

AN UNUSUAL INFANT BURN: ACCIDENT, ABUSE OR NEGLECT. A CASE REPORT

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Sıradışı Bir Çocuk Yanığı Olgu Sunumu. Kaza mı, İhmal mi Yoksa İstismar mı?

Özet

Yanıklara bağlı yaralanmalar çocuklarda mortalite ve morbiditenin önde gelen sebebidir. Termal yanıklar ise çocukluk çağının en sık gözlenen yanık tipleridir. Bu olgu sunumunda oldukça nadir gözlenen bir ev kazasına bağlı, toplam vücut alanının yaklaşık %15-20'sini içeren 2 aylık bir bebeğin yanık öyküsü sunulmaktadır. Bu sunumun amacı ne kadar farklı şekillerde aile ihmali ve/veya suistimalinin olabileceğini ve yanıklardan korunmada ailelerin eğitiminin ne kadar önemli olduğunu vurgulamaktır.

Anahtar kelimeler: Yanık, Çocuk Hasta, İhmal, İstismar, Acil Servis

Summary

Burn related injuries are a leading cause of morbidity and mortality in children. Thermal burns are the most common type of burn in childhood. We present a very rare home accident mechanism of pediatric burn in this two months old child, who sustained nearly 15-20% total burn surface area (TBSA) burns case. The goal of this report is suggest a different type of family neglect and/or abuse and how important also counsel families regarding burn prevention.

Key words:Burns, Pediatrics, Neglect, Emergency Room, Abuse

Introduction

Burn related injuries are a leading cause of morbidity and mortality in children. Burn injuries rank third among injury-related deaths in children aged 1 to 9 years¹. Pediatric and geriatric patients have the highest morbidity and mortality associated with burn injuries¹. A majority of these children are initially seen in emergency departments (EDs) around the country; therefore, it is necessary that all emergency professionals are proficient in burn management in pediatric population¹.

Most of the burns occur due to unintentional events, and others are the result of non-accidental trauma. However, most burns are preventable¹. Most of the burns in children under 4 years old happen in the presence of the parents, relatives or caretakers². As a primary care provider in the ED, it is necessary to have the knowledge and skills not only to treat burns, but to also counsel families regarding burn prevention and to identify burns resulting from child abuse¹.

We present a very rare home accident mechanism of pediatric face burn of this two month years old child, who sustained nearly 15-19% total burn surface area (TBSA)

burns case. The goal of this report is suggests a different type of family neglect and/or abuse and importance of counseling families regarding burn prevention.

Case Report

The patient, 2-month-old male (estimated weight 5,5kg) sustained 15-20% TBSA burn was brought by her mother to the emergency room of a university hospital in nearly 30 minutes from hearing baby cry.). According to his mother, this is happened as a result of an accidental fire set by older brother (18 months old) via lit of thin clothes called tulbent (cheesecloth) that covered over baby head in baby bed. He is the youngest one boy among the four sisters.

As measured by emergency unit, initial heart rate was 193 beats/min, respiratory rate 55 breaths/min, arterial pressure 70/50 mmHg, saturation pulse O₂ 89% from finger probe and initial core temperature 36°C. In the case history, there was no indication of an abdominal or another trauma and there was no shock pathology. The child was lethargic and agitated when touch, supposed due to pain. He suffered 2nd and 3rd degree burns on his different parts of head

(face, scalp and ears) and anterior and left sides of neck and upper thorax, caused by thermal burn (Fig. 1). The physical examination was other than normal. The patient monitored and intubated with 3/0 no Portex® endotracheal tube orally in 2nd time because of difficult airway and oxygenized 6 lit/min by the emergency physician under ketamin (2 mg/kg via iv) plus atropine (0,5 mg via iv) sedation (5mg/kg via iv) to relieve breathing distress and protect airway security. 0,1mg/kg morphine sulfate was initiated for analgesia too. Also accessed vessel way, catheterized from right subclavian vein and urinary way to see central venous pressure (5cmH₂O) and urine output (hematuric) and replaced nasogastric tube for gastric decompression.

