

## **Stevens-Johnson syndrome after aortocoronary bypass surgery**

### *Aortokoroner baypas cerrahisi sonrasında Stevens Johnson sendromu*

**Mehmet Ali Şahin,<sup>1</sup> Adem Güler,<sup>1</sup> Artan Jahollari,<sup>1</sup> Mehmet Yokuşoğlu,<sup>2</sup> Ufuk Demirkılıç,<sup>1</sup> Harun Tatar<sup>1</sup>**

Department of <sup>1</sup>Cardiovascular Surgery, <sup>2</sup>Cardiology, Gülhane Military Medical Faculty, Ankara, Turkey

Stevens-Johnson syndrome is a life-threatening disease involving the skin, in which the epidermis is detached from the dermis due to cell death. The syndrome is considered to be a type of hypersensitivity reaction which affects skin and mucous membranes. In this article, we present a 78-year-old male who underwent aortocoronary bypass surgery (ACBS) 14 days ago and was admitted to our department with the complaints of high fever, malaise, fatigue, diarrhea and cutaneous eruptions. The patient was histopathologically diagnosed with Stevens-Johnson syndrome and died on day 20 following surgery. To the best of our knowledge, it the first case of Stevens-Johnson syndrome which was developed after ACBS.

**Key words:** Aortocoronary bypass surgery; Stevens-Johnson syndrome.

Stevens-Johnson syndrome (SJS) is a life-threatening disease and is thought to be a hypersensitivity reaction that affects the skin and mucous membranes.<sup>[1]</sup> Although the majority of cases are idiopathic, the most frequent cause is various medications, followed by infections. Bastuji-Garin et al.<sup>[2]</sup> classified the severity of the disease in five categories according to the variety of lesions, skin detachment, and affected body surface area. In this case report, we present a 78-year-old man admitted to our department with complaints of high fever, malaise, fatigue, diarrhea, and cutaneous eruptions who had undergone aortocoronary bypass surgery 14 days prior to his admission. Stevens-Johnson syndrome was diagnosed with a histopathological exam. According to the Bastuji-Garin criteria,<sup>[2]</sup> our case was an overlap of SJS and toxic epidermal necrolysis (TEN).

### **CASE REPORT**

A 78-year-old male patient underwent coronary artery bypass grafting (CABG) surgery with an uneventful

Stevens-Johnson sendromu deriyi tutan, yaşamı tehdit eden ve hücre ölümü nedeniyle epidermin dermisten ayrılmasına yol açan bir hastalıktır. Bu sendromun deri ve mukoz membranları tutan bir tür aşırı duyarlılık reaksiyonu olduğu düşünülmektedir. Bu yazıda yüksek ateş, halsizlik, bitkinlik, diyare ve kütanöz erüpsiyonlarla kliniğimize başvuran, 14 gün önce aortokoroner baypas cerrahisi (AKAB) uygulanmış 78 yaşında erkek hasta sunuldu. Hastaya histopatolojik olarak Stevens-Johnson sendromu tanısı konuldu ve hasta ameliyat sonrası 20. günde kaybedildi. Bildiğimiz kadarıyla bu olgu AKAB sonrası gelişen ilk Stevens-Johnson sendromu olgusuydu.

**Anahtar sözcükler:** Aortokoroner baypas cerrahisi; Stevens-Johnson sendromu.

postoperative course. For preoperative prophylaxis, cefazolin sodium 1 g bid was administered intravenously. He was discharged on the seventh postoperative day with acetylsalicylic acid 100 mg qd, ciprofloxacin 500 mg bid, and ranitidine 40 mg qd. The need for antibiotherapy was considered because of the presence of induration and local fever on the site of the incision at the lower extremity below the knee since this might denote the possibility of superficial skin infection. However, his white blood count was within normal limits, and he had no history of hypersensitivity. His laboratory values, including whole blood count and routine biochemistry, were within normal limits at the time of discharge. While the thrombocyte count was 340.000/mm<sup>3</sup> preoperatively, it was 380.000/mm<sup>3</sup> just before discharge. The preoperative fibrinogen level was 376 mg/dL. C-reactive protein (CRP) and fibrinogen were not analyzed before discharge.

Six days after discharge, he was admitted to the hospital complaining of fever, malaise, nausea, diarrhea,

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Correspondence: Mehmet Yokuşoğlu, M.D. Gülhane Askeri Tıp Akademisi Kardiyoloji Anabilim Dalı, 06010 Etilik, Ankara, Turkey.  
Tel: +90 312 - 304 42 67 e-mail: myokusoglu@yahoo.com

