

The O.S.C.A.R.S.
OutStanding Child Abuse Research Selections

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Pediatrics

We read spam a lot: prospective cohort study of unsolicited and unwanted academic invitations

Andrew Grey,¹ Mark J Bolland,¹ Nicola Dalbeth,¹ Greg Gamble,¹ Lynn Sadler²

Objectives To assess the amount, relevance, content, and suppressibility of academic electronic spam invitations to attend conferences or submit manuscripts.

Design Prospective cohort study.

Setting Email accounts of participating academics.

Participants Five intrepid academics and a great many publishers, editors, and conference organisers.

Intervention Unsubscribing from sender's distribution lists.

Grey, A., et al. (2016). "We read spam a lot: prospective cohort study of unsolicited and unwanted academic invitations." *BMJ* 355: f5383.

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ORIGINAL ARTICLES

Acceptance of Shaken Baby Syndrome and Abusive Head Trauma as Medical Diagnoses

Sandeep K. Narang, MD, JD,¹ Cynthia Estrada,¹ Sarah Greenberg,¹ and Daniel Lindberg, MD¹

Objective To assess the current general acceptance within the medical community of shaken baby syndrome (SBS), abusive head trauma (AHT), and several alternative explanations for findings commonly seen in abused children.

Study design This was a survey of physicians frequently involved in the evaluation of injured children at 10 leading children's hospitals. Physicians were asked to estimate the likelihood that subdural hematoma, severe retinal hemorrhages, and coma or death would result from several proposed mechanisms.

Results Of the 1378 physicians surveyed, 682 (49.5%) responded, and 628 were included in the final sample. A large majority of respondents felt that shaking with or without impact would be likely or highly likely to result in subdural hematoma, severe retinal hemorrhages, and coma or death, and that none of the alternative theories except motor vehicle collision would result in these 3 findings. SBS and AHT were considered valid diagnoses by 88% and 93% of the respondents, respectively.

Conclusions Our empirical data confirm that SBS and AHT are still generally accepted by physicians who frequently encounter suspected child abuse cases, and are considered likely sources of subdural hematoma, severe retinal hemorrhages, and coma or death in young children. Other than a high-velocity motor vehicle collision, no alternative theories of causation for these findings are generally accepted. (*J Pediatr* 2016; ■■■■■ ■■■■■ ■■■■■ ■■■■■ ■■■■■)

Narang, S. K., et al. (2016). "Acceptance of Shaken Baby Syndrome and Abusive Head Trauma as Medical Diagnoses." *J Pediatr*, 177:273-8

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CONTINUED REVIEW

Controversies in Forensic Pathology: Results of a 2010 Survey of NAME Fellows

Stephen J. Cina MD

ABSTRACT: There is a growing movement in the forensic sciences to base our opinions on a foundation of evidence based science rather than anecdotes, the idiosyncrasies of our mentors, and learned parochialism. The time is rapidly approaching when an expert in forensic pathology will no longer be able to render opinions prefaced by "Most forensic pathologists think..." or "It is widely accepted in the field that..." without producing corroborative data. This internet based study was designed to determine what broad conflict forensic pathologists really hold to be true on a select list of controversial topics. Chi-square analysis was then conducted to assess the validity of the responses and their applicability to the forensic pathology population in general. The results suggest that a majority of forensic pathologists agree that death can be caused by deployment of an electronic control device (ECD) even in the absence of drug toxicity ($p<0.001$); that pressure on the back of a person restrained in a prone position can be fatal ($p<0.01$), and that it is possible to inflict lethal head injuries on a child by shaking alone ($p<0.003$). Elaborating upon the basis for these beliefs was not the goal of the study. These data suggest that expert witnesses should rely on the scientific evidence available when testifying rather than attributing erroneous opinions to their peers based solely on their individual biases.

KEYWORDS: Forensic pathology, Conflicts and medical examinations

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The natural history of retinal hemorrhage in pediatric head trauma

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BACKGROUND: Ophthalmologists are commonly asked to interpret appearance of retinal hemorrhages (RH) in children with suspected traumatic head injury. We sought to determine the natural history of RH in young children with head trauma and to identify patterns suggestive of chiasmia in order to help establish timing of suspected traumatic injury.

