

Reversible bilateral lower limb gangrene in a neonate at birth

Einas Elzubier Elmalik , Mohammad A A Bayoumi 

Neonatal Intensive Care Unit (NICU), Women's Wellness and Research Center (WWRC), Hamad Medical Corporation, Doha, Qatar

Correspondence to

Dr Mohammad A A Bayoumi; moh.abdelwahab@hotmail.com

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DESCRIPTION

The case is of a male infant born preterm vaginally at 25 weeks. The mother was 31 years old, gravida 5 para 3, and neither diabetic nor hypertensive. She developed preterm premature rupture of membranes 2 weeks before delivery. At that time, she was started on oral erythromycin 250 mg tablet every 6 hours for 1 week. She also received 2 doses of betamethasone 12 mg intramuscular every 24 hours for 1 week before delivery to enhance fetal lung maturation. She was seen in the antenatal clinic 1 week before the onset of labour. On the delivery day, she arrived at the emergency room (ER) fully dilated. After vaginal examination in the ER, the obstetric team palpated a cervical cerclage in place that was compressing the umbilical cord, leading to very faint and weak umbilical vessel pulses. Any intervention was not possible at that time as it was more important and urgent to save the infant. Moreover, the team did not want to risk another complication. The cerclage was therefore released just before the delivery.

The infant required positive pressure ventilation and endotracheal intubation, and surfactant administration in the delivery room. At birth, the infant was noted to have symmetrical blackish discolouration of the lower half of the body with a line of demarcation just below the umbilicus (figure 1). The distal pulsations were felt equally on both lower limbs.

The neonatal team considered several serious differential diagnoses including aortic thrombosis

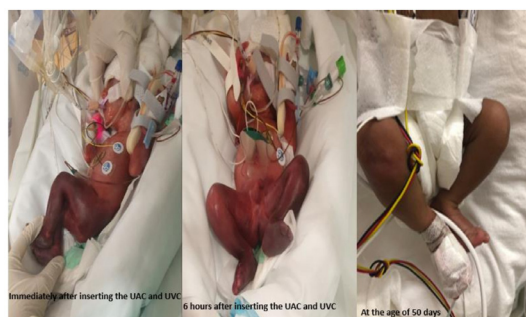


Figure 1 Symmetrical blackish discolouration of the lower half of the body with a line of demarcation just below the umbilicus. The patient's condition gradually improved from the age of 6 hours till complete resolution at the age of 3 days; the sensation function was completely preserved. The photo on the right side was taken at the age of 50 days after full feeding. The infant was on intravenous antibiotics for presumed sepsis with a healthy peripheral intravenous line on the dorsum of the right foot.

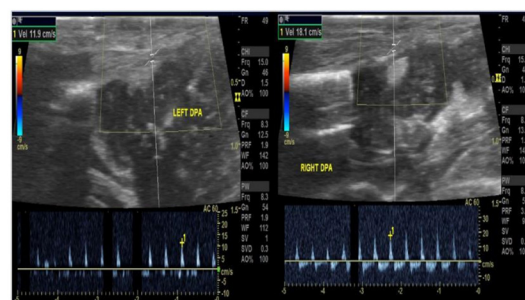


Figure 2 Doppler ultrasound of the dorsalis pedis artery on both sides. The artery shows a patent flow with no obvious intraluminal thrombus or stenosis. The available spectral flow pattern appears unremarkable and the peak systolic velocity is within the normal range.

or embolism, umbilical arterial thrombosis or embolism, umbilical venous thrombosis, distal aortic or femoral arterial stenosis, septic thrombosis or embolism and congenital hypercoagulable states.¹

To determine the exact diagnosis, urgent lower limb Doppler ultrasound was requested. Interestingly, the ultrasound result was deemed normal by different experts in the first few hours of life (figure 2). Sepsis workup, including blood culture, was done at birth and it came back negative. Congenital thrombophilia and hypercoagulable states were excluded based on normal levels of protein C, protein S and Factor V Leiden in the infant's blood after birth. Head, renovascular and abdominal ultrasound studies did not show any evidence of vascular anomalies, thrombosis, or tortuosity.

A therapeutic dilemma was raised when the infant needed umbilical arterial catheterisation (UAC) and umbilical venous catheterisation (UVC). Based on the equal and strong distal pulsations in both lower limbs as well as the Doppler ultrasound findings, the team agreed to insert the umbilical catheters with very close monitoring. UAC and UVC insertions were clinically mandated despite the potential risk of compromising limb perfusion. UAC and UVC were inserted successfully and kept in an optimal position. Close follow-up showed gradual improvement in the colour of the lower half of the body which started at the age of 6 hours till complete resolution on the third day of life.

As a final diagnostic aetiology, the neonatal team labelled this patient as a reversible bilateral lower limb gangrene due to umbilical cord compression by the cervical cerclage.

This is a very rare presentation of reversible lower limb gangrene at birth.²⁻⁴ Unusual decisions



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in critical situations are sometimes needed in the neonatal intensive care unit.

Learning points

- ▶ Multidisciplinary team discussion and management with proper documentation and family counselling are the cornerstones of promoting safety in neonatal intensive care units.
- ▶ Critical thinking and unusual decisions in critical situations are sometimes needed in neonatal practice.

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ORCID iDs

Einas Elzubier Elmalik <http://orcid.org/0000-0003-2518-8161>

Mohammad A A Bayoumi <http://orcid.org/0000-0002-2627-4806>

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