

Delayed computed tomography appearances of hypoxic ischaemic injury in premature neonates

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Unlike full-term neonates, the periventricular region of premature neonates is considered at high risk for ischaemia due to the immaturity of the vascular supply. The end result of an ischaemic insult in this region is termed leukomalacia. The most commonly affected periventricular white matter locations are those around the trigone and those adjacent to the foraminae of Monro. Cavitation



Fig. 1. Marked supratentorial white matter loss seen as cystic (low-density) areas of liquefaction abutting the ventricles. This area of leukomalacia is circumscribed by a thin ribbon of cortex (arrowheads). The grey matter and cerebellum are both spared in keeping with a hypoxic rather than a more severe anoxic episode.

occurs only 2 - 6 weeks after injury and the cystic change approaches the

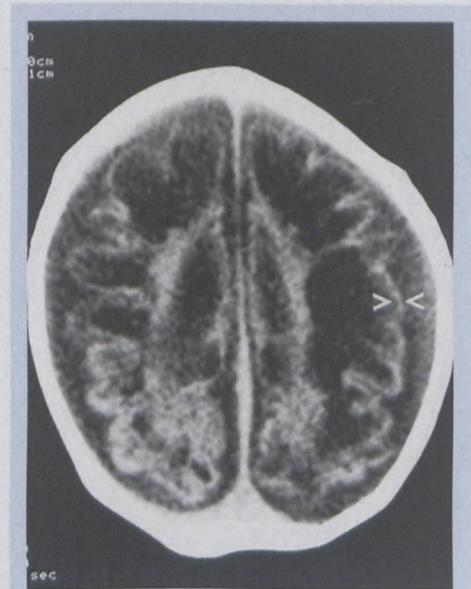


Fig. 2. Leukomalacia affecting the centrum semiovale with prominent CSF spaces around the brain and only a thin remaining rim of cortex (arrowheads).

ventricular walls until these can no longer be identified on imaging. In premature neonates, these cystic areas represent liquefaction without glial response. After an anoxic episode, e.g. cardiovascular arrest, grey matter nuclei and brain stem nuclei also show low density.¹ Ultrasound (US) should be used when the anterior fontanelle is open. Computed tomography (CT) is indicated after fontanelle closure and when there is non-specific ventricular enlargement found at US.

Reference

1. Barkovich AJ. *Paediatric Neuroimaging*. 2nd ed. Philadelphia: Lippincott-Raven, 1996: 113-145.