

# Isolated tricuspid valve infective endocarditis with multiple septic pulmonary emboli in a patient with atopic dermatitis

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## Abstract

Multiple lung nodules in atopic dermatitis patients may reflect infective endocarditis. Our case underlines the importance of potentially severe infections due to staphylococci associated with atopic dermatitis.

## The title of the paper

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## KEYWORDS

atopic dermatitis, multiple septic pulmonary embolism, isolated tricuspid valve infective endocarditis

## KEY CLINICAL MESSAGE

Atopic dermatitis may cause infective endocarditis associated with staphylococci. Generally, Right-sided infective endocarditis responds well to medication, but our patient had multiple organ failure and required long-term ICU management.

A 51-year-old man with severe atopic dermatitis (AD) visited our hospital with high fever and general malaise. On physical examination, his body temperature was 39.8°C, heart rate was 129/min, blood pressure was 115/71mmHg, respiratory rate was 25 breaths/min, and oxygen saturation was 97% under room air. Laboratory tests showed the following results: white cell count 17,600/ $\mu$ L, C-reactive protein 32.4 mg/dL, and procalcitonin 17.3 ng/mL. Chest computed tomography showed multiple cavities in bilateral lungs, consistent with septic emboli (Figure 1). Transthoracic echocardiography revealed a vegetation on the tricuspid valve (Figure 2). Blood cultures revealed methicillin-sensitive *Staphylococcus aureus*.

It is generally reported that right-sided Infective endocarditis (IE) displays a good response to medical therapy. However, our patient initially suffered from multiple organ failure, so we performed long-term ventilation management and blood purification.

IE due to *S. aureus* occasionally occur in patients with AD, because AD lesions are often colonized by *S. aureus*<sup>1</sup>, and the biofilm is almost ubiquitous in AD lesion skin. The perivalvular abscess and the valve perforation as *S. aureus* -linked IE manifestation of tissue destruction were associated with high mortality<sup>2</sup>.

## CONFLICT OF INTEREST

The authors report no conflict of interest.

## REFERENCES

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## FIGURE LEGENDS

Figure 1: Axial computed tomography section in lung on admission shows multiple nodules (arrows) and cavitory infiltrates (A-D), feeding vessel sign (arrowhead) (C), and bilateral pleural effusion in bilateral lungs.

Figure 2: Transthoracic echocardiogram shows a huge vegetation (arrow heads) of 3cm or more attached to the tricuspid valve extending to the pulmonary artery (A, B).

## AUTHOR CONTRIBUTIONS

NS: involved in conception and design, manuscript preparation.

NI: made diagnosis, obtained and edited images, and prepared.

EM and MN: obtained images and reviewed the manuscript.

YT, KH and YS : reviewed the manuscript.





