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A CASE REPORT ON NSAID INDUCED STEVENS-JOHNSON SYNDROME

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ABSTRACT: Stevens-Johnson Syndrome (SJS) is an acute, self-limited disease characterized by severe mucosal erosions and widespread erythematous skin lesions. The majority of cases are drug-induced, with NSAID (Non-Steroidal Anti-Inflammatory Drugs) being a common cause. This article presents an observational case report of a 46-year-old male who developed SJS after taking an over-the-counter diclofenac tablet for cervical pain. The patient exhibited severe itching, swelling over the scrotum, lips, and body, blisters, and erythematous skin lesions and erosions, along with difficulty in oral habits. The Naranjo causality assessment indicated the reaction was "probable". He was treated with ceftriaxone and dexamethasone. The report concludes that hypersensitivity reactions like SJS can be triggered by NSAIDs such as diclofenac, highlighting the need for careful monitoring and precise medication management by healthcare professionals.

KEYWORDS: Stevens Johnson syndrome, Case report, Non-Steroidal Anti-Inflammatory Drugs, Adverse Drug Reaction, Diclofenac.

INTRODUCTION

Stevens-Johnson syndrome (SJS) is a rare, life-threatening condition characterized by widespread skin and mucous membrane damage, resulting in significant epidermal detachment, mucosal erosion, and severe systemic symptoms. Since 1983, it has been associated with erythema multiforme major due to similar histological features. The majority of SJS cases are drug-induced, with high-risk medications including carbamazepine, phenytoin, allopurinol, lamotrigine, oxicam, other NSAIDs, sulfonamides, and certain antibiotics. Infections with Mycoplasma pneumoniae and Cytomegalovirus are also common triggers of SJS.[1] [2] The pathogenesis of SJS begins with a drug-associated antigen binding to MHC type 1 or a cellular peptide, forming an immunogenic compound. It is T-cell-mediated, involving CD8+ cells inducing keratinocyte apoptosis, and other immune cells like macrophages, neutrophils, and NK cells. CD40 ligand cells release TNF-alpha, IL-8, and other cytokines, leading to further apoptosis. The pro-hapten theory suggests drug metabolites become immunogenic, stimulating the immune response.[3] [4]

CASE PRESENTATION

A 46-year-old male patient was admitted to the hospital with chief complaints of itching over the body, blister formation, and swelling over the genital area. There was no history of asthma, thyroid disorder, epilepsy, drug and food allergies in the patient or his family. There was no history of applying any topical medication. He had a past medical history of type 2 diabetes mellitus and systemic hypertension for the past 12 years and was on regular medication. He had a personal history of alcohol consumption for the past 3 years, with the last intake being 4 months prior. He also had a medical history of cervical pain for which he approached a nearby medical shop and bought diclofenac tablet for pain relief. After taking 2 doses of diclofenac, he experienced severe itching over both hands and swelling over the scrotum and lips. The following day, the patient developed erythematous skin lesions and erosions over the gluteal, genital, and both lip areas, followed by laryngitis, fever, runny nose, shortness of breath, and was then admitted to the general medicine department.

Laboratory findings shows WBC 14,200 (4000- 12000) Serum electrolytes were normal. ESR 1st hour 60mm 2nd hour 65mm, an increased fasting blood sugar level of 210 mg/dl and a post-prandial blood sugar level of 246 mg/dl. Based on the history, physical examination, and laboratory findings, the diagnosis of Stevens-Johnson Syndrome (SJS) was established by a dermatologist.

Initially, the suspected drug was discontinued to prevent the worsening of the SJS condition. Wound dressing with normal saline was done for the erosion and lesions. The patient was immediately treated with intramuscular injection chlorpheniramine maleate and intravenous injection hydrocortisone. He then received appropriate supportive treatment with intravenous fluids: NS (normal saline) 2 units and RL (Ringer's lactate) 2 units at 100 ml/hour, tablet paracetamol 1g, followed by dexamethasone 0.3 mg/kg/day intravenously, ceftriaxone 2g/day intravenously, pantoprazole 80 mg/day intravenously, tablet cetirizine 8 mg, and human insulin subcutaneously according to CBG (capillary blood glucose). A 0.1% betamethasone ointment was applied topically to the affected

areas. Saline soaks were done. The initial dose of dexamethasone 0.3 mg/kg/day intravenously was tapered as the skin lesions improved. After 6 days of hospitalization, skin recovery and re-epithelialization were established, the patient's temperature decreased, and mucosal complications stabilized. The patient was discharged after 7 days of hospitalization.

A photograph of the allergic reaction on the lips and oral cavity is included **(Figure 1&2)**. Unfortunately, photographs of allergic reactions in the genital and scrotal areas are not available due to the sensitive nature of these regions and the patient's discomfort with photographing these areas. However, the clinical description provided by the patient and physical examination findings by the healthcare team offer comprehensive documentation of these reactions.

