Purpura fulminans causing acute cortical necrosis in postpartum period

Mohan Kumar, Kundan Mishra, Vikas Suri, Savita Kumari

Internal Medicine, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Correspondence to
Dr Mohan Kumar,
monu8501@gmail.com

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DESCRIPTION

A 22-year-old woman underwent normal vaginal delivery; 3 days later, she developed fever and rashes over all four limbs followed by decreased urine output. Examination revealed pedal oedema, non-palpable purpuric lesions over extremities with erosions at few places, and blackish discolouration of second and third toe of right foot (figure 1A). On investigation, haemoglobin was 6.7 g/dL, white blood cell 26 200/mm^3, platelet 39 000/mm^3, prothrombin time 25 s (control 12–14 s), activated thromboplastin time 38 s (control 24–30 s) and serum creatinine 9.1 mg/dL. Urine showed albumin 1+. Ultrasound was suggestive of bilateral acute renal parenchymal disease. Work-up for tropical infections was negative. Clinical diagnosis of puerperal sepsis causing purpura fulminans and acute kidney injury was made.

Patient was managed with haemodialysis and packed red blood cell infusion. She had persistent anuria and contrast-enhanced CT showed acute bilateral renal cortical necrosis (figure 1B). Skin biopsy showed erythema multiforme. She underwent amputation for digital gangrene. Hypercoagulable state work-up was done 6 weeks after the acute insult showed normal protein C, protein S, factor V and homocysteine level. Six months later, she continues to be anuric, and skin lesions have disappeared with mild hypopigmentation.

Renal cortical necrosis is a rare entity, caused by significantly diminished arterial perfusion of the kidneys due to spasms of the feeding arteries, microvascular injury or disseminated intravascular coagulation and is the pathological progression of acute tubular necrosis.[1 2] Contrast-enhanced CT also shows characteristic findings such as lack of cortical enhancement, medullary enhancement and absent renal excretion.[3]

Early initiation of dialysis is the key to improved outcome. However, In most of the cases, recovery is not complete. If untreated, mortality rate exceeds 50%.[2]

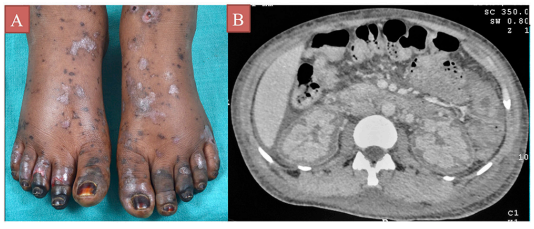

Figure 1 Clinical photograph showing multiple non-palpable purpuric lesions over extremities with erosions at few places and blackish discolouration of toes (A). CT scan of abdomen showing acute bilateral renal cortical necrosis (B).

Learning points

- The clinical photograph shows the typical lesions associated with purpura fulminans.
- CT image shows the diagnostic appearance of acute cortical necrosis precluding renal biopsy, which has an increased risk of complications in the presence of Disseminated Intravascular Coagulation (DIC).
- Early and aggressive management pending evaluation is the key to successful outcome in patients with acute cortical necrosis.

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