Yenidoğanda Göğüs Duvarı Nekrotizan Faciitis: Vaka Sunumu

Thoracic Wall Necrotizing Fascitis in a Neonate: A Case Report

Göğüs Duvarı Nekrotizan Faciitis / Thoracic Wall Necrotizing Fascitis

Serdar Onat, Alper Avcı, Refik Ulku, Menduh Oruç, Cemal Özçelik
Department of Thoracic Surgery, Dicle University Faculty Of Medicine, Diyarbakır, Türkiye.

Özet

Nekrotizan fasiit (NF), hızlı progresyon gösteren, yaşamı tehdit eden yüzeyel fasya ve subkutan dokunun enfeksiyonudur. Göğüs duvarı NF için en nadir yerleşim alanlarındandır. Geniş spekturumlu antibiyotik kullanımı, erken cerrahi debridman ve deri greftlemesi NF de hayat kurtarıcıdır. Yedi günlük göğüs duvarı NF olgusu olan kız neonatal hastamızı sunmaktayız. Olgu yatışının 4. saatinde geniş cerrahi debridmana alınmış ve sonrasında defekt kapama için deri greftlemesi uygulanmıştır. Erken tanı ve cerrahi debridman NF da sürvi için en önemli basamaklardır. Geniş cerrahi debridman etkin tedavi için kabul edilen en önemli adımdır. Nekrotik dokuların uzaklaştırılması ve NF progresyonunun önlenmesi cerrahinin amacıdır. Deri defeklerinin kapatılması hastamızda olduğu gibi erken greft uygulanması veya primer kapama ile olmaktadır. Defekt alanının erken kapatılması bu alandan olacak sıvı-elektrolit, protein kaybını önleyecek ve sekonder enfeksiyonları engelleyecektir. Yenidoğanlarda göğüs duvarı NF nadir olmasına rağmen yüksek oranda ölümcül olabilir. Erken tanı ve agresif cerrahi yaklaşımın uygun tedavi olduğunu düşünmekteyiz.

Anahtar kelimeler

Göğüs Duvarı, İnfant, Enfeksiyon, Cerrahi, Acil.

Abstract

Necrotizing fasciitis (NF) is a rapidly progressive and potentially life-threatening infection of superficial fascia and subcutaneous tissue. Thoracic wall is one of the rarest locations for NF. Broad-spectrum antibiotics receiving, early surgical debridement, and skin grafting are life saving in NF. We report a 7-day-old female neonate who had left sided thoracic wall NF. She had undergone extensive surgical debridement within 4 hours of hospital admission, and reconstruction of skin defect by split-thickness skin grafting later. Early diagnosis is important, as prompt surgical debridement offers the best chance for survival. Early and extensive surgical debridement is a widely accepted clinical approach and the mainstay of effective treatment. The goals of surgical intervention are to remove all necrotic tissues, and to help control the progression of NF. Reconstruction of skin defects should be performed by early split-thickness skin grafting like our patient or primary closure. Because early wound resurfacing prevents fluid, electrolyte, and protein loss from the wound site, and decreases secondary infection. Although chest wall NF is rare in neonates, it is a rapidly spreading, highly lethal infection. A high index of suspicion, early diagnosis, and aggressive approach are essential to its successful treatment.

Keywords

Chest Wall; Infant, Infection; Surgery, Emergency.

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Corresponding Author: Alper Avcı, Department of Thoracic Surgery, Dicle University Faculty Of Medicine, Diyarbakır, Türkiye.
Phone: +90 412 2488001-16-4993 Fax: +90 412 2488520 E-mail: dralperavci@mynet.com

Introduction

Necrotizing fasciitis (NF) is a life-threatening, rapidly progressive and potentially life-threatening infection of the superficial fascia and subcutaneous tissues. It usually occurs in adults and is most often localized to the abdominal wall, the extremities, the perineum, the pelvis, and the thoracic region and it has been reported to be 0.008 per 100000 children per year.[1] Early diagnosis and prompt, aggressive surgical treatment including intravenous, broad-spectrum antibiotic therapy are mandatory to successfully control the disease. We report a case of thoracic NF in a 7-day-old girl who underwent successful immediate surgery and received prolonged intravenous antibiotic therapy.