BEFORE TREATMENT

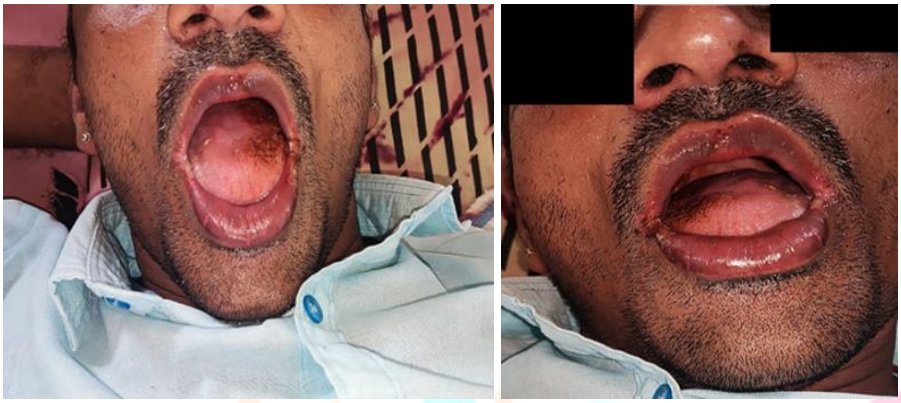

Figure.1&2 Erosion of blisters and swelling over the lips and oral cavity.
(Before Treatment)

AFTER TREATMENT

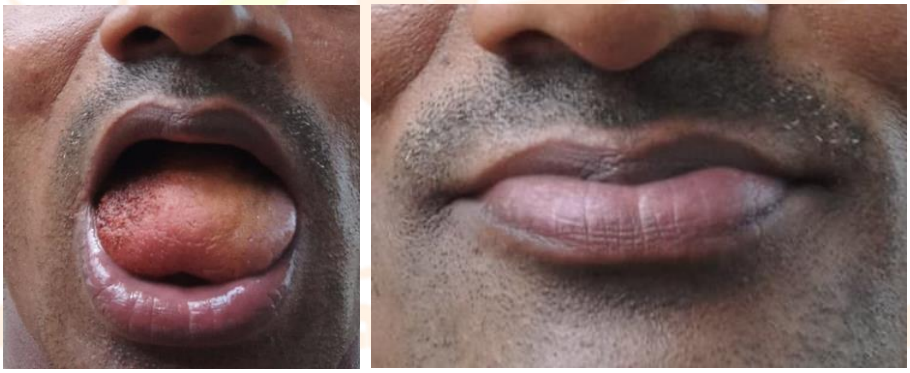

Figure.3&4 Significant reduction of blister erosion and swelling over the lips and oral cavity.
(After Treatment)

DISCUSSION

Stevens-Johnson Syndrome (SJS) is a severe mucocutaneous reaction often triggered by medications, marked by extensive necrosis and detachment of the epidermis. This condition is associated with significant morbidity and can be life-threatening.[5] The etiology of SJS involves a complex interplay of genetic, immunologic, and environmental factors, with high-risk medications such as NSAIDs, anticonvulsants, and antibiotics frequently being implicated.[6]

Among NSAIDs, oxicams, ibuprofen, aspirin and diclofenac are particularly well-documented as potential causes of SJS.[7] The pathogenesis of this condition involves immune system activation, leading to widespread keratinocyte apoptosis. This process is typically mediated through a T-cell response, with CD8+ cytotoxic T cells playing a pivotal role in keratinocyte destruction. The release of pro-inflammatory cytokines such as TNF-alpha and various interleukins exacerbates the condition.[3]

In this particular case, the patient developed severe itching, swelling, and erythematous skin lesions after taking over-the-counter diclofenac for cervical pain. The rapid onset of symptoms following drug intake strongly suggests a causative link. The Naranjo algorithm, which evaluates the likelihood of adverse drug reactions, classified this case as a "probable" drug-induced SJS. The patient's history of diabetes and hypertension, along with the use of multiple medications, may have increased his susceptibility to adverse drug reactions. Despite this, there was no prior history of drug allergies, indicating this was a first-time hypersensitivity reaction.

Early identification and cessation of the offending drug are crucial in managing SJS. In this case, diclofenac was promptly discontinued, and the patient received supportive care, including wound dressing and the administration of corticosteroids and antihistamines to reduce inflammation and allergic reactions, along with paracetamol for pain relief. The patient's elevated ESR rate was treated with corticosteroids to suppress T lymphocyte activity, and his increased blood sugar levels were managed with human insulin. Intravenous fluids and antibiotics were used to manage secondary infections and support overall recovery. The

administration of dexamethasone in a tapered dose helped control the inflammatory response, while ceftriaxone prevented secondary bacterial infections. Topical treatments and saline soaks promoted re-epithelialization of the skin. The patient's gradual recovery over six days, with stabilization of mucosal complications and a decrease in temperature, highlights the effectiveness of the comprehensive treatment approach.

This case underscores the importance of monitoring patients for adverse drug reactions, particularly when prescribing NSAIDs and other high-risk medications. Healthcare professionals should be vigilant about the potential for severe hypersensitivity reactions like SJS and educate patients about the signs and symptoms to watch for. Prompt recognition and treatment are essential to improving patient outcomes.

The unavailability of photographs for some affected areas is a limitation of this report. However, the comprehensive clinical descriptions and physical examination findings provide sufficient documentation. Future research should focus on identifying genetic and immunologic markers that predispose individuals to drug-induced SJS, potentially leading to more personalized and safer prescribing practices.

CONCLUSION

This case report highlights the potential for NSAIDs like diclofenac to induce severe hypersensitivity reactions such as SJS. It emphasizes the need for careful drug management and monitoring by healthcare professionals to prevent and mitigate adverse drug reactions. Early intervention and appropriate supportive care are crucial for patient recovery and minimizing complications.

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