

# Painful nodules on the fingers and toes

## Keng Yin Loh

BMedSc, MMed(FamMed), is Senior Lecturer, Department of Family Medicine, International Medical University, Jalan Rasah, Seremban, Malaysia. [kengyin\\_loh@imu.edu.my](mailto:kengyin_loh@imu.edu.my)

### Case study

A 25 year old college student with a past history of congenital heart disease presented with high grade fever and palpitations. He complained of painful red nodules on his finger pulp and his toes.



### Question 1

What are these skin lesions?

### Question 2

What is the underlying diagnosis and how would you explain the skin findings?

### Question 3

What further investigations are necessary?

### Answer 1

Osler nodes. These are painful subcutaneous nodules at the pulp of the fingers caused by septic microemboli and although not always present, are highly diagnostic of infective endocarditis.

### Answer 2

Based on history of fever and the past history of congenital heart disease, the most likely diagnosis is infective endocarditis. Structural heart lesions such as congenital heart disease and valvular damage cause nonbacterial thromboemboli. A subsequent bacteremia (due to any cause) can lead to seeding of bacteria and septic vegetations develop. Microemboli from these infected vegetations can get dislodged in the circulation and seed in different parts of the body, including vessels of the skin, giving rise to various embolic phenomena

such as Osler nodes. Other peripheral manifestations of infective endocarditis include petechial rash, splinter haemorrhage and Janeway lesions.<sup>1</sup>

### Answer 3

The patient needs urgent investigations such as multiple (at least three) sets of blood culture (first and last set at least 1 hour apart), full blood count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and echocardiogram (preferably transoesophageal echocardiogram [TOE]) to detect any valvular involvement and vegetations.<sup>1,2</sup> Antimicrobial treatment for a minimum of 4–6 weeks is warranted once the diagnosis is established.<sup>1,2</sup>

Conflict of interest: none declared.

### References

1. Mylonakis E, Calderwood S. Infective endocarditis in adults. *N Engl J Med* 2001;345:1318–30.
2. Durack DT, Lukes AS, Bright DK. New criteria for diagnosis of infective endocarditis: utilisation of specific echocardiographic findings. *Duke Endocarditis Service. Am J Med* 1994;96:200–9.