

Valuing Shoulder Dystocia Cases



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Where We've Been

Recently, on our list serve there have been some exchanges about the settlement value of brachial plexus injury cases, and what factors affect that value. It got me to thinking about where we've been on our cases and where we're heading. Birth injury litigation has certainly evolved over the past couple of decades. Technology advanced, terminology changed -- and ACOG¹ definitions and guidelines are continuously moving targets. Likewise, the cadre of defense expert witnesses have become so familiar, we can generally predict who we'll likely encounter on any given case, shoulder dystocia, HIE, or otherwise.

Thirty years ago, shoulder dystocia cases presented less challenges than they do today, in terms of case value. There were considerably fewer brachial plexus centers in existence, and

substantially fewer treatment options available. Early on, traditional pediatricians and pediatric neurologists saw the new surgical advancements as controversial. Often families would not learn about specialists who could reconstruct a child's brachial plexus until well after the window of opportunity had closed. By the time parents sought legal counsel, the child's disability and deformity were only likely to get worse, not better.

Today is a different story. Because of nerve grafting, nerve transferring, secondary tendon and muscle transferring, botulinum toxin injections, serial casting and other therapeutic advancements, continued (and often remarkable) recovery can occur while litigation is actively underway. Improved functional and cosmetic outcomes are great for the children and their families, but not so much for settlement value or jury appeal.

¹ In 2005, the American College/Congress of Obstetricians and Gynecologist expanded its reach from a predominantly teaching organization to a political lobby. At the same time, its "educational" and

"peer reviewed" publications took on a decidedly defense-oriented slant, and became familiar fixtures in shoulder dystocia lawsuits.

The "New" Defenses

Medical and surgical advancements were not the only factors impacting a shoulder dystocia case's success. In 2000, Bernie Gonik and Michelle Grimm authored the first of a series of publications, which effectively ushered in a new era of shoulder dystocia defense – the maternal forces of labor, which, at least preliminarily, they

proposed using a mathematic model.² Over the time, Gonik and Grimm expanded their causation theory, using computer models and arbitrary assumptions based not on human mothers and babies, but rather crash test dummies, rats, rabbits and baby goats. Along the way, according to Grimm's sworn testimony, they discarded the initial math from the 2000 paper, and acknowledged that they had substantially overestimated maternal forces.³ Grimm freely

² Gonik B, Walker A, Grimm M. Mathematic modeling of forces associated with shoulder dystocia: a comparison of endogenous and exogenous sources. *Am J Obstet Gynecol* 2000; 182: 689-91.

³ Excerpts from Michelle Grimm's trial direct and cross examination on January 29, 2018 are as follows:

(Michelle Grimm on direct exam regarding the flawed 2000 article)

Q So, in your opinion, was it a reasonable and fair article at the time it was published?

A Yes.

Q But now that you've learned more over the years, why don't you just yank it?

A Because that's not the way science works. You don't -- as a scientist, you learn to take all -- what's written in context and look at progression of knowledge. So we don't pull out things when we learn more. It would make for fewer articles that we'd have to review, but we would miss a lot of that information and that progression of the knowledge in the field. So there's no reason to pull it. It talks about what the limitations are within the article, and so scientists are able to review it within that context and as part of what we know now in comparison as our knowledge has increased.

(Michelle Grimm on cross exam)

Q So in 2000, you published this article and you made certain assumptions about, number one, the amount of uterine forces applied, correct?

A We calculated -- we estimated a uterine force for this, yes.

Q You estimated the uterine force, you, yourself, personally, correct?

A Well, Dr. Gonik, Alberta Walker and myself all worked together and came up with an estimate based on overall geometry.

Q All right. So the truth of the matter is that you overestimated the force generated by a uterus and by pushing?

A Based on what we now know from our current model, yes, the estimates we used in this paper were overestimates.

Q All right. Can you go to 2003, please. The next paper that you wrote on this topic was in 2003 and it's called defining forces that are associated with shoulder dystocia, the use of a mathematic dynamic

computer model. So you included computer models in this article, correct?

A Correct. The first one was just a simple mathematical equation estimate. This was a three-dimensional computer model, which was more realistic.

Q The first one was just pure math, and we know that the math was wrong. There was a math error in that article?

A No, the math was not wrong. We made some estimates and assumptions, but the math itself was not wrong. So --

Q The underlying assumption was wrong?

A We have determined that the underlying assumption did overestimate the uterine force.

Q Sure. The jury has been -- we've been talking with the jury about brutal honesty. Let's be brutally honest. If a scientist wants to retract an inaccurate publication, there are mechanisms through publications by which a scientist can do that, correct?

A There are.