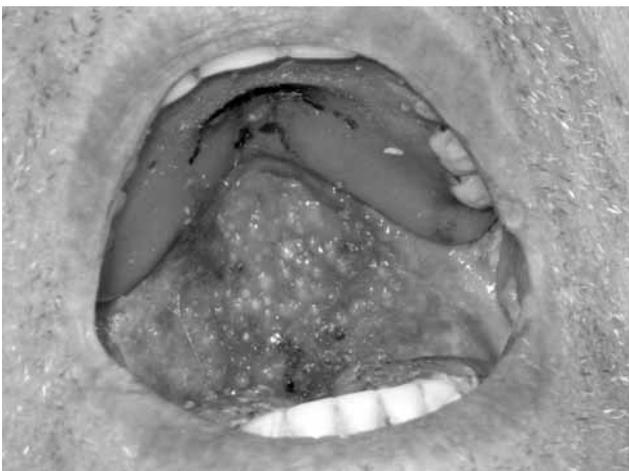


**Figure 1.** Erythematous eruption spreads on 30% of body surface area.

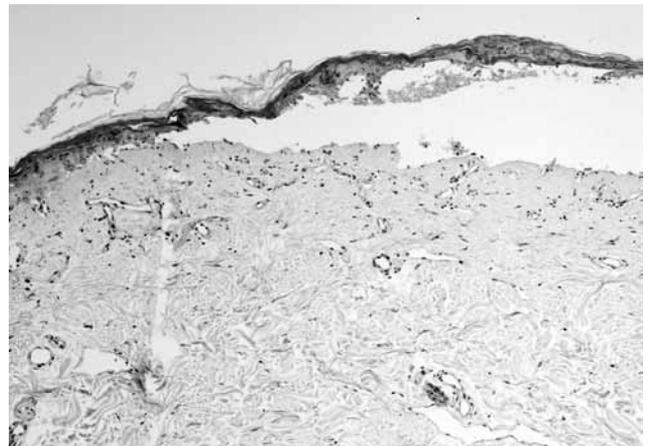
and a new onset skin rash. Macular erythematous eruptions on his trunk which had spread to his neck, arms, and legs (Figure 1) were seen on physical examination. Eruptions and bullous lesions were also noticed in the buccal and pharyngeal mucous membrane (Figure 2). He had a fever (39.1 °C) and was slightly agitated.

His blood count and biochemical values were unremarkable, except for alanine aminotransferase (ALT) 354 IU/L, aspartate aminotransferase (AST) 531 IU/L, lactate dehydrogenase (LDH) 2519 IU/L, and CRP 76 mg/dL. We stopped his oral intake and all medications. Intravenous fluids were administered by fully monitoring the fluid balance with a central venous catheter and an arterial catheter via the radial artery while searching for a possible cause. Viral etiology was investigated by serologic determination of the immunoglobulin M (IgM) levels of cytomegalovirus, Epstein-Barr virus, and hepatitis B and C virus. Blood, and throat cultures along with urine samples,

which had been obtained daily for three days, were negative. Electrocardiography, echocardiography, and abdominal ultrasound were unremarkable. A skin punch biopsy from abdominal skin lesions showed epidermal necrosis and detachment that was identified as SJS (Figure 3). A low-dose pulse corticosteroid (methyl prednisolone 500 mg/per day) and cyclosporine (200 mg, twice a day) were initiated. His general condition was uneventful on the first day after specific treatment was given, but on the second day, his clinical parameters deteriorated. His hepatic enzyme (ALT and AST) levels suddenly increased (around 1000-1500 IU/L), his white blood count decreased to less than 3000/mm<sup>3</sup>, and his thrombocyte count decreased to below 50.000/mm<sup>3</sup>. The immunosuppressive regime was halted. The patient was intubated due to respiratory failure on the fourth day after the second hospitalization. Generalized bleeding was noticed due to disseminated intravascular coagulation (DIC). The



**Figure 2.** Mucous membrane erosion was seen.



**Figure 3.** Epidermal necrosis and detachment were detected with a biopsy (H-E x 400).

patient died because of multiple organ failure (MOF) on the postoperative 20<sup>th</sup> day.

## DISCUSSION

Stevens-Johnson syndrome is a serious and potentially life-threatening disease caused mainly by various drugs or infections. In most cases, SJS occurs within one to eight weeks after administration of medication. Shorter durations might occur in sensitized patients who have had previous milder cutaneous eruptions due to the same medication. In our case, the interval between the surgery and onset of SJS was 14 days. The patient was the first case diagnosed as having SJS in our department. The second hospitalization was needed because of a high transaminase level, the patient's non-specific symptoms, and fever. The only clue about the etiology of the patient's condition was his fever.

Our first management step was to investigate any etiology for a viral or bacterial infection; however, we were not able to find any infectious etiology. Although there are multiple reports of ciprofloxacin, ranitidine, or non-steroidal anti-inflammatory drugs (NSAIDs) causing SJS, it was impossible for us to determine the culprit medication.<sup>[3,4]</sup>

Therapy is based on the identification and elimination of the provocative agent(s), supportive therapy, and specific therapy. Withdrawal of the suspected drug should be implemented immediately.<sup>[5]</sup> Patients are generally unable to take oral feeding because of mucous membrane eruptions, so parenteral nutrition is necessary. Severe skin lesions might require therapy, even in a burn center, and special care should be taken for mucous membrane lesions. There is no agreement on the specific therapy, but intravenous high-dose corticosteroids, intravenous pooled human immunoglobulin, plasmapheresis, hemodialysis, cyclophosphamide, cyclosporine, N-acetylcysteine, thalidomide, and pentoxifylline have been advocated.<sup>[5]</sup> We preferred cyclosporine and low-dose pulse corticotherapy, but we neither got a response nor had a chance to change the protocol.

In this syndrome, septicemia, DIC, pneumonia, cardiac failure, myocardial infarction, gastrointestinal hemorrhage, and shock or renal failure are causes of death.<sup>[5]</sup> In our case, the cause of death was DIC. The rapid deterioration of the patient's medical status might have been due to the susceptible nature of the human body to various events while trying to recover from

the deleterious effects of cardiopulmonary bypass. Although the reported mortality rate in the SJS-TEN overlap category was 9%,<sup>[6]</sup> we can speculate that it could be higher in patients after open heart surgery.

We want to remind our colleagues of the importance in choosing the appropriate medication and of the need to take a detailed history of hypersensitivity for every patient. Hypersensitivity reaction after open heart surgery may not be directly related to surgery, and even if it is related to a medication such as antibiotics or aspirin, the patient's clinical condition may not provide enough time to give another convenient and suitable medication. We would like to emphasize that there are several treatment protocols for this syndrome, but the best one has yet to be determined.

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