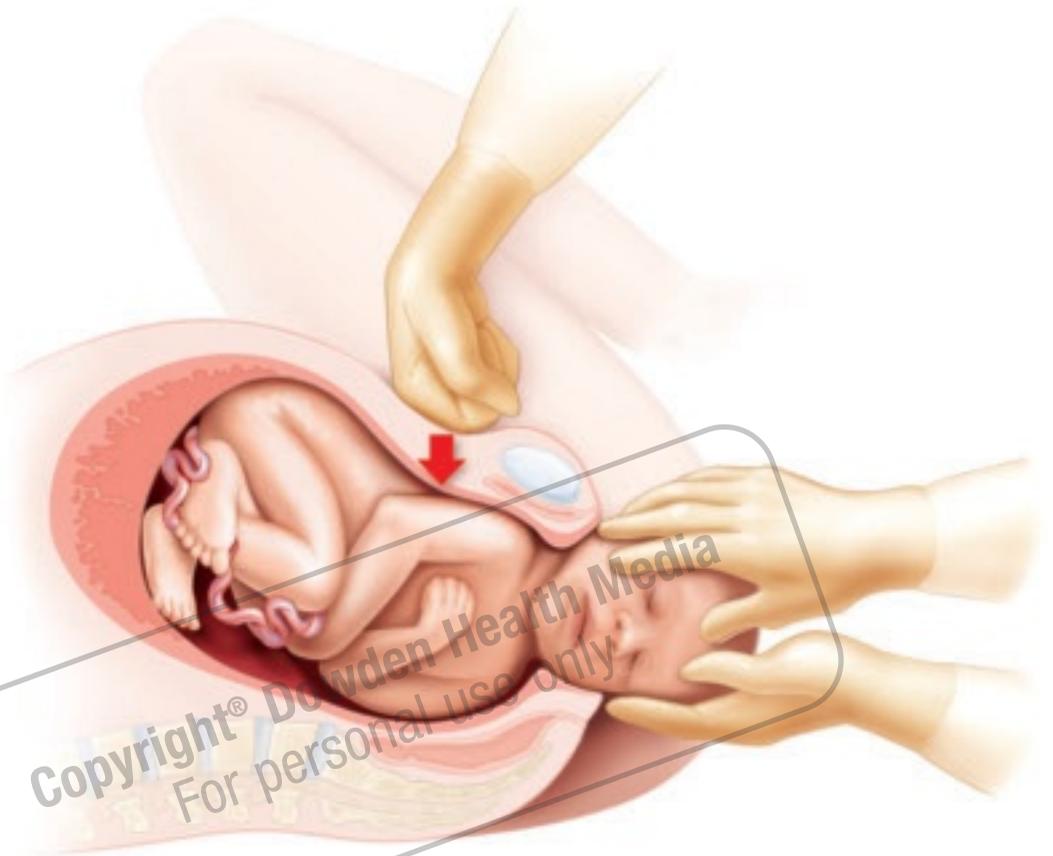


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Labor and delivery nurses should know when and how to perform the McRoberts maneuver and apply suprapubic pressure. These measures often resolve the dystocia by flattening the sacrum and altering the angle between the pubic bone and the baby's anterior shoulder. Family members can assist, contrary to plaintiff attorneys' contentions.

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Shoulder dystocia: What is the legal standard of care?

It's your job to educate the jury that, even in the best of hands, permanent brachial plexus injuries can occur

No matter how excellent the care you provide, you have good reason to worry about shoulder dystocia. It is one of the most difficult and frightening complications, and is essentially unpredictable and unpreventable. It can happen even in apparently routine deliveries, and can cause permanent injury to the child despite the best possible care by experienced obstetricians.

If permanent injury occurs after shoulder dystocia, it can also trigger a lawsuit that can last for years and end in a large jury verdict—even if you handled the case with

textbook perfection. Lawsuits involving brachial plexus injuries following shoulder dystocia are now the second most common type of lawsuit in obstetrics, exceeded only by those due to neurologic damage from birth asphyxia.¹ Brachial plexus injury is often difficult to defend in court and results in scores of millions of dollars in damages each year. The plaintiff is usually a lovely child with an obvious and permanent injury, and the defense is typically an undocumented claim that the obstetrician applied no undue force at delivery.

