



### **G87 Perimacular Retinal Folds and the Shaken Baby Syndrome: Critical Appraisal Testing of the Current Medical Literature**

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The goals of this presentation are to discuss the limitations of the current medical literature regarding specificity and presumptive causal mechanism of perimacular retinal folds in Shaken Baby Syndrome.

Perimacular retinal folds accompanying retinal hemorrhages in childhood head trauma are considered virtually pathognomonic of Shaken Baby Syndrome by many ophthalmologists, pediatricians and forensic pathologists. The postulated mechanism is that these traumatic retinal findings result from vitreoretinal traction during cycles of acceleration-deceleration (shaking). Bilateral severe retinal hemorrhages and perimacular retinal folds observed clinically had been attributed to abusive head trauma in a 14-month-old child and a 7-month-old infant with severe acute intracranial injuries. Forensic autopsies confirmed the ocular findings but subsequent investigations concluded that the fatal injuries were non-intentional from static or quasi-static loading.

**Design:** Case reports, observational

**Testing:** Critical appraisal testing was performed on 35 medical journal articles and book chapters published from 1966-2001 that discussed presence, specificity and/or causal mechanism of perimacular retinal folds in abusive childhood head injuries.

**Results:** Publications discussing specificity or formative mechanism of perimacular retinal folds concomitant with retinal hemorrhages observed in childhood abusive head trauma consist of case reports (2), clinical and/or autopsy case series (8), unsystematic review articles (8), and book chapters (2). Two case controlled studies were found; however, one exhibited bias in control selection and the other only discussed the postulated formative mechanism. The remainder of the publications indicated that perimacular retinal folds were present in some cases of childhood abusive head trauma.

**Conclusions:** Perimacular retinal folds accompanying retinal hemorrhages in childhood head trauma cannot be regarded as diagnostic of Shaken Baby Syndrome based on the current medical literature due to study type, design bias and lack of appropriately controlled studies. Well-designed clinical and autopsy studies with suitably matched controls must be done before causative mechanism and specificity can be assigned to perimacular retinal folds when observed in children with acute intra-cranial injuries.

**Perimacular Retinal Folds, Shaken Baby Syndrome, Child Abuse**