

poor predictor for future treatment success. Although further investigations are needed to confirm and strengthen the present results, SP seems to be a good predictor of treatment response, a specific marker of omalizumab treatment efficacy, and thus a reliable patient selection tool.

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Shiitake mushroom-induced flagellate dermatitis



Shiitake flagellate dermatitis, also known as *flagellate erythema* or *toxicoderma*, is correlated with the ingestion of raw or undercooked shiitake mushrooms. It presents as a linear, erythematous eruption resembling scratch or whiplash marks. The condition was first described in Japan by Nakamura¹ and has since been recorded all over the world, likely in accordance with the increase in Asian agricultural exports. We present here a case of shiitake mushroom-induced flagellate dermatitis in an otherwise healthy 42-year-old woman.

A healthy 42-year-old woman presented with erythematous, edematous, linear streaks distributed on the trunk resembling whiplash marks (Fig 1). The eruption had been present for 3 days and was associated with localized pruritus and stinging. Scratching the patient's inner arm produced no signs of dermatographism. Flagellate dermatitis from shiitake mushrooms was suspected due to her recent ingestion of mushrooms and insistence that she had not scratched the area. The patient later confirmed that she had consumed raw shiitake mushrooms 1 day prior to the eruption. She was treated with 10 mg of cetirizine and triamcinolone 0.1% cream for symptomatic relief. The eruption began resolving 2 days after initiation of the treatment plan, and after 2 weeks it resolved almost completely. Subsequent type I hypersensitivity testing, including skin prick and blood testing, resulted in normal findings.

It is believed that shiitake flagellate dermatitis is a toxic reaction to lentinan, a thermolabile polysaccharide that is found in raw and lightly cooked shiitake mushrooms. Lentinan stimulates the secretion of interleukin-1, an inflammatory cytokine, which results in vasodilation and hemorrhage.² Fully cooked shiitake mushrooms (>145°C) contain the decomposed form of lentinan, which speaks to the lack of flagellate dermatitis after the consumption of cooked shiitake mushrooms. Alternate theories explaining shiitake dermatitis favor an allergic response; however, these are less supported, as prick and scratch test results for shiitake mushrooms are generally negative.³ In some cases of shiitake dermatitis, patients also have reported fever, diarrhea, and the development of mucosal ulcers.⁴



Figure 1. Erythematous, edematous, linear streaks and plaques distributed on the trunk.

Similar erythematous, flagellate eruptions have been observed in response to bleomycin treatment and dermatomyositis; however, these presentations often have mucous membrane involvement, which is not seen with shiitake-induced flagellate dermatitis.⁵ In addition, lesions resulting from bleomycin tend to take on a more hyperpigmented appearance. Another challenge in the diagnosis of shiitake dermatitis is the variable time course of eruption, which has been documented to appear anywhere from 12 hours to several days after mushroom consumption.

Susceptibility to shiitake dermatitis is variable, with an estimated prevalence of approximately 2%.⁶ Further studies must be performed to reflect the growing shiitake mushroom market and resultant exposure. The popularity of shiitake mushrooms in the United States has increased dramatically in recent years, as Asian cuisine has become a staple of the American culinary landscape.⁷ As this mushroom continues to integrate into the Asian-American palate, it is likely that physicians will see more similar cases. Such a trend calls for increased documentation and discussion of this relatively obscure condition.