IMAGE: RICH LARROCCO

Given the difficulties of knowing when shoulder dystocia will occur, how best to resolve it, and whether a claim is likely, how can we prepare for this event? What is the accepted standard of care? This article answers these questions by surveying the evidence on these aspects of management:

- risk factors for shoulder dystocia
- how to choose mode of delivery
- specific labor-management practices
- the 4 most widely used maneuvers to resolve shoulder dystocia
- what information the documentation should include.

No single “standard of care”

In many states, the term “standard of care” has a specific legal meaning, but in most of the United States—and to most physicians—the term means care that would be rendered by the majority of well-trained individuals. Complicating this definition is the fact that medicine often offers no single “right way.” Thus, it may be more appropriate to speak of “standards of care”: the range of therapeutic choices a reasonable practitioner might decide to use.

Why dystocia cannot be predicted

...despite known risk factors

The risk of shoulder dystocia is higher in women with diabetes,²⁻⁵ a macrosomic fetus,^{2,6-8} obesity,^{5,8} or a previous shoulder dystocia.⁹⁻¹¹ The problem: The predictive value of these factors is so low and their false-positive rate so high they cannot be used reliably in clinical decision-making.¹¹⁻¹³

Prevention is impossible

Even if prediction were possible, the only preventive option is elective cesarean section. After all, this is the only intervention that might potentially avoid the infrequent but dreaded outcomes of asphyxia and permanent brachial plexus injury. But as the literature shows, even this is not an absolute guarantee.^{14,15} Moreover, the strategy of inducing labor several weeks prior

TABLE

How fetal weight affects the rate of dystocia

ESTIMATED FETAL WEIGHT	RATE OF SHOULDER DYSTOCIA (%)	
	NONDIABETIC MOTHERS	DIABETIC MOTHERS
<4,000 g	1.1	3.7
4,000–4,499 g	10	23.1
>5,000 g	22.6	50

Source: Acker D et al⁶

to the due date to prevent a baby from becoming “too big” has been shown in many studies to be ineffective in lowering the shoulder dystocia rate.¹⁶⁻¹⁸

Risk factors are not clinically useful

The American College of Obstetricians and Gynecologists (ACOG) and *Williams Obstetrics* concur that risk factors for shoulder dystocia cannot be applied in a clinically useful way to prevent brachial plexus injury. As the ACOG practice bulletin on shoulder dystocia¹⁹ observes:

- “Shoulder dystocia cannot be predicted or prevented because accurate methods for identifying which fetuses will experience this complication do not exist.”
- “Elective induction of labor or elective cesarean delivery for all women suspected of carrying a fetus with macrosomia is not appropriate.”

Identify highest risk

Nevertheless, there are generally accepted guidelines for attempting to ascertain which patients are at the absolute highest risk for shoulder dystocia:

- **Any woman with gestational diabetes.** For any given week of gestation in the third trimester, the ratio of thorax and shoulder size to head volume is larger in babies of diabetic mothers.²⁰ Thus, in these women, it is important to estimate fetal weight near term to determine whether a trial of vaginal delivery makes sense.
- **If, for any reason, the fetus appears to be larger than average.** Indications of size may come from palpation of the maternal abdomen, fundal height measurements

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Women with gestational diabetes and/or a macrosomic fetus are at highest risk for shoulder dystocia

significantly greater than dates, ultrasound estimation of large fetal weight, or maternal perception. In these cases, ultrasound imaging is advisable near term to estimate fetal weight. This estimate can be factored into the selection of delivery mode.

How big is “too big”?

There are 2 problems with using estimates of fetal weight in determining mothers and babies at highest risk:

- How is “too big” defined?
- What action should one take if a baby is thought to be “too big”?

