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CASE REPORT

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A fatal dermatosis in the emergency department: toxic epidermal necrolysis

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Abstract

Toxic Epidermal Necrolysis (TEN) is a life-threatening dermatosis, which are mainly induced by drugs. The mortality rate and incidence of TEN is 20–30% and 0.5–1.2 cases per million population annualy. Drug hypersensitivity is very important in the development of it. Antimicrobials and anticonvulsants are most frequently associated with the development of it. TEN is a disease which acutely starts and has prodromes such as cough lasting 1-3 days, throat ache, burning eyes, arthralgia before the disease. Intraoral erosion is a constant result. Sepsis and respiratory insufficiency were the most important complications in TEN. The main therapy are drugs used by the patient were stopped, systemic corticosteroid and supportive treatment. The aim of our study is recognized of TEN by emergency physicians.

Key Words: Dermatosis, emergency medicine, rahses

Introduction

TEN is a dermatosis with high mortality rate which is characterized by tender erythema, formation of bulla, and subsequently exfoliation [1]. TEN develops generally due to medications (70-80%) and more rarely due to infections [2]. Medications the most frequently causing TEN are antibiotics of sulfa and penicillin, anticonvulsants and oxicam group of nonsteroidal anti-inflammatory drugs. Generally symptoms of malaise, lack of appetite, arthralgia, fever or upper respiratory infection for 1-2 weeks are found in TEN patients. Skin symptoms start as warm erythema including primarily eyes, nose, mouth, and genital area and become generalized [1]. TEN related deaths occur as a result of hypovolemia caused by infection and electrolyte disorders most frequently. Supportive treatment (ST) constitutes the most significant step for treatment of TEN patients [3]. The purpose of this study is to emphasize need for early diagnosis of dermatosis, which is rare but has high mortality rate, such as TEN by emergency physicians.

Case

A 50 year-old female patient applied to our emergency department due to the complaint of common eruptions on her body. Amoxicillin and anti-flu medications (paracetamol, oxolamine citrate, chlorpheniramine maleate) were started to be administered approximately 3 weeks ago due to complaints of upper respiratory infection such as nasal discharge, eye redness, and fever. She applied to an external center almost 2 weeks later since eruptions started on inguinal area and axillary area. The terbinafine tablet was prescribed to the patient here by considering the fungal infection. The patient applied to the same center again because her complaints had not recovered and had spread to whole body and she whose examination was repeated in the same center was referred to our hospital for further examination and treatment. When the patient with Type I diabetes mellitus, diabetic nephropathy, and on use of valproic acid for 4 months due to bipolar disorder in her history applied to our clinic; TA was110/70 mmHg, pulse was 115 pulse/minute, respiratory rate was 18/min, fever was 37.1°C, and saturation O2 was 97%. Extensive erythema, bulla, bulla residues, and superficial erode parts were existed on approximately 70% of body area in the physical examination (Figure 1). Nikolsky's phenomenon (separation of epidermis by laterally pressing on normal skin next to bullous lesion by finger) was positive (Figure 2). Common erosions were present in the oral mucosa in the mouth, conjunctivae were pale, and examinations of the other systems were ordinary. While WBC: 17.800µL, CRP: 45.8 mg/L, and sedimentation rate: 77mm/h among laboratory examinations of the patient were higher than reference levels, other laboratory results were within normal levels. The patient whose dermatological consultation was asked from emergency department was hospitalized in the Dermatology clinic in consideration of TEN. Antifungal drugs and drugs of upper respiratory infection used by the patient were stopped. 1 mg/kg/day methyl-prednisolone, permanganate bath, proton pump inhibitors, and calcium-vitamin D were administered to the patient. Ciprofloxacin drop, sucralfate suspension, and nasal wash with ringer lactate solution were administered to treatment for lesion in the mouth and

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nose. The patient whose lesions recovered in the 12th day of her hospitalization was discharged with full recovery.

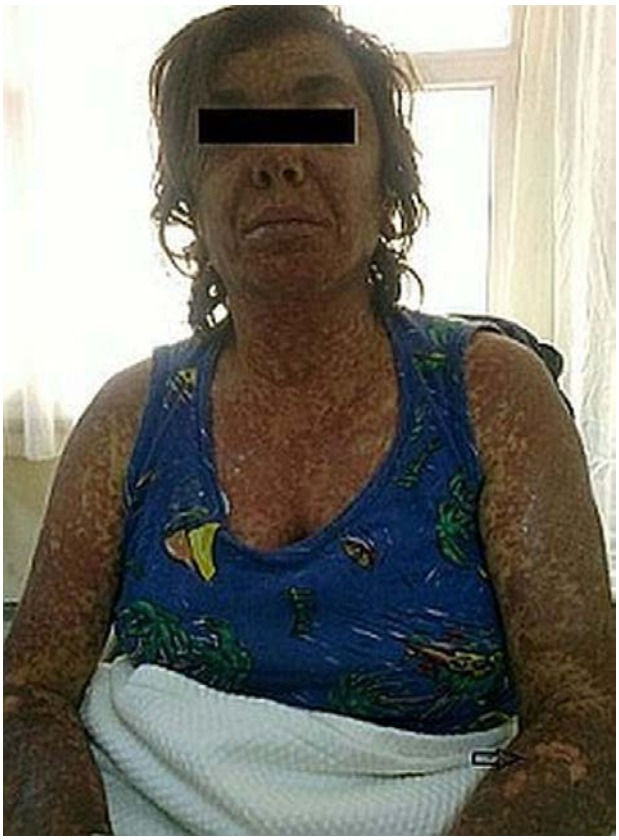

Figure 1. The typical skin lesions of TEN were all over the body.