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DRESS syndrome associated with splenic thrombosis



Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a rare and severe hypersensitivity reaction that can occur after exposure to different medications. Onset occurs 2 to 8 weeks after drug exposure and the course can be prolonged with waxing and waning of symptoms despite withdrawal of the offending agent. Rash, facial swelling, lymphadenopathy, peripheral eosinophilia, and transaminitis classically characterize the reaction. However, different symptoms are reported, including numerous hematologic abnormalities and multiorgan involvement. Thrombotic complications are a known complication of hypereosinophilic conditions but are not well described in DRESS syndrome. We present a case of a 27-year-old African American woman with a medical history of mild intermittent asthma, acne, iron deficiency anemia, and hidradenitis suppurativa. She presented to our emergency department with nausea, abdominal pain, lightheadedness, fatigue, fevers, diffuse lymphadenopathy, facial edema, and loss of appetite after 4 weeks of treatment with minocycline and rifampin for a hidradenitis flare. Her history was notable for recent travel to the Middle East, Asia, and Europe and absence of personal or family history of clots. At initial evaluation she was found to be febrile (102.2°F) with high-normal blood pressure (132/88 mm Hg) and heart rate (92 beats/min); her respiratory rate and oxygen saturation were normal. Her laboratory results at presentation showed anemia with mild thrombocytopenia and mild leukocytosis (hemoglobin 6.8 g/dL [11.2–15.7 g/dL], hematocrit 28.0% [34–45%], platelets 128 K/ μ L [150–400 K/ μ L], white blood cell count 10.9 K/ μ L [4.0–10.0 K/ μ L]). Her differential was significant for 13% atypical lymphocytes and increased absolute eosinophil and lymphocyte counts (0.76 K/ μ L [range, 0.04–0.54] and 4.47 K/ μ L [1.2–3.7 K/ μ L], respectively). Her red blood cell smear also was diffusely abnormal but without a predominant red blood cell type and notably there were no schistocytes at initial evaluation (she later had occasional +1 schistocytes similar to the rest of the smear). Her prothrombin time (14.3 seconds; range, 9.4–12.5 seconds) and international normalized ratio

(1.3 seconds; range, 0.9–1.1 seconds) were mildly increased as were her liver function test results (alanine aminotransferase, 53 IU/L [0–40 IU/L]; aspartate aminotransferase, 78 IU/L [0–40 IU/L]; alkaline phosphatase, 145 IU/L [35–105 IU/L]; lactate dehydrogenase, 338 IU/L [94–250 IU/L]) with a normal total bilirubin level (0.4 mg/dL [range, 0–1.5 mg/dL]). Unfortunately, her liver enzymes continued to increase, and on hospital day 2 computed tomography with contrast of the abdomen and pelvis showed splenomegaly with multiple peripheral wedge-shaped areas of splenic hypoattenuation consistent with splenic infarct (Fig 1), for which she was started on intravenous heparin. However, her absolute eosinophil count did not increase and her eosinophil percentage remained normal. Given her hepatic involvement, splenic infarction, and hematologic findings, she underwent an extensive autoimmune, infectious, hypercoagulable, and malignant workup. Laboratory investigation to determine a cause for her symptoms was entirely negative except for a weakly positive anti-smooth antibody (titer 1:40).

She continued to have fevers in the setting of negative blood cultures without a clear infectious source; thus, treatment with antibiotics was deferred. Five days after admission she developed a sudden marked eosinophilia to 3.27 K/ μ L (15%) with a diffuse erythematous maculopapular rash and worsening facial swelling. At the time of rash occurrence, her RegiSCAR group diagnosis score for DRESS was 7, suggesting a definite diagnosis of DRESS (cutoff points: <2, no DRESS; 2–3, possible DRESS; 4–5, likely DRESS; and $\geq$ 6, definite DRESS).¹ Given the likelihood of DRESS syndrome, skin biopsy was deferred and she was started on 100 mg/d of intravenous methylprednisolone, with rapid symptomatic improvement over 48 hours. In the subsequent 48 hours, she had almost total resolution of her rash with slight improvement in her eosinophilia (from 18% to 8%; absolute count, from 4.01 to 2.14 K/ μ L). Despite ongoing steroid therapy without change in dose, on hospital day 8, she experienced a worsening of her rash and eosinophilia. Her steroids were continued at the same dose and her liver enzymes peaked at an alanine transaminase level of 233 IU/L and an aspartate transaminase level of 242 IU/L on days 8 and 11, respectively.