



Case review

Mimics of child abuse: Can choking explain abusive head trauma?



George A. Edwards*

Dell Children's Medical Center, Department of Pediatrics, UT, Austin, Dell Medical School, 4900 Mueller Blvd, Austin, TX 78723, USA

ARTICLE INFO

Article history:

Received 9 December 2014

Received in revised form

29 April 2015

Accepted 13 June 2015

Available online 3 July 2015

Keywords:

Abusive head trauma

Choking

Misinformation

Child abuse

ABSTRACT

Choking is one of the alternative explanations of abusive head trauma in children that have been offered in courtroom testimony and in the media. Most of these explanations — including choking — are not scientifically supported.

This article highlights four points. (1) The origins of choking as an explanation for intracranial and retinal hemorrhages are speculative. (2) Choking has been used in high profile court testimony as an explanation for the death of a child thought to have been abused. (3) A case report that proposes choking as an alternative explanation for the death of a child diagnosed with abusive head trauma includes omissions and misrepresentations of facts. (4) There was a decision by the editor of the journal that published the case report that it was not necessary to include all the facts of the case; moreover, the editor indicated that facts are not required when presenting an alternative explanation.

The use of scientifically unsupported alternative explanations for abusive head trauma based on inaccurate and biased information constitutes further victimization of the abused child and represents a travesty of justice.

© 2015 Elsevier Ltd and Faculty of Forensic and Legal Medicine. All rights reserved.

1. Introduction

Although there is consensus in the medical child abuse community around the scientific basis of diagnosing child abuse and abusive head trauma, controversies persist in the courtroom and beyond.^{1,2} These controversies are related at least in part to the adversarial nature of the legal system, but they have been magnified by scientifically unsupported assertions offered to explain inflicted injuries.³ Courts rely on physicians' testimony to reach legal decisions. Misleading testimony about unsupported hypotheses generates misunderstanding in the courtroom and obscures the public's understanding of accepted scientific findings.

Some physicians have put forward alternative explanations for findings of abusive head trauma that are said to mimic child abuse. These include choking,⁴ dysphagia,⁵ vomiting,⁶ rebleeding of pre-existing subdurals from birth,⁷ vaccinations,⁸ venous thrombosis,⁹ and others. While there are legitimate alternative explanations for some of the findings of abusive head trauma, many alternative explanations, including choking, are speculative and not scientifically supported.

Choking is an important cause of morbidity and mortality in young children. Injury and death from choking result primarily from food, coins, and toys.¹⁰ Aspiration of food or a foreign body can result in airway obstruction. Children with neuromuscular disorders or anatomic abnormalities of the airway may be at greater risk of aspiration. When food causes choking and asphyxiation, the types of food include hot dogs, candy, nuts, and grapes.¹¹ Evidence that milk or formula causes choking with asphyxia or sudden death in previously normal children is lacking. The concept that choking in children results in subdural hemorrhage, extensive retinal bleeding, brain injury, and even death is not based on scientific evidence.

This article highlights four points: 1) how the origins of choking as an explanation for abusive head trauma were speculative; 2) how choking has been used in a high profile, controversial case as a courtroom argument to try to explain abusive head trauma; 3) how a published case report that supports the choking argument contains both omissions and misrepresentations of fact; and 4) how an editorial decision allowed the publication of inaccuracies.

2. The origins of choking to explain abusive injuries

Some authors have speculated that increased vascular pressure from coughing and/or choking might explain subdural and retinal hemorrhages. Talbert hypothesized that "paroxysmal cough injury"

* Tel.: +1 512 324 0165.

E-mail address: geoa.edwards@gmail.com.

could result in excessive intraluminal pressure causing vascular rupture and that rupture of vessels in the head might result in subdural and retinal hemorrhages.¹² Subsequently, Geddes and Talbert used computer modeling to suggest that paroxysmal coughing could account for retinal and subdural bleeding as a result of very high intraluminal pressures that damaged veins. It was pointed out that a history of vomiting, coughing, or choking was not uncommon in otherwise normal infants who had subdural and retinal hemorrhage.¹³ Citing a case report of a child fatality where the father was convicted of manslaughter, Talbert went on to suggest that dysphagia could be related to subdural hemorrhage, retinal hemorrhage, and death through high intracranial vascular pressures transmitted from intrathoracic pressure.⁵ Talbert coined the term "Dysphagic Infant Death Syndrome" which he indicated was "consistent with intracranial venous hypertension resulting from feed aspiration, such as violent coughing, or high intrathoracic pressures necessary in attempted cardio-pulmonary resuscitation following apnea."¹⁴ He has also suggested that elevated intra-abdominal pressure from the vomiting of pyloric stenosis may cause subdural hemorrhage.¹⁵

