

Letter to the Editor

Neuropathology of Fatal Infant Head Injury

Dear Editor:

We read with great interest the careful study by Dr. Reichard and his colleagues (Reichard RR, White CL, Hladik CL, Dolinak D. Beta-amyloid precursor protein staining of nonaccidental central nervous system injury in pediatric autopsies. *J. Neurotrauma* 2003;**20**: 347–355). The paper provides some valuable information about the neuropathology of fatal infant head injury. It confirms that patterns of brain damage in infants under one year old are markedly different from those seen in older children, and that severe parenchymal traumatic damage, or DAI, is a rarity in the very young.

The issue that concerns us however is that, like many other studies in the literature, the criteria on which the authors classified their cases as non-accidental injury are not stated, beyond an assurance that the “the manner of death was homicide in all cases,” as judged by the referring forensic pathologist (Dr. Reichard, personal communication). It is important to appreciate that the terms “non-accidental injury” or “homicide” are not diagnoses, but labels that ascribe pathogenetic mechanisms to a constellation of signs and symptoms—in infant cases, often merely on the grounds that no other plausible explanation has been found. Recent work has shown that the evidence base for what is believed about the biomechanics and neuropathology of pediatric head injury is not as solid as once thought (Geddes et al., 2001b; Ommaya et al., 2002; Plunkett, 2001), and in a situation in which no one except the carer knows what took place, and where objective signs of trauma—let alone *inflicted* trauma—may be absent, it is essential that every effort be made to establish objective criteria before labeling an injury abusive, and including it in a scientific study.

But perhaps it is pertinent to ask whether authors of scientific papers should in fact be distinguishing between inflicted and accidental injury? We admit we are as guilty

as Dr. Reichard and his colleagues in this respect (Geddes et al., 2001a,b), and the justification is of course that those of us who do medicolegal work in this area desperately need solid scientific data on which to base our expert opinions. Nevertheless, a head injury is a head injury, and we are beginning to come to the conclusion that unless the circumstances of the injury are known in detail from independent witnesses, it is scientifically much more honest to recognize that from a biomechanical engineering perspective, the loading conditions are the loading conditions, regardless of intent, and to leave the label “non-accidental” to a jury.

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