METHODS: The medical records of children <2 years of age with abusive or accidental head trauma and RH on initial fundus examination who had 1 or more follow-up examinations were retrospectively reviewed. Types of RH (intraarterial, periretinal) were noted; intraretinal hemorrhage (IRH) severity was graded as mild (0-10), moderate (10-20), or severe (>20, too numerous to count) [UNTC].

RESULTS: A total of 91 eyes of 52 children were studied. All eyes had IRH (62 eyes with UNTC). In all but one eye, IRH resolved to none or mild within 1-2 weeks. UNTC IRH did not persist beyond a few days. The longest an isolated IRH persisted was 52 days. Periretinal hemorrhage (PRH) was present in 68 eyes, persisting 5-111 days. On initial examination, 23% of eyes had only IRH, 75% both PRH and IRH, no eyes had only PRH. At 2 weeks, 7% had only IRH, 19% both, and 65% only PRH. In no eyes did RH recur.

CONCLUSIONS: IRH clears rapidly, whereas PRH may persist for many weeks. The presence of UNTC IRHs indicates that trauma occurred within a few days prior to examination, whereas the presence of PRH with no or few IRHs suggests days to weeks since trauma. To accurately identify these patterns, eye examinations should be completed as soon as possible after admission, preferably within 24-48 hours. (J AAPOS 2016;20:131-135)

Binenbaum, et al. (2016) The natural history of retinal hemorrhage in pediatric head trauma. *J of Am Assoc Ped Ophth and Strab*, 20(2):131-135

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Association of Pediatric Abusive Head Trauma Rates With Macroeconomic Indicators

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ABSTRACT

OBJECTIVE: We aimed to examine abusive head trauma (AHT) incidence before, during and after the recession of 2007-2009 in 3 US regions and assess the association of economic measures with AHT incidence.

METHODS: Data for children <5 years old diagnosed with AHT between January 1, 2004, and December 31, 2012, in 3 regions were linked to county-level economic data using an ecologic time series analysis. Associations between county-level AHT rates and recession period as well as employment growth, mortgage delinquency, and foreclosure rates were examined using zero-inflated Poisson regression models.

RESULTS: During the 9-year period, 712 children were diagnosed with AHT. The mean rate of AHT per 100,000 children increased from 9.8 before the recession to 15.6 during the recession before decreasing to 12.8 after the recession.

The AHT rates after the recession were higher than the rates before the recession (incidence rate ratio 1.31, $P = .004$) but lower than rates during the recession (incidence rate ratio 0.78, $P = .005$). There was no association between the AHT rate and employment growth, mortgage delinquency rates, or foreclosure rates.

CONCLUSIONS: In the period after the recession, AHT rate was lower than during the recession period yet higher than the level before the recession, suggesting a lingering effect of the economic stress of the recession on maltreatment risk.

KEYWORDS: child abuse; economic recession; traumatic brain injury

ACADEMIC PEDIATRICS 2015; ■:1-9

Wood, J. N., et al. (2016). "Association of Pediatric Abusive Head Trauma Rates With Macroeconomic Indicators." *Acad Pediatr* 16(3): 224-232.

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Paid family leave's effect on hospital admissions for pediatric abusive head trauma

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ABSTRACT

Paediatric abusive head trauma (AHT) is a leading cause of fatal child maltreatment among young children. Current prevention efforts have not been consistently effective. Policies such as paid parental leave could potentially prevent AHT, given its impacts on risk factors for child maltreatment. To explore associations between California's 2004 paid family leave (PFL) policy and hospital admissions for AHT, we used difference-in-difference analyses of 1995–2011 US state-level data before and after the policy in California and seven comparison states. Compared with seven states with no PFL policies, California's 2004 PFL showed a significant decrease in AHT admissions in both <1- and <2-year-olds. Analyses using additional data years and comparators could yield different results.

Klevens, J., et al. (2016). "Paid family leave's effect on hospital admissions for pediatric abusive head trauma." *Inj Prev* 22(6): 442-445.