Furthermore, resuscitation was carried out with crystalloid using modified Parkland formula (4x5,5x20%=440ml/24h; 1-8h:220ml, 9-24h:220ml). Initial clinical examination revealed a soft, non-distended abdomen. Clinical suspicion of inhalation injury (blackened face, burned mouth and nose) was verified by direct laryngoscopy while intubating. Upper airway soft tissues and vocal cords were swallowed and edematous. Arterial blood gas analysis revealed no significant metabolic acidosis (pH:7,36, pCO₂: 42 mmHg, BE: -4 mmol/L, HCO₃: 22 mEq/dl). In complete blood counts, high leucocytes and platelet rates were confirmed (wbc:23900/mm³, neu:9%, lenfosit:79%, Hb:11,6 g/dL, plt:806,000/mm³). There is no evidence about renal or hepatic failure in serum biochemical parameters (BUN:16mg/dL, creatinin:0,5mg/dL, uric acid:2,4mg/dL, T.protein:5,6mg/dL, albumin:4mg/dL, Na:131mEq/L, K:4,5mEq/L, Ca:10mg/dL and SGPT:36U/L). There were pointed only hyperglycemia (346mg/dL) and SGOT serum level elevation (97U/L).

Pediatric surgery was consulted and recommended admission to the burn unit. Nitrofurantoin pomade and rifampicin ampul match dressing was initiated after debridement (without any major loss of blood). And received antibiotic (cephalosporin via iv and tobramycin to the eyes), inhaled nebulized corticoid (budesonide), stress ulcer prophylaxis (ranitidine) to be a standardized therapy before transportation to a another hospital which have burn unite for admission.

Discussion

Thermal burns are the most common type of burn in childhood. They may occur because of flames, scalds, contact, cold or radiation. In the toddler age group, scald burns from hot liquid or hot grease are seen commonly and account for 80% of all thermal injuries¹. In the United States, 20,000-30,000 children are hospitalized for the care of injuries each year, the majority of which are due to accidents^{3,4}. Burns are an important and most cause of injury requiring hospital admission in young children⁵. There is also a significant relationship between burns and abuse and/or neglect. Burns account for 6-25% of all abuse cases and 3-39% of all burns were found to be due to abuse⁶⁻⁸. Burns in children under 2 years of age are usually inflicted^{3,6} and burns to the hands, legs, feet

and buttocks have been described throughout the literature as predominant sites of abuse⁶. Intentional burning is most prevalent in children under 3 years of age^{3,6,9}. Mortality in non-inflicted burns is 2% compared to a mortality rate near 30% in inflicted burns³.

The evaluation of burns requires careful attention to historical information, physical examination and scene investigation. Both the history provided by the care givers, parents and/or relatives and the physical capabilities and developmental age of the child play important roles in the assessment of burn cause. Injury inconsistent with the history provided by the care givers is one of the most predictive factors for inflicted injury^{10,11}.

In this case, history provided by parents was not clear for injury mechanism and reliability of story. Could it be abuse? But yet, arriving period to the ED and physical examination findings, like burned materials particles and psychology of parents were saying this is accidental. And we could not find any evidence for this child to say this is abuse. We could not find even one published case report in the literature similarly to this case for compare. Scalding is still the most common type of burn in Turkey and in Turkish children^{12,13} to be different than this case's burn mechanism. There are minor variations in causative factors for burns based on geographical and cultural differences, but scalding is the leading cause of hospitalization for burn patients in our country^{13,14}. Rural families in Turkey tend to have large numbers of children, which means potentially less parental supervision per child¹³. This can be one of the reasons for this child, to be a burn victim. In this case, baby face covering type is old, traditional/typically intervention which coming from past in many regions of eastern and northern Anatolia for prevent children from flies. It has been shown that, in certain countries, various customs/characteristics of families related to ethnic background have a definitive influence on the incidence and types of childhood injuries those occur¹⁵. This can be another reason too.

Many burn prevention education programs are available and have been successful in reducing overall incidence of burns¹⁶. The parents' ethnic background may largely determine the degree to which children are supervised. In order to design effective burn injury prevention programs in any given society, every detail about the families in that society, including ethnic characteristics, should be considered.

Conclusion

Burns with whatever type of mechanism still have significant mortality and morbidity for children. We need to create effective programs for preventing any type of burn injuries in Turkey and elsewhere, it is essential to consider ethnic and cultural issues based on these characteristics. Simple precautions should be explained and methods of using liquids and other dangerous materials such as matches should be researched in different geographic locations in order to formulate good prevention strategies.

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