Q You're not here to say that no scientist ever retracts an unfair, inaccurate or untrue article. That is simply not true. Scientists do it all the time, right?

A I wouldn't say all the time. Scientists do retract articles if there are either errors in the results. So if you find out that you screwed up in what you're presenting as the results or if there are underlying errors in the methodology so that -- then, yes, it is possible to either publish an erratum. So you publish an additional thing, saying, "Oops, we calculated this wrong. Here's the correction," or you can withdraw an article.

Q And even though the basic premise of the 2000 article was wrong, you overestimated the maternal forces, you have not done an erratum and you have not sought to withdraw the article, true?

A Well, the basic premise of --

Q Can you please answer my question, ma'am?

A I cannot answer it the way you asked.

admits that the 2000 mathematic model paper has not been withdrawn, and the journal has never published a follow-up acknowledgement of its flaws.

Notwithstanding, Gonik and Grimm were embraced full-throatedly by ACOG and ACOG's ubiquitous line-up of defense experts, who were willing to raise their hands and swear that normal maternal contractions and pushing efforts were more likely to harm a baby than the physician or midwife whose training allowed traction during a shoulder dystocia as long as you were sure to call it "gentle." Cases once considered, for all practical purposes, indefensible, became vociferously supported by defendant OBs and midwives, their lawyers, expert witnesses, and insurance carriers, based upon an alternative universe where healthy mothers harmed healthy babies before a provider ever laid hands on either of them.

Not long after the maternal forces achieved common parlance in shoulder dystocia defense, ACOG took it up a notch, formulating an ACOG "task force," comprised largely of the same expert witnesses who regularly appeared in shoulder dystocia cases, and who could defend everything from a mild stretch injury to plexus ruptures and avulsions. In 2014, the ACOG task force issued a publication called *Neonatal Brachial Plexus Palsy*, which was purported to be a comprehensive report summarizing the scientific literature. However, while the 2014 publication did reference a variety of previous review articles and studies, it was by no means comprehensive or balanced. Grimm's work with Gonik not only earned her a seat on the task force, but also the pivotal role of authoring the publication's chapter on causation, where she

unblinkingly cited herself, and dedicated a large portion of the causation chapter to her non-human models and suppositions. Her causation theories do not distinguish between injuries that are temporary versus permanent, in anterior versus posterior shoulders, are mild stretches versus frank avulsions, or affecting one or two nerve roots versus global plexopathy.

Two other more recent defenses also bear noting, because they affect case value if present in a particular case: low tone and biologic variance.

Low tone relates to Apgar scoring, the five-parameter, ten-point newborn assessment done at one and five minutes of life, and for up to twenty minutes in babies whose total score is less than seven. The five assessed parameters are heart rate, respiration, color, reflexes and tone. A score of two for a particular parameter denotes that it is present and normal, a score of zero denotes its absence, and a score of one denotes its presence, albeit abnormal. The "low tone" defense stands for the proposition that, due to intrapartum fetal compromise, a baby with poor tone lacks the muscle resistance to withstand the rigors of vaginal birth, and thus sustains a brachial plexus injury from a routine shoulder dystocia, "gentle" traction, or both. A low one-minute Apgar score following a shoulder dystocia is not uncommon, so this defense appears frequently. It bears noting that this is not a generally accepted theory, and in fact some authors argue the opposite proposition, i.e., that "[b]y decreasing fetal resistance to the subsequent clinician-applied traction forces, reduced fetal muscle tone may also protect against a more severe injury occurring in this circumstance."⁴

Matthew Harrison, vs Horizon Women's Healthcare, LLC, et al, Montgomery County (Ohio) Court of Common Pleas Case No. 2016 CV 06114

⁴ Gurewitsch ED "Risk factors for brachial plexus injury with and without shoulder dystocia," *Am J Obstet Gynecol* 2006 Feb;194(2):486-92

Biologic variance can appear as a general defense or specific to the facts of the case. When applied as a general defense, some defense experts proffer what I refer to as the lottery ticket defense. These defense experts opine that since the defendant denied using anything other than gentle traction, it must be this unlucky baby's fault. In other words, most babies will withstand labor and delivery fairly well, but *all babies are different*, and since some are more biologically robust than others, this particular baby must be on the biological weaker end of the spectrum, and thus more vulnerable to normal forces by the mother and the defendant. No scientific evidence, just the luck of the draw.

Alternatively, the specific facts of a case may give rise to a biologic variance defense where the injured baby indeed has some documented anatomic or genetic anomaly. Think of a differential diagnosis -- a process of exclusion, identifying all the potential causes of a medical condition, and methodically ruling out each cause, based upon a patient's history and physical examination.

