09. TO TEST OR NOT TO TEST? HOW A POSITIVE RAPID STREP TEST MAY PERPLEX THE DIAGNOSIS OF SERUM SICKNESS LIKE REACTION

Christodoulos Chatzigrigoriadis,[1] George Eleftherakis,[2] Kostis Gyftopoulos,[3] Despoina Sperdouli,[1] Stelios F. Assimakopoulos.[4]

[1] School of Medicine, University of Patras, Patras, Greece.

[2] Department of Internal Medicine, University Hospital of Patras, Patras, Greece.

[3] Department of Anatomy, School of Medicine, University of Patras, Patras, Greece.

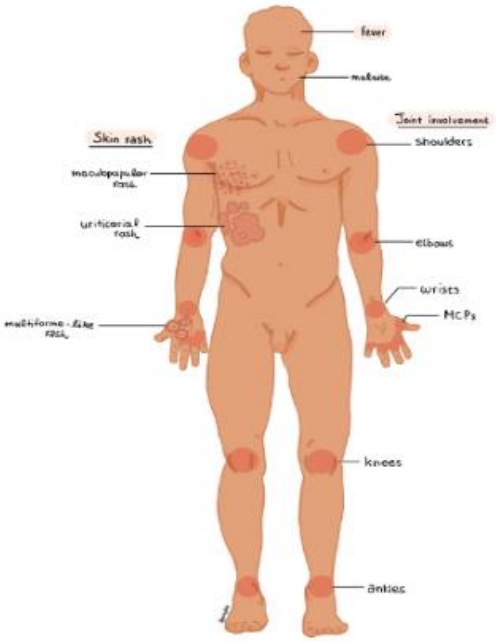
[4] Department of Internal Medicine and Division of Infectious Diseases, University of Patras Medical School, Patras, Greece.

https://www.youtube.com/live/fSpXH3Xy5w?t=16264s

BACKGROUND: Serum sickness-like reaction (SSLR) represents a rare immunologic disorder. The original version is the serum sickness (SS), a type III hypersensitivity reaction caused by large protein molecules such as diphtheria antitoxin. However, SSLR is a delayed reaction of unknown etiology, triggered by small non-protein molecules. The clinical presentation of SSLR includes the classic triad of fever, rash, and arthralgia, which typically occurs 1-2 weeks after the exposure to drugs (especially β-lactams, e.g., amoxicillin and cefaclor) and infectious agents (especially viruses and Streptococcus). Some patients also present with angioedema or lymphadenopathy. The prognosis is excellent, but rare complications of liver involvement, renal involvement, coagulopathy, and pneumonitis have been reported. It is a challenging diagnosis because it mimics sepsis and other exanthematous diseases. Pharyngitis is an upper respiratory tract infection that is usually caused by viruses, but the most common bacterial cause is Streptococcus pyogenes. The Rapid Strep Test (RST) is a useful diagnostic test for detecting Streptococcus pyogenes in patients with pharyngitis and a Centor score of 3 or more guiding the administration of antibiotics. **THE CASE:** We report a case of a 63- year-old female patient seen in the emergency department (ED) with diffuse rash, musculoskeletal pain, high-grade fever with rigors, malaise, and a positive RST in the absence of clinical signs of pharyngitis. The rash was neither painful nor pruritic and was diffusely spread, sparing the face, the palms, and the soles, with a maculopapular pattern and occasional urticarial-like plaques (Figure 1). Her past medical history was positive for a recent (12 days before) respiratory tract infection, which was treated with amoxicillin/clavulanate, acetaminophen, and ibuprofen. The patient was admitted to the hospital and she was initially treated with clindamycin, given the initial clinical suspicion of streptococcal sepsis, but it was discontinued due to diarrhea. After an extensive diagnostic workup of the patient and the exclusion of other common diseases, her final diagnosis was SSLR. The most likely trigger was amoxicillin, although clavulanate, acetaminophen, and ibuprofen have also been reported as causes of SSLR. Methylprednisolone 0.5 mg/kg per os was administered, resulting in the resolution of symptoms after 2 days, while the dose was gradually tapered over one week. **CONCLUSION:** SSLR is an interesting clinical entity, and its pathogenesis is poorly understood. The clinical presentation can be variable. SSLR is a clinical diagnosis of exclusion due to the absence of confirmatory testing. Physicians should be familiar with this benign condition to avoid unnecessary diagnostic testing such as RST which may misguide diagnosis and lead to unnecessary diagnostic testing, hospitalization, and antibiotic treatment.

Figure 1: Diffuse Maculopapular Rash with Occasional Urticarial-Like Plaques Observed on the (A) Arms and (B) Legs in a Case of Serum Sickness-Like Reaction.

Figure 2: Clinical Manifestations of Serum Sickness-Like Reaction (SSLR)



Legend: Illustration of the clinical presentation of serum sickness-like reaction (SSLR), highlighting the classic triad of fever, rash, and arthralgia or arthritis. Key affected areas include the trunk, shoulders, knees, and elbows, with rash distribution often appearing in these regions.

Key Words: Serum Sickness; Exanthema; Drug Eruption; Amoxicillin; Streptococcus pyogenes.