

APPENDIX B

Timeline of Research on Retinal Hemorrhages Causes

2002- Jeffrey Havard's Trial

2002

- AK Ommaya et al., *Biomechanics and Neuropathology of Adult and Pediatric Head Injury*, 16 Brit. J. Neurosurgery 220 (2002). The level of force for retinal hemorrhages from shaking is biomechanically improbable; case studies confirm that retinal hemorrhages and other ocular findings also found in accidental injury & natural disease

2003

- MG Gilliland & P. Luthert, *Why do Histology on Retinal Hemorrhages in Suspected Non-Accidental Injury?*, 43 Histology 592 (2003). Careful histological examination of retinal hemorrhages is extremely important and there is debate about the significance of findings.

2004

- PE Lantz et al., *Evidence Based Case Report: Perimacular Retinal Folds from Childhood Head Trauma*, 328 BMJ 754 (2004). Retinal folds found in child killed after a television accidentally fell on him.

2006

- LA Hughes et al., *Incidence, Distribution and Duration of Birth-Related Retinal Hemorrhages: a Prospective Study*, 10 J. Am. Ass'n Pediatric Ophthalmology & Strabismus 102 (2006). Retinal hemorrhages caused by vacuum delivery birth were still seen in infants 58 days after birth.
- GT Leuder et al., *Perimacular Retinal Folds Simulating Nonaccidental Injury in an Infant*, 124 Archives Ophthalmology 1782 (2006). Retinal hemorrhages found in a four month old child who was killed when a six year old fell on him.

2007

- P. Steinbok et al., *Early Hypodensity on Computed Tomographic Scan of the Brain in an Accidental Pediatric Head Injury*, 60 Neurosurgery 689 (2007). Retinal hemorrhages seen in accident scenarios.

2008

- P. Watts & E. Obi, *Retinal Folds and Retinoschisis in Accidental and Non-accidental Head Injury*, 22 Eye (London) 1514 (2008). Case study of one accidental head injury and one non-accidental shows very similar retinal hemorrhages, supporting the argument that no retinal signs are seen exclusively in non-accidental head injuries.

2010

- JP Lopez et al., *Severe Retinal Hemorrhages in Infants with Aggressive, Fatal Streptococcus Pneumoniae Meningitis*, 14 J. Am. Ass'n Pediatric Ophthalmology & Strabismus 97 (2010). Retinal hemorrhages have been found in children with bacterial

meningitis, with severe, bilateral retinal hemorrhages found in cases of fatal streptococcus pneumoniae meningitis.

- Evan Matshes, *Retinal and Optic Nerve Sheath Hemorrhages Are Not Pathognomonic of Abusive Head Injury*, 16 Proceedings Am. Acad. Forensic Sci. 272 (2010). The Dallas medical examiner found retinal hemorrhages in many situations other than abuse and may be linked to cerebral edema and life support.

2011

- PE Lantz & DE Couture, *Fatal Acute Intracranial Injury, Subdural Hematoma and Retinal Hemorrhages Caused by Stairway Falls*, 56 J. Forensic Sci. 1648 (2011). Study proving short falls can kill and retinal hemorrhages can be found after short falls.
- SC Gabaeff, *Challenging the Pathophysiologic Connection Between Subdural Hematoma, Retinal Hemorrhage and Shaken Baby Syndrome*, 12 W. J. Emergency Med. 535 (2011). Retinal hemorrhage is not pathognomonic of SBS and occurs in many causes of increased intracranial pressure, including hypoxic brain injury.

2012

- S. Agrawal et al., *Prevalence of Retinal Hemorrhages in Critically Ill Children*, 129 Pediatrics 1388 (2012). Retinal hemorrhages were found in critically ill children (no AHT/SBS) with the most severe hemorrhages found in children with fatal accidental trauma, severe coagulopathy, or sepsis with myeloid leukemia.

2013

- GG Adams et al., *Appearance and Location of Retinal Hemorrhages in Critically Ill Children*, 97 Brit. J. Ophthalmology 1138 (2013). Retinal hemorrhages found in critically ill children (no abuse) including those with severe coagulopathy, leukemia, traffic accidents, and a short fall.
- G. Binenbaum et al., *Patterns of Retinal Hemorrhage Associated with Increased Intracranial Pressure in Children*, 132 Pediatrics 430 (2013). Retinal hemorrhages found in children (absence of trauma) with increased intracranial pressure.
- H. Pham et al., *Retinal Hemorrhage After Cardiopulmonary Resuscitation with Chest Compressions*, 34 Am. J. Forensic Med. & Pathology 122 (2013). Retinal hemorrhages, while uncommon, can occur in children after CPR-CC.

2014

- SQ Longmuir et al., *Retinal Hemorrhages in Intubated Pediatric Intensive Care Patients*, 18 J. Am. Ass'n Pediatric Ophthalmology & Strabismus 129 (2014). Retinal hemorrhages found in intubated children that were not diagnosed with SBS/AHT.