Causation experts on behalf of plaintiffs often testify regarding their differential diagnosis of the baby's injury, excluding all other potential causes, leaving traction as the most probable cause. Maternal sources are included on the list of potential causes, and include uterine malformations or fibroids resulting in fetal malpositioning. Fetal sources include abnormal or missing anatomic structures. These cases are rare, but they do exist, and I have declined to pursue brachial plexus injury cases where a review of the newborn records reveals testing positive for co-morbid structural or genetic anomalies.

Global Plexopathies and Avulsions Currently Drive Case Value

So, despite the morass of infiltrated defense-biased, "peer-reviewed" literature, what drives case value? The answer is the same as in all our cases -- the severity of the injury. In the universe of shoulder dystocia and brachial plexus injury litigation, global or pan plexopathies (injuries to all five nerve roots), and/or avulsions (injuries where the nerve root is pulled out of the spinal cord) are the most difficult cases to defend on standard of care and causation, and have the highest value because of the powerful liability and damages evidence they present..

Advancements in medical technology and surgical technique have made proving damages in our severe BPI cases easier than in years past. Now, EMG testing and MRI imaging provide *objective evidence* of the number of injured nerve roots and the presence of severe avulsion injuries. Similarly, most primary repair operative reports provide detailed anatomic descriptions of traumatic nerve root ruptures, neuromas, avulsions, and traumatic scarring of surrounding muscles and vasculature. At some centers, the treating pediatric reconstructive surgeons' (I love these doctors) operative reports include hand-drawn illustrations of what the surgeons saw in their surgical field (Figure 1).

Global injuries increase case value for several reasons. First, injury to the entire brachial plexus is better evidence of excessive traction than a one- or two-nerve injury. Global injuries are also more likely to include avulsions due to the brachial plexus's natural physiologic response to extreme traction or angulation (Figure 2). As the illustration shows, rupture of the upper trunk nerve roots typically occurs first, and with extreme traction, avulsion of the mid

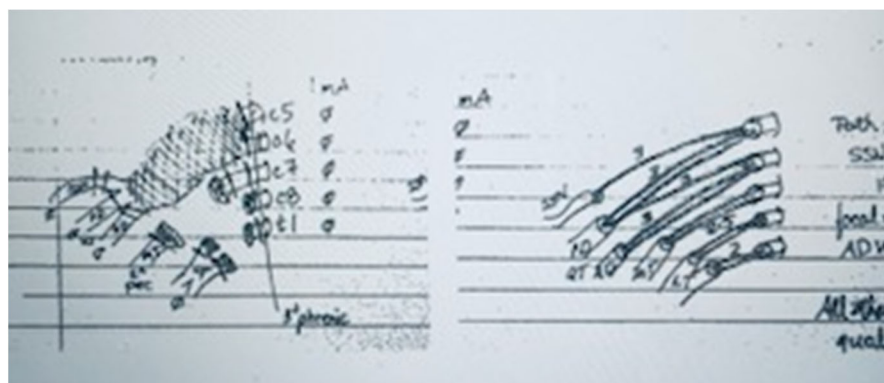


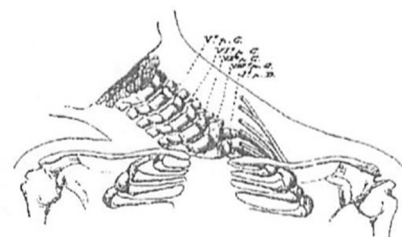
Figure 1

and lower trunk nerve roots follows.⁵ Thus, pan plexus injuries and multi-level avulsions are strong evidence of substandard management of a shoulder dystocia that caused severe and permanent injuries.

Global brachial plexus injuries increase case value because they have the worst prognosis for spontaneous recovery.⁶ Research has shown that as patients with global plexopathies age, they have quadruple the limb length discrepancy (thus, the visible physical disfigurement), compared to patients with injuries confined to the upper trunk.⁷ These types of injuries require more surgeries, more extensive physical and occupational therapy, and increasingly expansive life care plans. This evidence of heightened permanent disability is critical in states like Ohio where noneconomic damages are capped, and economic damages are not.

Stubbornly limited treatment options set avulsions apart from other types of brachial

plexus injuries. Avulsions cannot be repaired surgically. There are sophisticated nerve grafting and transferring techniques that allow surgeons to create alternate neural pathways in the upper and middle trunks, but for the most part, the presence of any avulsion at any level bodes poor functional and cosmetic prognoses, which are permanent and resistant to any type of therapeutic intervention. While medical advancements over the past three decades have markedly changed the prognosis for partially or completely ruptured nerve roots, that technology has not yet reached avulsed nerve roots. Not only do children with avulsions see no improvement in their functionality, they also develop non-use orthopedic consequences over time.



