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Figure 1. Stellate purpura with a central gunmetal-gray hue suggestive of meningococemia.

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An 18-month-old girl with an unremarkable birth history presented to our pediatric emergency department with a fever and rash that began the previous day. The patient's mother stated that the patient also had decreased oral intake, reduced urine output, and 2 episodes of nonbloody nonbilious emesis. Her vital signs included a pulse rate of 185 beats/min, respiratory rate of 43 breaths/min, blood pressure of 88/42 mmHg, oxygen saturation of 95% on room air, and a rectal temperature of 38.7°C (101.6°F). On physical examination, the patient appeared irritable and lethargic. Her skin revealed petechiae and purpura on the torso, upper extremities, and most prominently on the right hip. Laboratory study results were remarkable for a WBC count of 3.5/ μ L, platelet count of 45/ μ L, prothrombin time of 135 seconds, partial thromboplastin time of greater than 200 seconds, and serum lactate level of 5 mmol/L.



Figure 2. Thrombosis and gangrene of the thumb. Used with permission of David R. Mishkin, MD, Department of Emergency Medicine, Wayne State University/Detroit Medical Center, Detroit, MI.

For the diagnosis and teaching points, see page 180.

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APPENDIX:

In addition to the authors listed at the beginning of the article, the following investigators and institutions participated in this study.

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DIAGNOSIS:

Purpura fulminans. Purpura fulminans, a widespread ecchymosis and gangrene of the extremities, is a clinical manifestation of acute meningococcal septicemia.¹ Meningococcemia is characterized by an abrupt onset of fever and rash. The rash is identified by petechiae, which are the most common sign, occurring in 50% to 60% of patients with meningococcemia.² Petechiae are most often located on the extremities and trunk but may involve any body part. As the disease progresses, pustules, bullae, and hemorrhagic lesions with central necrosis may develop. The presence of stellate purpura with a central gunmetal-gray hue is highly suggestive of meningococcemia (Figure 1).³ Large purpuric lesions with necrotic areas are associated with disseminated intravascular coagulation and are characteristic of purpura fulminans, which is often associated with the rapid onset of hypotension, acute adrenal hemorrhage (Waterhouse-Friderichsen syndrome), and multiorgan failure.¹ Vascular complications can lead to the loss of digits or limbs (Figure 2), leaving survivors severely handicapped.^{1,2}

The diagnosis of meningococcemia is often made clinically; however, it can be confirmed by isolating *Neisseria meningitidis* from blood cultures. Management includes supportive care and prompt administration of antibiotics once the diagnosis is suspected.⁴ Patients should be cared for in the ICU. Despite antimicrobial therapy, the mortality approaches 20% to 25%, with most deaths occurring within the first 48 hours.⁵ The patient in our scenario demonstrated positive blood culture for *Neisseria meningitidis*, underwent a prolonged and complicated hospital course in the pediatric ICU, and continues to receive hemodialysis.

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