagnostic procedures, treatment methods, and the outcome.

Results: Thirteen patients with a mean age of 35 months were treated for NF during the study period. All of the 13 children had no previous immunosuppression. The predisposing factors were composed of varicella lesions, intramuscular injections, application of a cream containing menthol to the cervical region, penetrant gluteal trauma, omphalitis, dental abscess, and streptococcal toxic shock syndrome. The most common site of the initial involvement was the abdominal wall, followed by the gluteal region and thigh, head and neck, and upper and lower extremities. The initial skin presentations were induration or cellulitis and erythema and edema with progression to skin discoloration and bullae formation. Fever and tachycardia were the most common clinical features. *S. pyogenes* was the most common causative microorganism, followed by *Staphylococcus epidermidis* and *Pseudomonas aeruginosa*. All patients underwent extensive surgical debridement and received appropriate antibiotics and supportive therapy. Twelve patients survived, and 1 patient with delayed diagnosis of NF died of septic shock.

Conclusion: Although these infections are rare in children, their lethal potential and early diagnostic signs must be recognized. All children with NF should undergo early surgical debridement to prevent delay in treatment. The mortality and morbidity associated with NF in children can be decreased with clinical awareness, early diagnosis, and adequate and urgent surgical debridement followed by intensive supportive care and early wound resurfacing.

© 2007 Elsevier Inc. All rights reserved.

* Corresponding author. Tel.: +90 312 362 30 30x6656 or 6227 (Business). Fax: +90 312 3626400.
E-mail address: kologlu@medicine.ankara.edu.tr (M. Bingöl-Koloğlu).

Necrotizing fasciitis (NF) is perhaps the most aggressive form of soft tissue infection, which has a rapid and fulminant progression. It is a rare infectious entity that poses challenging diagnostic and therapeutic management for a pediatric surgeon [1-7]. It has been reported in 0.08 per 100,000 children per year [3]. However, an increasing incidence of NF caused by invasive *Streptococcus pyogenes* has been reported from various parts of world, during the past several years [8-10].

Because early diagnosis and initiation of aggressive surgical and supportive therapy offer best chance for survival, it is important to recognize early diagnostic signs of NF. We therefore reviewed our experience with NF as one of the few collected series in children to describe diagnostic and therapeutic management and to emphasize the importance of early wound resurfacing after extensive surgical debridement.

1. Patients and methods

Records of 63 children treated for soft tissue infections in the Department of Pediatric Surgery, Ankara University School of Medicine, Ankara, Turkey, from 1999 to 2006, inclusive, were reviewed retrospectively. Among them, 13 patients, in whom diagnosis of NF was made upon the following clinical and operative characteristics: presence of skin discoloration, bullae formation, presence of grayish necrotic fascia during surgery, and histopathologic confirmation of tissue necrosis, were selected for the study. Data collected from records of each patient included age, sex, medical history, predisposing factors, location of infection, portal entry of the infection, symptoms at admission, time of access to medical care, clinical characteristics, diagnostic procedures, treatment methods, and outcome. The results of



Fig. 1 Necrotizing fasciitis of the abdominal wall developed after varicella lesions.

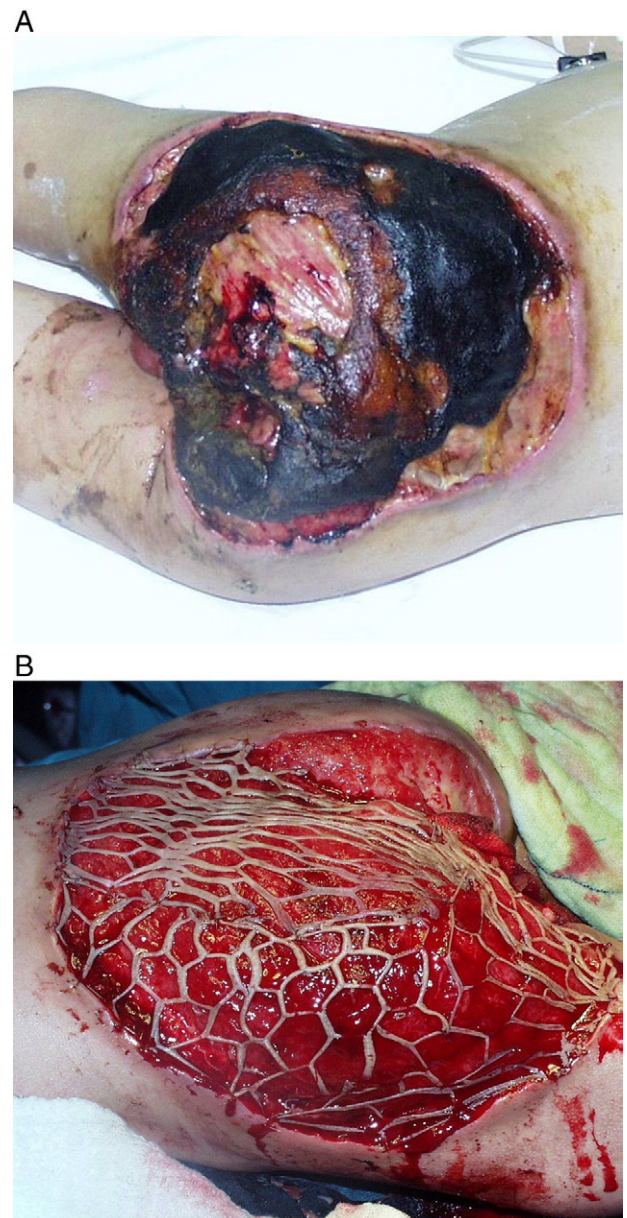


Fig. 2 A, Necrotizing fasciitis of the gluteal region in a child developed after intramuscular injection for tonsillitis. B, Gluteal region of the same patient after extensive debridement and early application of split-thickness mesh graft.

microbiological cultures of tissue samples, blood, and throat specimens were recorded.

2. Results

There were 13 patients, with a mean age of 35 months and with an F/M ratio of 7:6, treated for NF in the study period. All of the 13 children were without immunosuppression. Varicella lesions (Fig. 1), intramuscular injections for tonsillitis (Fig. 2), application of a cream containing menthol to the cervical region, penetrant gluteal trauma, omphalitis,

Download English Version:

<https://daneshyari.com/en/article/4160054>

Download Persian Version:

<https://daneshyari.com/article/4160054>

[Daneshyari.com](https://daneshyari.com)