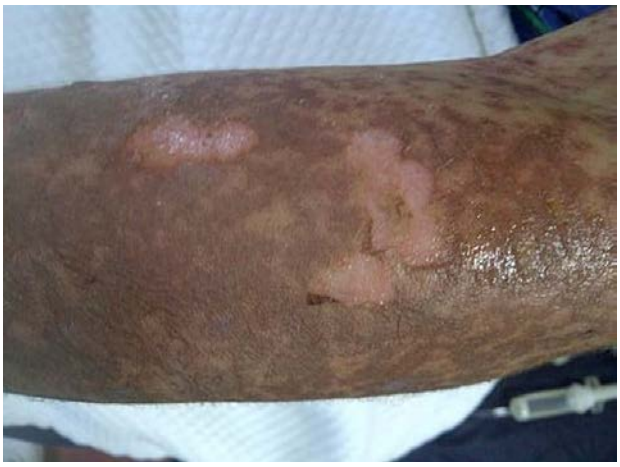

Figure 2. Nikolsky's phenomenon.

Discussion

TEN is acute life-threatening mucocutaneous event, which are induced by drugs [4]. It is characterized by wide necrosis and detachment of the epidermis [4]. TEN can be observed in all age groups regardless of gender gap (1) and 1.5 times higher among men [5]. In a study conducted by Bastuji-Garin S. et al., TEN was characterized by epidermal detachment affecting >30% of total body surface area (TBSA) [4]. But, in Stevens–Johnson syndrome (SJS) was affected <10% of TBSA [4]. Epidermal detachment in our case was affecting more than 30% of TBSA area and we accepted our patient as is in TEN group amongst similar diseases.

The pathogeneses of TEN have not been exactly explained. The genetic has a important role associated with drug hypersensitivity in the development of TEN [6]. Antimicrobials and anticonvulsants are most commonly associated with the development of TEN. Quite rarely, It may occur without drug exposure; such as, mycoplasma pneumoniae infection, even vaccines and viral infection [7]. In their study, Altaş M. et al., related the reason of TEN to the fenitoine used by the patient [3]. In their study, Lalosevic J. et al., did not determine the reason of TEN for 1 patient while they linked the 16 of 17 TEN cases to the drugs used by patients [8]. In their study, Kangal H. et al., indicated the medicines used by patients as the reason of TEN [2]. No reproduction were observed in cultures performed for our patient. As it is, we thought that TEN of our patient was associated with drug reaction.

The average age of the patient was 42.1 years [9, 10]. In a study conducted by Guillaume et al., on 87 patients with TEN, they reported that most of patients used multiple drugs and TEN symptoms appeared 14-22 days after first administration of drugs [11]. In their study, Altas M. et al., stated that TEN appeared mostly within first 4 weeks of treatment and this duration could prolong up to 8 weeks [3]. In their study, Lalosevic J. et al., indicated incubation period of the disease as 7.1 days [8]. Our patient was 50 years old and she used medicines containing amoxicillin and antiflu (paracetamol, oxolamine citrate, chlorpheniramine maleate) due to upper respiratory infection before her complaints had started, and picture of TEN occurred approximately 2 weeks later.

TEN is a disease which acutely starts and has prodromes such as cough lasting 1-3 days, throat ache, burning eyes, arthralgia before the disease. Intraoral erosion is a constant result [5]. In the study conducted by Mockenhaupt M.; erosions affecting two or more different mucosal surfaces, epidermal necrolysis, and target lesions with skin detachment occur in the TEN [12]. In their study, Altaş M. et al., reported that 20-40% of patients had serious eye symptoms [3]. In physical examination of our patient; cough, throat ache, arthralgia, and general skin eruption on whole body were present, Nikolsky's phenomenon was positive, intraoral erosions typical to TEN were present, and she had no ocular involvement. Additionally, in line with the literature, lesions of our case occurred approximately 2 weeks after the use of drug.

Acute dermal insufficiency depending on loss of dermal tissue is the main reason for TEN complications. Interleukin-1 released from epidermis cells, tumor necrosis factor-α, and other cytokines may make contribution to the symptoms and complications [5]. According to the study conducted by Revuz J. et al., sepsis and respiratory insufficiency were the most important complications in TEN. Struck MF. et al., indicated that the most severe complications of TEN are

the involvement of tracheal and bronchial epithelium (~ 20%) . [13]. Mockenhaupt M. said that, hypo- and/or hyperpigmentations seen commonly, which is decrease over time. Also cutaneous sequelae are appear, such as xerodermia, hyperhidrosis, and pruritus [14]. Sepsis did not develop in our patient, but there was pulmonary involvement associated with fever, cough, and high leukocyte level along with common skin lesions.

Until today, no universally accepted management of this patients has been reached [14]. At the moment, the main therapies are intravenous immunoglobulin (IVIG), systemic corticosteroid (SC) and ST care only [15]. Although the systemic treatment options in TEN are many discussions, an aseptic environment, the provision of topical antiseptics and maintenance of the fluid and electrolyte balance, and air body warmers are well known and widely accepted treatments [8].

We treated our case by hospitalizing in the dermatology clinic. Drugs used by the patient were stopped and we simultaneously started SC and ST therapies. We did not use IVIG in our treatment. Our patient recovered in approximately 2 weeks.

Consequently, dermatoses such as TEN can apply to emergency departments with different complaints although rare. If this dermatoses is known by emergency medicine physicians, unnecessary tests and inappropriate treatments will be prevented.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

Conflict of Interest: The authors declared no conflict of interest.

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