The rate of shoulder dystocia increases with the size of the fetus (**TABLE**). ACOG defines macrosomia in the context of shoulder dystocia as a fetal weight exceeding 5,000 g in a nondiabetic woman and 4,500 g in a diabetic woman.¹⁹

As for what to do if a fetus is estimated to be in this size range, ACOG states: “Planned cesarean delivery to prevent shoulder dystocia may be *considered* [emphasis added] for suspected fetal macrosomia within the above weight parameters.”¹⁹ The decision as to whether to recommend or perform a cesarean section in these circumstances is intentionally left up to the physician and the patient.

The problem, of course, is that all our data are from measurements of babies after delivery—information obstetricians do not have at the time they must decide on the mode of delivery.

■ Choosing a mode of delivery: Not so simple

The obstetrician must determine whether the risk of shoulder dystocia is high enough to outweigh the risks to a mother of elective cesarean section. This is far from simple. Although it is true that women at the highest risk for dystocia—those with gestational diabetes and suspected macrosomia—have a risk for shoulder dystocia somewhere between 25% and 50%, this is not the main concern.

The main concern is this: What per-

centage of even these high-risk patients will have a shoulder dystocia that results in a permanent brachial plexus injury? The answer: **Permanent injury is rare, even in highest-risk cases.**

Only 10% to 20% of infants born after shoulder dystocia suffer brachial plexus injuries.^{16,21-23} Of these, only 10% to 15% are permanently injured.^{5,24,25} Thus, even in women at highest risk, the odds of having an infant with permanent brachial plexus injury are roughly 1 in 450.¹⁴ In women at lower risk for shoulder dystocia, the odds of permanent brachial plexus injury are much lower: somewhere between 1 in 2,500 and 1 in 10,000.

When is cesarean section warranted?

In deciding the answer to this question, the obstetrician must consider that cesarean section is not without its own risks: excessive bleeding, infection, injury to bowel or bladder, deep venous thrombosis, and the need for hysterectomy.

These adverse events occur much more frequently than does permanent brachial plexus injury.²⁶ And the risks are higher yet for the very same patients at greatest risk for shoulder dystocia—diabetic and obese women.

Prevent “I didn’t know” accusations

This is the point at which the patient’s input becomes vital. It is important to convey to her in readily understandable terms the risks—to both her and her child—of cesarean section versus attempted vaginal delivery. Plaintiff attorneys often claim that, had their client known there was a 1 in 450 chance of her baby having a permanent injury, she would have opted for cesarean section. The truth of this claim is, of course, open to question. However, from a medicolegal perspective, it is extremely important that the woman be informed of the degree of risk to herself and her baby so that her decision is truly informed—even if it is not the choice the obstetrician would have made.

The consensus in surgery is that the

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Even in women at highest risk, the odds of having an infant with permanent brachial plexus injury are roughly 1 in 450

patient should be informed when the threshold of risk for an adverse event reaches 1% or higher. Although it is an informal teaching, this threshold is documented in the medical literature.²⁷

The option of cesarean section should be discussed and possibly recommended for all women whose infants are estimated to weigh more than 5,000 g in the absence of diabetes and 4,500 g or more in women with diabetes.

■ Labor management

Prolonged second stage and instrumental delivery

Although the literature is not clear on this point, there is a trend toward increased rates of shoulder dystocia with a prolonged second stage of labor^{2,3,28} and with instrumental deliveries.^{6,12,29,30} Most experts believe this trend merely reflects the fact that bigger babies—the known major risk factor for shoulder dystocia—encounter these sorts of labor problems more frequently than do smaller babies. Whatever the reason, it warrants attention. An obstetrician's care of any laboring woman should follow standard practices regarding arrest of labor and descent or a prolonged second stage.

Plaintiffs are quick to condemn vacuum and forceps

The same applies to intervention with forceps or vacuum. Only in women at highest risk for shoulder dystocia—those with diabetes or with suspected macrosomic fetuses—should standard management be modified.

Given the potential for shoulder dystocia in such high-risk circumstances, not to mention our inability to predict dystocia, prudence dictates that we avoid aggressive management and the use of forceps or vacuum in these cases.

These practices are often condemned in court by plaintiff lawyers and their expert witnesses.

Oxytocin is OK

In cases of arrest of labor and descent, the use of oxytocin is appropriate. A laboring woman should be given adequate time to deliver on her own, especially if a regional anesthetic has been used.

