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CASE REPORT

Stevens-Johnson Syndrome in Preschool in pneumonia treatment: Case report

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Abstract

Introduction: Stevens-Johnson syndrome (SJS) is characterized by a severe skin reaction that can be triggered mainly by an allergic drug reaction. It is a potentially life threatening condition and has a worldwide incidence of 0.36 in 100.000. **Case Report:** A 5-year-old, white, male patient presented bullous lesion on the upper lip and high fever, after a bacterial tonsillitis followed by pneumonia in which amoxicillin, amoxicillin-clavulanate, and ceftriaxone were administered sequentially. Oral mucosa lesions were disseminated and the patient was hospitalized with suspected pharmacoderma due to the use of antibiotics. Even after antibiotic replacement and antihistamines prescription, the patient developed an increased number of blisters on the labial, oral, nasal mucosa and in the tongue, also, there was an appearance of eyelid edema, cutaneous lesion in the auricular pavilion, and conjunctival, genital and perianal enanthem. The patient was admitted to the pediatric ICU and a skin lesion biopsy was performed, which showed extensive lower epidermal necrosis with inflammatory cell infiltrate, which confirmed the diagnostic suspicion of Stevens-Johnson syndrome. The treatment was performed using oral corticosteroids, prednisolone at a dose of 1mg/kg/day for 10 days, with gradual removal in 12 days and the use of cellulose membrane curative. **Conclusion:** The case addresses the probable correlation of Stevens-Johnson syndrome with amoxicillin use and presents the characteristic clinical manifestations of SJS, highlighting the importance of diagnostic suspicion and early treatment of this condition.

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INTRODUCTION

Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are variants of a hypersensitivity disorder. They differ in the degree of involvement of skin lesions, systemic involvement of the patient and necrolysis. SJS involves less than 10% of the body surface while TEN affects more than 30%. It has a high morbidity and mortality of 1-5%[1].

The worldwide incidence of SJS is 0.36 in 100,000[2]. It is characterized by a severe adverse skin reaction and can be triggered by drug allergy, in pediatric patients most commonly allopurinol, anticonvulsants, antibiotics, mainly sulfonamides and penicillins, and non-steroidal anti-inflammatory drugs (NSAIDs) and, more rarely, by infections, vaccines, autoimmune disorders, neoplasms and bone marrow transplantation. In 25-30% of cases the cause is unclear[1,3]. The pathogenesis involves genetic susceptibility, inappropriate allergic response to the drug, and massive apoptosis of epithelial cells of the skin and mucous membranes[4].

SJS can manifest as erythematous or purpuric patches, atypical target lesions, blisters, erosions, and ulcers[5,6]. The striking feature of SJS is the involvement of at least 2 mucosas (present in 80% of cases), and the most commonly involved sites are labial, oral, ocular, genital and anal mucosa[6,7]. For the diagnosis of SJS, in addition to the clinical picture, skin biopsy can be useful to differentiate from other diagnoses. The outstanding feature of the histopathological examination is the presence of keratinocyte necrosis in the epidermal basal layers with vacuolization of the basement membrane, mononuclear lymphocytic inflammatory infiltrate[8].

As differential diagnoses, erythema multiforme, which many say is a spectrum of SJS, scalded skin syndrome, paraneoplastic pemphigus, graft versus host disease, burn blisters, and acute generalized pustulosis are some hypotheses that should be taken into account. Anamnesis, physical examination, and complementary tests such as histopathology and immunohistochemistry should be used for diagnostic differentiation.

Rapid diagnosis, identification of the causative drug and its immediate discontinuation reduce morbidity and mortality and prevent progression of the clinical picture. Treatment is mainly based on withdrawal of the causative drug and supportive measures such as care to promote re-epithelization as early as possible, airway management, avoid fluid loss and infections[9,10]. Adjuvant treatments with systemic corticosteroids, intravenous immunoglobulin, cyclosporine, and tumor necrosis factor inhibitors are not well established and should be weighed on a case-by-case basis[4].

DESCRIPTION

Male patient, 5 years old, white, complaining of malaise and vomiting, diagnosed with bacterial tonsillitis and treated with amoxicillin for 7 days. He maintained a daily fever of 38ºC and started to experience abdominal pain, pneumonia was diagnosed after a chest X-ray, and amoxicillin-clavulanate was prescribed for 2 days.

However, due to the frequent episodes of vomiting after antibiotic administration, it was changed to injectable ceftriaxone for 2 days, when it started with skin lesions: vesicles with serous content in the upper lip and subsequent increase in volume and number, with formation of blisters, maintenance of fever and association with laryngeal stridor. He was hospitalized with suspected allergy to Ceftriaxone, which was replaced by ampicillin-sulbactam for 2 days and then replaced by piperacillin + tazobactam and antihistamines.

