

Case Report: Neonatal* Laminar Cortical Necrosis

Michael Kean; Michael Ditchfield, M.D.

Children's MRI Centre, Royal Children's Hospital, Parkville, Victoria, Australia

Patient history

The patient was transferred from the Pediatric Intensive Care Unit, severe group B strep with shock. The patient was acidotic and seizing. The clinical question concerned cerebral injury.

Sequence details

Standard neonatal hypoxic ischemic injury series including transverse and coronal T2-weighted images, diffusion-weighted imaging (DWI) with SPAIR, susceptibility-weighted images (SWI), 3D MPRAGE T1 and Water Excitation (WE) 3D MPRAGE post contrast.

Parameters:

SWI (TR/TE 28/20, TA 5:48 min, SL 9.6 mm, FoV 124 x 180, matrix 172 x 384). T2 TSE Restore with *syngo* BLADE (TR/TE 5170/145, TA 2:56 min, SL 2.5 mm, FoV 135 x 135, matrix 256 x 256). The images were acquired on a 3T MAGNETOM Trio, A Tim System with software version *syngo* MR 15B using the transmit/receive extremity coil.

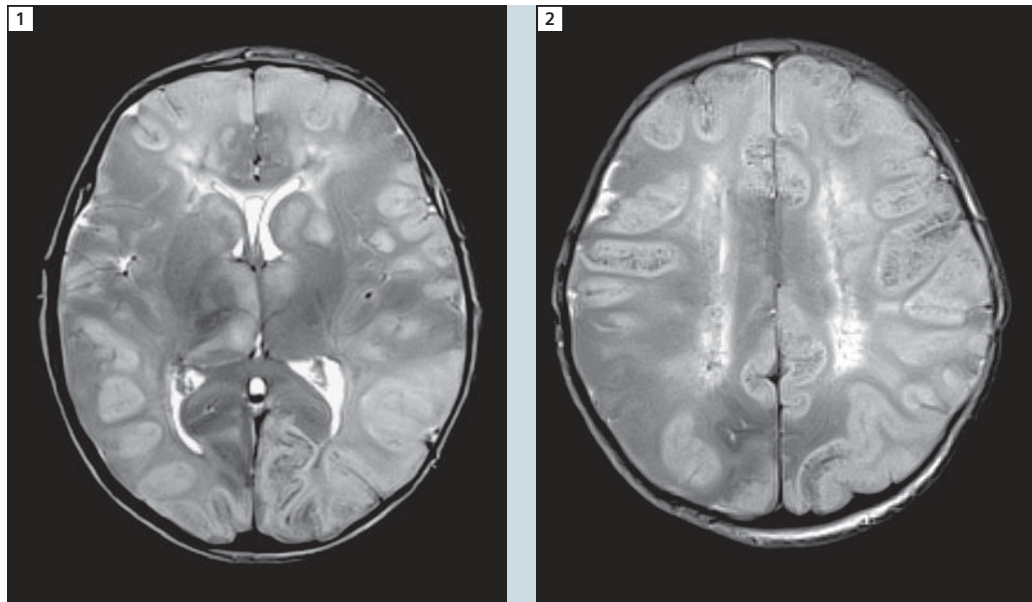
Image findings

Images show extensive bilateral hemorrhagic laminar necrosis and bilateral basal ganglia foci of focal cerebritis or ischemia.

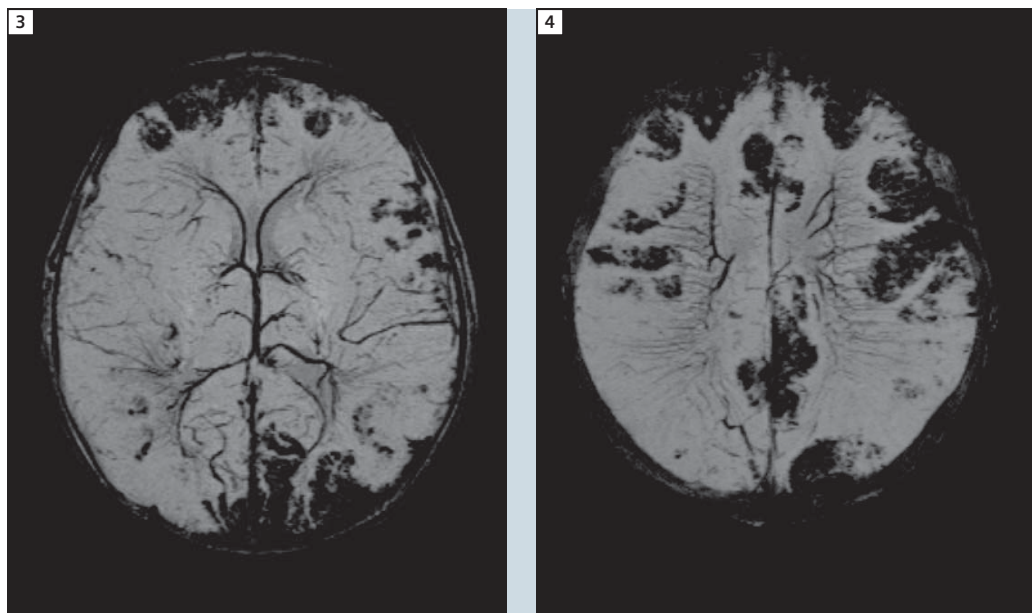
Discussion

Standard neonatal T2-weighted imaging utilizes *syngo* BLADE motion correction to permit increased signal-to-noise without scan time penalty. Whole head T2-weighted imaging utilizing *syngo* BLADE enables 2.5 mm high-resolution slices to be acquired in 3 minutes. SWI images are acquired using 1.2 mm slices with high in-plane resolution of 0.6 mm.

* The safety of imaging fetuses/infants has not been established.



1 2 In these exemplary chosen transversal T2-weighted Turbo Spin Echo images, the extensive bilateral laminar necrosis and the presence of basal ganglia foci are clearly visible.



3 4 Corresponding susceptibility-weighted images (*syngo* SWI) clearly visualize the extensive hemorrhage.