Pediatrics

Enlarged subarachnoid spaces and intracranial hemorrhage in children with accidental head trauma

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OBJECTIVE Benign external hydrocephalus (BEH) is an enlargement of the subarachnoid spaces (SAS) that can be seen in young children. It is controversial whether children with BEH are predisposed to developing subdural hemorrhage (SDH) with or without trauma. This issue is clinically relevant as a finding of unexplained SDH raises concerns about child abuse and often prompts child protection and law enforcement investigations.

METHODS This retrospective study included children (1–24 months of age) who underwent head CT scanning after an accidental fall of less than 6 feet. Head CT scans were reviewed, cranial findings were documented, and the SAS was measured and qualitatively evaluated. Enlarged SAS was defined as an intracranial space (EAS) greater than 4 mm on CT scans. Clinical measurements of head circumference (HC) were noted, and the head circumference percentile was calculated. The relationship between enlarged SAS and HC percentile, and enlarged SAS and intracranial hemorrhage (ICH), were investigated using bivariate analysis.

RESULTS Of the 110 children included in this sample, 23 had EASs greater than 4 mm. The mean patient age was 6.8 months (median 6.0 months). Thirty-four patients (30.9%) had ICHs, including subarachnoid/subdural (8.2%), subdural (12.3%), epidural (0.9%), and unexplained intracranial hemorrhage (10.5%). Enlarged SAS was positively associated with subarachnoid/subdural hemorrhage, there was no association between enlarged SASs and either SDH or epidural hemorrhage. A larger SAS was positively associated with larger HC percentile; however, HC percentile was not independently associated with ICH.

CONCLUSIONS Enlarged SAS was not associated with SDH, but was associated with other ICHs. The authors' findings do not support the theory that BEH predisposes children to SDH with minor accidental trauma.

<https://doi.org/10.1177/0885066616263168>

Fingerson, A. K., et al. (2016). "Enlarged subarachnoid spaces and intracranial hemorrhage in children with accidental head trauma." *J Neurosurg Pediatr*: 1-5.



Pediatrics

Macrocephaly in infancy: benign enlargement of the subarachnoid spaces and subdural collections

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OBJECTIVE Benign enlargement of the subarachnoid spaces (BESS) is a common finding on imaging studies indicated by macrocephaly in infancy. This finding has been associated with the presence of subdural fluid collections that are sometimes considered an indicator of abusive head injury. The prevalence of BESS among infants with macrocephaly and the prevalence of subdural collections among infants with BESS are both poorly defined. The goal of this study was to determine the relative frequency of BESS, hydrocephalus, and subdural collections in large retrospective series of imaging studies performed for macrocephaly and to determine the prevalence of subdural fluid collections among patients with BESS.

METHODS A text search of radiology institutions identified studies performed for macrocephaly in patients < 2 years of age. Studies of patients with hydrocephalus or stroke were excluded. Studies that demonstrated hydrocephalus or chronic subdural hematomas not previously recognized but responsible for macrocephaly were noted but not investigated further. The remaining studies were reviewed for the presence of incident subdural fluid collections and for measurement of the depth of the subarachnoid space. A 3-point scale was used to grade BESS. Grade 0 = 1 mm, Grade 1 = 3–8 mm, and Grade 2 = > 8 mm.

RESULTS After exclusions, there were 338 studies, including 1 case of hydrocephalus (0.3%) and 1 large, bilateral chronic subdural hematoma (0.3%). There were incident subdural collections in 23 cases (6.8%). The number among the studies was 40.2% subdural Grade 1 BESS, and 41 studies (12.1%) without Grade 2 BESS. The prevalence of incident subdural collections among infants with BESS was 10 of 211 (4.8%). The presence of BESS was associated with a greater prevalence of subdural collections, and higher grades of BESS were associated with increasing prevalence of subdural collections. After controlling for imaging modality, the odds ratio of the association of BESS with subdural collections was 3.08 (95% CI 1.52–6.27, p = 0.0016). There was no association of sex, age, or insurance status with subdural collections. Patients with BESS had larger mean circumferences of heads, but there was no association of head circumference or age with subdural collections. Interobserver reliability in the diagnosis and grading of BESS was only fair.