After 14 days from the onset of the clinical picture, the vesicles converged with the formation of blisters on the entire labial and nasal mucosa and a large part of the oral and tongue, followed by detachment of the mucosa with subsequent rupture of the blisters. Figure 1 shows the lesions in the oral mucosa. The following day, the patient developed conjunctival and eyelid edema, bullous lesions in the left ear, anal and genital mucosa, buttocks, upper and lower limbs, left cervical lymphadenopathy, culminating in respiratory failure. In the pediatric ICU, a new chest X-ray showed a perihilar infiltrate, and Ampicillin + Sulbactam was started. Immunoglobulin was administered for 3 days. Still in the pediatric ICU, he received Vancomycin, Meropenem and Amphotericin.

The biopsy of the lesions showed extensive epidermal necrosis, with foci of re-epithelialization in the epidermis and edema in the adjacent superficial dermis with inflammatory cells, with a negative test for fungi, which is compatible with the diagnosis of Stevens Johnson syndrome (SJS). Serologies were also performed for cytomegalovirus, Epstein-Barr and herpes virus, which were non-reactive. The patient was discharged from the ICU to the ward on the 9th day of hospitalization.

Figure 2 shows the evolution of the lesions in the periorbital oral and nasal mucosa and in the left ear, already in the healing stage, with hematic crusts and intense itching.

After discharge, adjuvant treatment was started with oral corticosteroids, prednisolone for 10 days, with gradual weaning for another 12 days, due to pharmacodermia.

DISCUSSION

Stevens Johnson Syndrome (SJS) is a known serious adverse skin reaction (SCAR) belonging to type IV hypersensitivity, mediated by immunological effect[3]. There are three related pathogenic mechanisms: the first involves non-immune mechanisms, represented by the adverse effects of drugs, either through drug interactions or alterations in their metabolism[11]; the second, immune mechanisms that generate a late cellular response that involves the apoptosis of keratinocytes, through cytotoxic T cells (CD8) and natural-killer cells (CD56)[12]; and, third, that it allows a combination of immunological components with individual genetic factors[13].

In the case reported, the main etiological suspicion that opened the picture of SJS was the use of amoxicillin for the treatment of tonsillitis/pneumonia, and the literature states



Figure 1. Bullous lesions with detachment on the oral mucosa.



Figure 2. Lesions of the oral and nasal mucosa, periorbital and left ear with hematic crusts.

that antibiotics, such as penicillins and sulfonamides, may be related to the origin of the symptoms of pharmacodermia[9].

For the correct diagnosis, it is important to have detailed knowledge of the clinical data and the use of histopathological evaluation through skin biopsy. Thus, as can be seen in the evolution of the patient reported, the clinic begins with a nonspecific condition, with fever, fatigue, sore throat, irritation and itching. Then, the appearance of erythematous macules and spots on the face, trunk, genital and anal region and limbs, and spread mainly to distal regions. These lesions evolved into vesicles that merged and formed blisters. There was rupture of the blisters and detachment of the necrotic epidermis, with pain at the sites of lesions and dermal exposure. This mucosal detachment can involve several organs such as: gastrointestinal tract, conjunctivae, corneas, lungs, genital and anal region. Due to these injuries, the patient had dehydration, malnutrition and respiratory dysfunction, which corresponds to data on complications in the literature[14].

It is essential that health professionals are aware of the clinical picture and correlations of the syndrome with the use of drugs and clinical entities, in order to early withdraw drugs that may trigger pharmacodermias, or, if possible, withdraw all that are in use if there is a suspicion of SJS, in order to avoid complications and especially the death of patients with late diagnoses, who do not receive adequate support.

With regard to treatment, several precautions can be taken to promote re-epithelization as early as possible, to avoid water loss and infections. For this, the literature unanimously recommends following a treatment similar to that for burns, and if possible, in a burn center[2-7].

Medications and other interventions are often used to enhance treatment. By consensus, the most used adjuvant therapy in the treatment of critically ill patients is IV immunoglobulin. Although controversial, systemic corticosteroids are also widely used[4]. Both were administered synergistically to the patient in question. Inhibitors of TNF and cyclosporine A are other agents that may be beneficial in preventing the progression of lesions and increasing survival. However, all the drugs mentioned present differences in prognosis and reduced mortality in the literature. Therefore, it is recommended to expand studies to establish effective adjuvant therapy[1].

CONCLUSION

Stevens Johnson Syndrome is a potentially fatal dermatological emergency, which requires early diagnostic suspicion, withdrawal of drugs possibly causing the syndrome, hospitalization and supportive treatment, preventing infections. The article sought to emphasize the importance of early diagnosis of the syndrome, as well as to present the severity of the clinical manifestations and the diagnostic and therapeutic measures carried out in this case.

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