Case

A 7-day-old female neonate was admitted to the pediatric emergency department with large skin infection. She was full term pregnancy baby, and healthy in the first three days of life. A small red skin swelling had occured in the thoracic wall at the 3rd day of life. Then this lesion grew over all the left hemithoracic wall rapidly, and colour became blue at the 6th day. At the first step examination of the patient; a skin defect of 2x3 cm diameter was seen in paramammarial area of the left side (Figure 1). Duration of illness before admission to hospital was 4 days. She had no history of omphalitis, or skin disease suggestive of obvious trauma to the thoracic wall. NF developed spontaneously (primary NF). Body weight was 3450g, arterial blood pressure was 80/40 mm Hg, pulse was 180, and the body temperature was 37.8° C. Irritability, rapid spreading inflammation, bluish-red discorolation, edema, and ulceration were the clinical examination findings. Abnormal blood count values were; white blood cell count of 3800 K/UL(4.4-11.3 K/UL), a platelet count of 97000 K/uL(142-424 K/uL), and a hemoglobin value of 8 g/dl (12.2-18.1 g/dl). Ceftriaxone and clindamycin were administered intravenous. She had no clinical evidence of any immune system defects.



Figure 1. Thoracic wall NF of the case at the hospital admitting.



Figure 2. Postoperative period of the case after urgent debridement surgery.



Figure 3. Postoperative period of the case after split-thickness skin grafting.

Patient underwent extensive debridement surgery within 4 hours of hospital admission. During surgery the subcutaneous tissues were grayish and non-bleeding, stripping of necrotic tissues from superficial muscular fascia was easy, superficial fascia and superficial layer of underlying muscles were

edematous. Necrosis of subcutaneous tissue extended beyond the obvious limit of skin necrosis. All the nonviable tissue and skin were debrided until wound edges bleed freely (Figure 2).

Isolated bacteria from the necrotic tissue were Group A Beta-hemolytic streptococcus (S. pyogenes), and Staphylococcus aureus. Antibiotic chemotherapy was continued with ceftriaxone and clindamycin. The dressings were changed and the wound was inspected every days in the operating theatre.

Reconstruction of large skin defect was performed by split-thickness skin grafting at the 4th postoperative day (Figure 3).

The patient was discharged on the 9th postoperative day. At the 3rd month control, the surgical wound was fine. and the chest wall had normal expansion, the patient had no limitation of activity , and she was healthy without any symptoms.

Discussion

NF is a potentially life threatening infection of soft tissues.[2] It is characterized by rapid spread of inflammation and infection of subcutaneous tissues and fascia. NF is usually reported in adults with preexisting medical conditions or compromised immune system. It is rare in neonates, and the reported mortality is almost 50%. Less than 70 cases of neonate NF are reported in the literature.[3] We therefore would like to report this 7-day old female neonate with thoracic wall NF. Primary NF, which implies absence of a known initiating factor is rarely reported in neonates.[3] Presented case did not have any predisposing or initiaiting factor.

Unlike the adults in whom the extremites and perineum are the most common sites, the disease tends to be located on the trunk in neonates for unknown reasons.[4] Occurence in the thoracic wall in any age is extremely rare, with only 20 published cases, and often fatal (60% of reported mortality).[4-6] Early diagnosis is important, as prompt surgical debridement offers the best chance for survival. Early and extensive surgical debridement is a widely accepted clinical approach and the mainstay of effective treatment. The goals of surgical intervention are to remove all necrotic tissues, and to help control the progression of NF. Freischlag et al.[7] reported a doubling of the mortality rate when operation was delayed by more than 24 hours. The survival of our case shows the importance of early surgery in NF. Kologlu et al.[8] reported nonoperative treatment is a highly controversial and unsafe approach, when the patients developed NF with extensive involvement and marked skin necrosis. Keratinocyte allografts were found helpful in one case to manage an extensive skin defect.[9]

Reconstruction of skin defects should be performed by early split-thickness skin grafting like our patient or primary closure. Because early wound resurfacing prevents fluid, electrolyte, and protein loss from the wound site, and decreases secondary infection. Reconstruction of large skin defect was performed by split-thickness skin grafting at the 4th postoperative day in the present case.

Conclusion

Although chest wall NF is rare in neonates, it is a rapidly spreading, highly lethal infection. A high index of suspicion, early diagnosis, and aggressive approach are essential to its successful treatment.

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