IMAGE CHALLENGE

Purpura on the truncus and extremities

CLINICAL INTRODUCTION

A 36-year-old woman with Down's syndrome and spleen hypoplasia presented with a fever of 40°C lasting for 12 h. She had taken 1 mg prednisolone/day for mild graft-versus-host disease after allogeneic stem cell transplantation 4 years previously. Her BP was 91/44 mm Hg, HR 110 beats/min and RR 30 breaths/

min. Her heart sound, lung sound and skin appearance were unremarkable. Laboratory findings showed leucocytosis ($13.12 \times 10^9/L$) and normal platelet count ($269 \times 10^9/L$). She was discharged home, but 16 h after fever onset, experienced cardiopulmonary arrest.

QUESTION

What does the image show?

- A. Henoch–Schönlein purpura
- B. Steroid purpura
- C. Postmortem lividity
- D. Purpura fulminans

For the answer see page 199

Purpura on the truncus and extremities

From the question on page 174

ANSWER: D

DIAGNOSIS: acute infectious purpura fulminans (PF) caused by *Streptococcus pneumoniae*.

Figure 1 shows systemic impalpable purpura that rapidly emerged on the patient's truncus gravity-independently. Gram staining of her peripheral blood revealed gram-positive diplococci (figure 2, arrows), indicative of acute infectious PF caused by *S. pneumoniae*. Despite strenuous resuscitation and broad-spectrum antibiotic administration, she died. Her blood culture results subsequently tested positive for *S. pneumoniae*.

PF is a rare, fatal syndrome accompanied by skin necrosis and disseminated intravascular coagulation, caused by protein C-deficiency or overwhelming sepsis,¹ typically caused by *Neisseria meningitidis* and *S. pneumoniae*.² This patient had hyposplenism, a risk factor for invasive *N. meningitidis* and *S. pneumoniae* infection.³ Systemic purpura and a rapid, progressive clinical course is indicative of PF, but obtaining blood culture results to confirm infection requires several days. Gram staining of a peripheral blood sample may be useful for identifying causative bacteria, guiding an early decision to use empirical antibiotics.

Henoch-Schönlein purpura is rare and usually benign in adults, and is typically characterised by elevated palpable purpura and abdominal pain. Long-term corticosteroid administration causes steroid purpura, but never causes cardiopulmonary arrest (CPA). Postmortem lividity generally appears 15 h after death; this patient was immediately taken to the hospital upon CPA; therefore, postmortem lividity was not a consideration.

Ryutaro Tanizaki,¹ Masaki Oya,² Yousuke Takemura³

¹Department of Community Medicine, IGA, Mie University Graduate School of Medicine, Tsu-city, Mie, Japan

²General Medicine, Nabari City Hospital, Nabari-city, Mie, Japan

³Department of Family Medicine, Mie University School of Medicine and Graduate School of Medicine, Tsu-city, Mie, Japan

Figure 1 The patient's appearance on readmission.

Figure 2 Gram-stained sample of the patient's peripheral blood. The arrows suggest typical gram positive diplococci.

Correspondence to Dr Ryutaro Tanizaki, General Medicine, Nabari City Hospital, West 1st-178, Yurigaoka, Nabari-city, Mie 518-0481, Japan; rtanizak20@clin.medic.mie-u.ac.jp

Contributors RT and MO wrote this paper. YT supervised it.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; internally peer reviewed.

OPEN ACCESS

Open Access This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

CrossMark

To cite Tanizaki R, Oya M, Takemura Y. *Emerg Med J* 2017;**34**:199.

Received 3 October 2016

Emerg Med J 2017;**34**:199.

doi:10.1136/emermed-2016-205777

REFERENCES

- 1 Lerolle N, Carlotti A, Melican K, et al. Assessment of the interplay between blood and skin vascular abnormalities in adult purpura fulminans. *Am J Respir Crit Care Med* 2013;188:684–92.
- 2 Levin M, Eley BS, Louis J, et al. Postinfectious purpura fulminans caused by an autoantibody directed against protein S. *J Pediatr* 1995;127:355–63.
- 3 Di Sabatino A, Carsetti R, Corazza GR. Post-splenectomy and hyposplenic states. *Lancet* 2011;378:86–97.