

# Shiitake Dermatitis Presenting as a Flagellate Erythema in a Middle-Aged Female: A Case Report

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## BACKGROUND

Shiitake dermatitis is an **overlooked toxicoderma** that appears as a visibly distinct cutaneous reaction. It presents as an intensely pruritic, urticarial eruption in a flagellate or "*whip-like*" pattern that follows ingestion of raw or undercooked shiitake mushrooms (*Lentinula edodes*).

The reaction is triggered by **lentinan**, a thermolabile polysaccharide. When mushrooms are cooked at inadequate temperatures, the toxin remains biologically active. The condition is self-limiting with a good prognosis but can persist for up to **40 days**, warranting greater awareness given how easily it is avoided through proper cooking.

Reaction occurs in only an estimated **1.8–2.0%** of exposed individuals. Variable host sensitivity, driven by genetic predisposition, immune status, prior sensitization, and ingested dose, likely explains why so few exposed individuals develop noticeable symptoms. Current literature most likely under-reports its true prevalence due to resemblance to other dermatological conditions.



Figure 1. Clinical presentation on the (A) lateral torso, (B) posterior trunk, and (C) back of the neck. Linear, non-confluent erythematous streaks 48 hours after ingestion of undercooked shiitake mushrooms.

## CASE PRESENTATION

A **56-year-old female of Chinese descent** with a history of allergic rhinitis and no known drug or food hypersensitivities presented to an acute care setting with a **48-hour history of an intensely pruritic, cutaneous rash**.

The patient remained afebrile and denied constitutional, respiratory, GI, or GU symptoms. Physical exam was remarkable for erythematous, linear streaks in a **flagellate configuration across the entire body**, sparing the palms, soles, and central face. The patient insisted the rash was not due to scratching.

Her husband reported a **subclinical, attenuated rash** in the same timeframe; they share meals in the same household. No new soaps, detergents, or skincare products had been introduced. Dietary review revealed that they had eaten **home-cooked shiitake mushrooms two days prior** to symptom onset.

**Management:** loratadine 10 mg PO daily × 1 week. At one-week follow-up, the rash had begun to subside.

## DIFFERENTIAL DIAGNOSIS

On visual appearance the flagellate pattern is distinctive, yet it strongly resembles several other dermatological conditions, a likely contributor to under-reporting:

- **Bleomycin-induced flagellate erythema:** history of recent chemotherapy.
- **Dermographism / Koebner phenomenon:** pattern reproducible by scratching the skin.
- **Jellyfish stings:** recent saltwater exposure with burning pain.
- **Contact dermatitis:** new soap, detergent, or topical exposure.

## DISCUSSION

Because the reaction to lentinan is **dose-dependent and subject to variable host susceptibility**, the true population incidence is likely significantly underestimated in the current literature.

Broader clinical awareness offers several benefits. The most effective "**treatment**" is **prevention**: knowledge of proper cooking techniques precludes costly workups, allergy testing, and unnecessary systemic corticosteroid regimens with their own iatrogenic risks. Early recognition also expedites symptom management for a condition that can persist up to 40 days.

From a psychosocial standpoint, a prolonged pruritic eruption can **impact sleep, occupational productivity, body image, and mood**. Patients may experience embarrassment, social withdrawal, and chronic inflammation-driven anxiety and depression.

Japan and China have historically had higher recorded prevalence due to dietary habits, but with globalization, broader awareness is essential, particularly in urgent care and emergency departments where rapid recognition relieves concern for more serious etiologies.

## CONCLUSION

Shiitake dermatitis is a **distinctive yet under-recognized toxicoderma** caused by ingestion of raw or undercooked shiitake mushrooms containing lentinan. Recognition of the characteristic flagellate rash avoids unnecessary diagnostic workups and inappropriate treatments, and mitigates the physical and psychosocial burden of prolonged pruritic eruptions.

Clinicians should maintain a **high index of suspicion** in patients with a compatible dietary history. Proper cooking of shiitake mushrooms remains a simple and highly effective preventive strategy.

## TAKE-HOME POINTS

- Ask about **mushroom intake in the past 48–72 hours** with any flagellate rash.
- **Diagnosis is clinical:** no biopsy or allergy testing required.
- Treat **supportively** with antihistamines and cool compresses; the course is self-limited.
- Prevention: **ensure adequate cooking** to denature lentinan.

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