Despite these speculative articles, autopsy studies in both children and adults who died after choking on food have revealed no evidence of an association between choking and intracranial bleeding.^{11,16–19} Valsalva retinopathy has been described in adults and adolescents secondary to rapid rise in intra-abdominal and intrathoracic pressure from coughing, vomiting, and weight lifting, but it has not been described in infants. Forceful vomiting in infants from pyloric stenosis does not result in retinal hemorrhages.²⁰ Severe persistent cough in infants has not been associated with retinal hemorrhages.²¹ Similarly evidence is lacking that pertussis infection results in retinal hemorrhages.²²

3. Choking used to explain a high profile death

Arguments that coughing or choking could raise venous pressure sufficiently to cause subdural bleeding, subarachnoid bleeding, and even death emerged in testimony in a high profile legal proceeding in 2008. In 1996, Audrey Edmunds was convicted of first-degree reckless homicide for the death of seven month-old Natalie Beard. The child died in Edmunds' care and was found to have cerebral edema, subdural hemorrhage, subarachnoid hemorrhage, and retinal hemorrhages with retinoschisis. Edmunds petitioned unsuccessfully for a new trial, and in 2008 her attorneys appealed the previous denial of a new trial. During the appeals process, several physicians testified as expert witnesses in support of Edmunds' motion. Three of those witnesses testified that choking might have caused Natalie Beard's death.²³

Patrick D. Barnes testified that there was a differential diagnosis of possible alternative explanations to explain the child's death that included choking. He testified that coughing or vomiting might cause a re-bleed of an old subdural hematoma. When he was asked whether pressure, such as coughing or vomiting, could cause a re-bleed, he testified, "Pressure transmitted with regard – through the veins, like high blood pressure within the veins from the chest certainly can be transmitted there and be associated with choking, vomiting, respiratory problems, yes." He was then asked, "So choking itself could cause a re-bleed of an old hematoma?" Barnes replied, "Yes. We see it in other conditions in children ... children with cardiac problems who have these elevated venous pressures transmitted from the veins around the heart to the brain, and they can bleed and even clot those veins."²³ Barnes also testified that aspiration from a choking episode or an "acute life threatening event" may have been a factor in Natalie Beard's death.

John G. Galaznik also testified that choking might have caused Natalie Beard's death. He stated that "micro-aspirations of formula

or liquids can set up laryngospasm and bronchospasm and that aspiration in that situation can result in sudden death."²³ To support this testimony, Galaznik referred to a brief review article.²⁴ Although that article indicates that microaspiration can cause laryngospasm and bronchospasm and that aspiration can be silent with subtle symptoms, it does not support the notion that microaspiration can result in unexpected death with intracranial and retinal hemorrhage. Nothing in the reference provides evidence that aspiration results in elevated intracranial venous pressure that causes cerebral edema, subdural hemorrhages, subarachnoid hemorrhages, retinal hemorrhages or unexpected death.

Horace B. Gardner also mentioned choking in his testimony. He stated, "She coughed and choked. She bled in her head."²³

The court eventually ruled to allow Edmunds a new trial. Although it is not known how the court weighed the specific testimony about choking, a speculative, scientifically unsupported concept had been presented in the courtroom to explain the findings of abusive head trauma.

4. Omission and misrepresentation to support choking

The same physicians (Barnes, Galaznik, and Gardner) who offered testimony that choking could result in the findings of abusive head trauma in the Edmunds appeal were co-authors of a case report⁴ that supported choking as an alternative explanation to abusive head trauma. Although the authors did not disclose their source of information or their role as expert witnesses for the defense in the criminal trial that arose from the child's death, there is unequivocal evidence that the report was based on the Zavion Thomas, Jr. case from Austin, Texas. Both the child in the case report and the patient in Austin died at four months of age. When admitted to the hospital, both had identical initial laboratory data (Fig. 1). Identical images to those included in the case report can be found in the imaging findings of the child from Austin, as illustrated in Fig. 2. Additionally the first author of the case report (Barnes) provided sworn testimony during a criminal trial in 2011 in Washington State regarding the source of the case report.²⁵ The following exchange between the prosecutor and Dr. Barnes occurred then:

- Q. ...you and three other doctors have written the only single case report about dysphagic choking; is that right?
A. I think that may be correct in terms of imaging findings.
Q. Okay. Now, was that a child you actually saw at Stanford?
A. No, that was a child abuse case from the State of Texas.
Q. And you and the other three doctors in that case were hired by the defense; is that right?
A. That is correct.
Q. Did you say that anywhere in your article?
A. No...

Clearly the case report was based on the child who died in Austin, Texas. Nevertheless, the report contained omissions and misrepresentations of the facts of the case.

Initial Laboratory Studies

	CASE FROM AUSTIN	BARNES ET AL CASE REPORT
pH	6.726	6.726
Pro time	49.3	49.3
PTT	198.4	198.4
Fibrinogen	<20	<20

Fig. 1. Identical initial laboratory results: Austin, TX case vs. Barnes et al. case report.

Download English Version:

<https://daneshyari.com/en/article/101777>

Download Persian Version:

<https://daneshyari.com/article/101777>

[Daneshyari.com](https://daneshyari.com)