Pattern of traction-induced brachial plexus injury with increasing lateral deviation of the head from the contralateral shoulder. Described in the late 19th century,¹⁶ forcible lateral deviation of the head produces a consistent pattern of injury to the brachial plexus: nerve roots C5 and C6 are injured before damage to C7 occurs. Lower root injuries occur as total plexopathies (C5 through C8/T1).

Figure 2

⁵ Allen RH On the mechanical aspects of shoulder dystocia and birth injury. *Clin Obstet Gynecol.* 2007 Sep;50(3):607-23.

⁶ Kozin SH Life care planning for the child with a brachial plexus injury. Riddick-Grisham S, Derring LM (eds). *Pediatric Life Care Planning and*

Care Planning and Case Management, CRC Press, Taylor and Francis Group, Boca Raton, Florida, 2011, pp 517-538.

⁷ McDaid PJ. Upper extremity limb-length discrepancy in brachial plexus palsy. *J Pediatr Orthop* 2002; 22:364-366.

Finally, global plexopathies and avulsions often result in complete loss of hand function, one of the most consequential damages in shoulder dystocia litigation, second only to an associated permanent brain injury. In its most severe form, i.e., avulsions of C8 and T1, sensation and function are equally affected. Some children have neuropathic pain or sensation, causing them to self-mutilate their affected hand, resulting in open wounds and infections. With a loss of sensation, children experience traumatic injuries due to inadvertent burns or closing their affected hand in doors.

Patients with loss of hand function are limited to one functioning upper extremity. The affected hand is either ignored or used only as a helper to the unaffected hand. Defense experts do not dispute the catastrophic impact of the loss of a functioning hand. Until very recently, a popular defense vocational expert's report routinely included a citation to *"One-Handed in a Two-Handed World,"* a cheerful self-help book by Karen Mayer (Publisher Prince Gallison Press, Boston, MA), in which Mayer, herself one-handed, offers insight to the multitude of daily challenges to one-handed people, including how to eat a steak in a restaurant without the demoralizing need for meat-cutting assistance.

Defense lawyers contend there is no vocational injury to a child who has the intellectual capacity to go to college, and then find sedentary employment. In a world of cell phones, tablets and laptops, the loss of a hand represents a loss of academic and vocational competitiveness. Thus, the most significant damage impact of one-handedness is keyboarding. While it is true that today's children learn to navigate electronic devices in infancy, one-handed navigation is a significant disability.

Conclusion

Just as no two babies are alike, the same is true for the birth injury cases we pursue. No outcome is guaranteed. Case value varies from state to state, and jurisdiction to jurisdiction. And there are expert witnesses who continue to defend egregious negligence that catastrophically injures children. But some facts speak for themselves. Lawyers in our community, through hard work and diligence, have persistently succeeded in excluding the maternal forces defense and its proponents. We commend all our colleagues for fighting the hard fight.

About the Author

Pamela Pantages has more than 31 years of experience as a trial attorney. Having earned a master's degree in speech pathology/audiology, she successfully pursued a medical career before going to law school. Her current law practice includes all areas of medical negligence, but with particular expertise in obstetric and pediatric malpractice.

Board Certified as a Civil Trial Specialist by the National Board of Trial Advocacy, Pamela is also an invited member of the distinguished Melvin M. Belli Society, the International Society of Barristers (ISOB), and the International Association of Trial Lawyers (IATL). Pamela has been recognized by her peers as an Ohio Super Lawyer from 2009-2011 and 2013-Present. She is rated AV® Preeminent™, Martindale-Hubbell's highest rating, and Avvo rated 10/10 (Superb). Pamela is also a member of the Million Dollar Advocates Forum, which recognizes lawyers with settlements and verdicts whose individual amounts exceed \$1,000,000.00.

A sought-after speaker on birth injury litigation for the American Association for Justice at the national level and for the Ohio Association for Justice, the Montana Trial Lawyers Association, the North Dakota Association for Justice, and the Consumer Attorneys Association of Los Angeles, among other organizations, Pamela has also published on the topic, including chapters in *Legal Concepts & Best Practices in Obstetrics*, Warsow SL, ed., Wolter Kluwer, Philadelphia 2019, and article co-authored with Leslie Iffy, MD, titled *Erb's Palsy After Delivery by Cesarean Section* in *Medicine and Law*, 2005 Dec; 24(4):655-61.

Throughout her career, she has advocated for children and their families in Ohio, Pennsylvania, West Virginia, Illinois, Virginia, Delaware, Alabama, Montana, Tennessee and Georgia.