# Case Reports

## A 12-Year-Gld Boy with Fever and Blue Ears

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Typhoid fever is endemic in tropical countries including India. In fact, waterborne diseases account for over 80% admissions in the hospital. As compared to adult patients, children with typhoid fever are less prone to get complications. The common complications of typhoid fever in children include circulatory collapse, encephalopathy, hepatitis, gastrointestinal hemorrhage and carrier state. In this communication we report an extremely rare complication of gangrene of both ears in a 10-year old boy with typhoid fever.

### Case Report

A 12-year-old boy was admitted in February 1996 with a history of moderate grade, intermittent fever without localization for eight days and bluish discoloration of both ears for one day. There was no bleeding from any site, no skin rash or past history of similar illness. On examination the blood pressure was 90/60 mm Hg. He had marked toxicity, tachycardia, moderate pallor, a few scattered petechiae on his cheeks and forearms and there was a tender bluish-black, gangrenous discoloration of both ears *(Fig. 1)*. All peripheral pulses were palpable and there was no carotid bruit. His spleen was palpable one cm below the costal margin but there was no hepatomegaly or lymphadenopathy. Investigations revealed hemoglobin of 6.9 g/dl and total leukocyte count of $4.8 \times 10^9$/L with 76% neutrophils and 24% lymphocytes. There were no immature cells or malarial parasites; platelets were reduced on the peripheral smear examination. Urine and CSF examinations were normal.

He was started on parenteral crystalline penicillin, ceftriaxone, hydrocortisone, intravenous fluids and inotropic support as blood pressure continued to fall, on presumptive diagnosis of meningococcemia or other gram negative sepsis. Studies for disseminated intravascular coagulation (DIC), tests for sickling and homocystinuria and an EKG were normal. Echocardiographic examination of the heart revealed a normal heart without any vegetations. Subsequently blood culture was reported to grow *Salmonella typhi* sensitive to ciprofloxacin and the Widal's reaction was positive in a titre of 1:160. The patient was treated with parenteral ciprofloxacin and was afebrile after five days. On follow up after one month he was doing well and the gangrenous patches on the ears had almost resolved.

### Discussion

Symmetrical peripheral gangrene is said to be present when the distal parts of two or more extremities (including limbs, nose, ears, cheeks or perineum) undergo ischemic changes without obstruction to the main arteries supplying them(l). The important causes include peripheral vasos-

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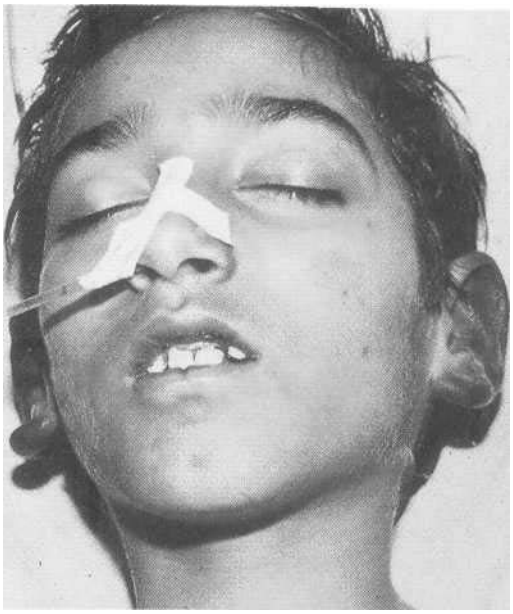

*Fig. 1. Pctecliiae and gangrenous blue ears at admission.*

pasm as in Raynauds' syndrome and ergotism; DIC; or a fall in cardiac output due to arrhythmia, myocardial infarction or even obstructing intracardiac tumor(l). The various pathogenetic mechanisms for development of peripheral gangrene in systemic infections include the Schwartzman reaction, bacterial endotoxin release, platelet sludging due to vascular collapse and DIC(2). Meningococcemia is most commonly implicated in the development of this complication though varicella, streptococci, pneumococci, staphylococci, scarlet fever, *Pseudomonas,* rubeola, *Salmonella paratyphi, E. coll, Klebsiella, Proteus* and *Pastenrella* have all been implicated(2). Peripheral gangrene of the feet has been reported in two Nigerian children with sickle cell anemia and *Salmonella typhi* infection(3). *Salmonella typhi* infection has also been documented to cause myocarditis and large vessel thrombosis, involving the femoral artery(4). Typhoid fever is relatively common in India but occurrence of peripheral gangrene is exceedingly rare. In our patient, endotoxemia and resultant hypotension and platelet sludging may have been responsible for the symmetrical gangrene in the absence of abnormal DIC studies or any evidence for embolization. Management of a patient with symmetrical peripheral gangrene should include careful evaluation for cardiovascular abnormalities, DIC and bacterial infections.

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