

“Cotton Fever”

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Cotton fever is a self-limiting febrile illness most commonly seen in people who inject drugs, typically after reusing or filtering substances through cotton. While the condition is usually benign and resolves within 24 hours, it can closely mimic more serious infections such as bacteremia or sepsis.

Cause – Most cases are thought to result from an endotoxin (lipopolysaccharide, LPS) produced by *Pantoea agglomerans* (formerly *Enterobacter agglomerans*), a bacterium commonly found on cotton plants. Other theories described suggest that the water-soluble, heat-labile extracts from cotton are highly inflammatory, or that it may involve pre-formed antibodies to cotton, leading to a type II hypersensitivity response.

Pathophysiology – Intravenous drug users draw their solution through cotton filters (e.g., Q-tips, cigarette filters). Endotoxin contamination → cytokine surge → fever, chills, tachycardia.

Classic Presentation – Onset is **rapid (within 10–30 minutes)** after injection, with fever, chills, malaise, myalgias, tachycardia, myalgias, abdominal pain, and sometimes leukocytosis — often mimics bacteremia.

Self-Limiting Course – Symptoms usually **resolve spontaneously within 6-12 hours, rarely 24 hours** (though patients almost always present to the ED because it mimics an infectious process).

Diagnostic Challenge – **Indistinguishable from infectious process at the bedside.** Blood cultures are usually negative, but ruling out true bacteremia is essential.

Epidemiology – Common enough in intravenous drug-using populations that many patients know the term “cotton fever” and may self-diagnose when presenting to the ED.

Management – Supportive care (antipyretics, IV fluids). Empiric antibiotics are often started until cultures return negative because it’s a diagnosis of exclusion.

Prognosis – Generally benign with no long-term sequelae. Recurrence is common if the patient continues to inject with cotton.

Complications – Rare, but missing a true **endocarditis, sepsis, or skin/soft tissue infection** can be fatal. Cotton fever should never be assumed without workup.

Clinical Pearl – Think of cotton fever in **intravenous drug users with sudden fever and chills post-injection**, but always treat like an infectious process until proven otherwise. It's a classic **“can't miss mimic”** in toxicology and emergency medicine.

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