CONCLUSIONS The current study confirms the association of BESS with incident subdural collections and suggests that greater depth of the subarachnoid space is associated with increased prevalence of such collections. These observations support the theory that infants with BESS have a predisposition to subdural collections on an anatomical basis. Incident subdural collections in the setting of BESS are not necessarily indicative of abusive head injury.

<https://doi.org/10.1177/0885066616263168>

Tucker, J., et al. (2016). "Macrocephaly in infancy: benign enlargement of the subarachnoid spaces and subdural collections." *J Neurosurg Pediatr*: (18): 16-20



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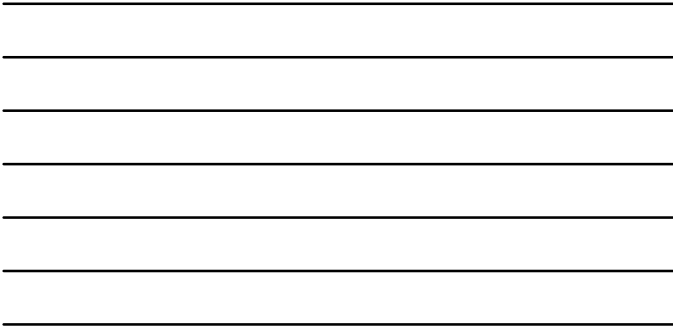
J Neurosurg Pediatrics 11:438-444, 2013
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Subdural hemorrhage in pediatric patients with enlargement of the subarachnoid spaces

Clinical article

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Brief Report

Accuracy of the history of injury obtained from the caregiver in infantile head trauma^{☆,†,☆,★,★}

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Takashi Moriya, MD, PhD,[†] Kosaku Kinoshita, MD, PhD,[†]

ABSTRACT

Objective: We investigated the accuracy of parental reports of infant trauma history.

Methods: We retrospectively reviewed 100 infants from 3 tertiary institutions in Japan that had suffered a traumatic intracranial hemorrhage between 2002 and 2013. The infants were classified into 3 groups based on the parents' report of the mechanism of injury: the low-risk group consisted of injuries sustained from falling of a height below 2 ft (n = 45), the middle-to-high risk group comprised other mechanisms of injury (n = 54), and the unknown-risk group consisted of unknown mechanisms of injury (n = 28). The severity, neurological outcomes, clinical features, and evaluation for abuse were compared among these 3 groups.

Results: Infants in the low risk group had a higher severity, a worse neurological outcome, and a higher percentage of hospital-acquired injuries, retinal hemorrhage, subdural hematomas, and subdural hematomas suggestive of abusive head trauma (AHT) than those in the middle-to-high risk group (P < .05). Infants in the unknown-risk group had the highest severity and the worst neurological outcomes, and a higher rate of features suggestive of AHT (P < .001).

Conclusions: The accuracy of the history obtained from the caregivers of infants may be low in severe infantile head trauma. Therefore, medical professionals should treat the mechanism of injury obtained from caregivers as secondary information and investigate for possible AHT in cases with inconsistencies between the history that was taken and the severity of the injury observed.

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Shameless Plug

Demystifying the Medical Literature

Christopher Greeley

ABSTRACT

The published literature is not just the ongoing record of current medical and scientific knowledge; it is a record of the past and can give an eye toward future knowledge. Reading the published literature can give a view of the evolution of knowledge on a particular question, the growth of a discipline, the identification of new diseases, and the refinement of diagnostic tests. The reality is that most busy physicians read only the abstract of an article. The purpose of this article is to place published medical literature into a context and to provide some considerations for critically evaluating articles. This paper will provide historic background of evidence-based medicine and medical publications. Specific strategies for critical literature appraisal are highlights and pitfalls to avoid are outlined. *Acad Forensic Pathol*. 2016 6(4): 556-567

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☆: Project conception and/or design, data acquisition, analysis and/or interpretation, manuscript creation and/or revision, approval for submission for publication, accountable for all aspects of the work, principal investigator of the current study.

Greeley, C. (2016). "Demystifying the Medical Literature." *Acad For Path* 6(4): 556-567.

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