... but prepare to act quickly. In high-risk cases, be prepared to move more quickly than normal to cesarean section.

■ Is your team prepared? 4 standards of care

Although it is true that an obstetrician must be prepared for the possibility of shoulder dystocia in any delivery, to act as though it will occur in all deliveries is simply not reasonable, given that the rate of dystocia is 0.5% to 1.5%, or 1 in 67 to 200 deliveries.^{12,21,25,29}

Nevertheless, 4 specific standards apply to all delivery facilities:

1. The entire labor and delivery staff should know what to do and what each person's role is when shoulder dystocia is diagnosed.
2. Labor and delivery nurses should know how and when to initiate McRoberts maneuver and apply suprapubic pressure.
3. The team should immediately obtain the assistance of another obstetrician, a pediatrician, and an anesthesiologist, even though they are not likely to arrive before the dystocia is resolved.
4. The obstetrician should be mentally prepared for the possibility of shoulder dystocia. This requires the ability to quickly recognize it, familiarity with the various techniques for resolving it, and avoidance of unnecessary traction. It also is vital for the obstetrician to remain composed and in charge, as the obstetrician becomes the leader of the medical team when this emergency arises.

How to recognize shoulder dystocia

There are 2 ways to diagnose dystocia.

- **"Turtle sign."** The first is recognizing the

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Discuss and consider cesarean section for all women whose infants are estimated to weigh >5,000 g, or >4,500 g in women with diabetes

The traction reaction: Why plaintiffs focus on “force”

Traction is the most used and abused of terms in shoulder dystocia lawsuits. Many plaintiff expert witnesses claim that traction should never be applied to a baby’s head during delivery. Other “experts” claim only “gentle” traction is warranted. These statements are designed to support the most frequent contention against obstetricians when permanent brachial plexus injury occurs: As there is an injury, it must have been caused by a doctor or midwife who used “excessive traction” to deliver the baby. This statement is usually made without defining “excessive” and without evidence that more force than necessary was used.

“Excessive” vs “minimum necessary” traction

Routine or “moderate” traction is used in most deliveries. The birth attendant almost always depresses the fetal head and applies a moderate amount of traction to it to help the baby’s anterior shoulder slide beneath the mother’s pubic bone.³⁸ The only time traction is unnecessary is when the expulsive forces of the mother are so strong or uncontrolled that she pushes the baby out entirely on her own.

There is ambiguity—often contrived—about what exactly constitutes mild, moderate, routine, and “excessive” traction. No study has ever been published that accurately and unambiguously quantifies the amount of force used in actual deliveries.

Once shoulder dystocia is diagnosed, further attempts at routine traction without the use of other maneuvers should be avoided. At best these attempts are unavailing. At worst they serve only to keep the anterior shoulder lodged behind the maternal symphysis.

Much misinformation surrounds the role of traction during the McRoberts maneuver and other efforts

to resolve dystocia. The reality is simple: An obstetrician cannot determine whether a maneuver has released the anterior shoulder unless moderate traction is applied after the maneuver to see if the baby can be delivered. Although extreme force at this or any point is not appropriate, moderate traction is entirely appropriate.

“Excessive traction” is an oxymoron, although plaintiff lawyers often use the term. An obstetrician uses a given amount of force in attempting to free a stuck shoulder. Once the shoulder is freed, no more force is applied. Thus, by definition, “excessive force”—more force than is necessary to deliver the baby—is never used. The proper term to describe the amount of force applied by a physician to resolve shoulder dystocia is “minimum necessary traction.”

Injury can follow a traction-free delivery

For many years, obstetricians familiar with shoulder dystocia have claimed that brachial plexus injuries can occur even in the absence of significant traction—either in utero or as a result of the natural forces of labor. Yet plaintiff attorneys and expert witnesses have contended that all brachial plexus injuries are the result of someone pulling “too hard.”

A recent case reported by Allen and Gurewitsch³⁹ settled this question once and for all. They describe a delivery in which a patient requested no intervention of any kind. Despite no hand having touched the baby during delivery—thus, no “excessive traction” having been applied—the baby suffered a brachial plexus injury. This case proved that brachial plexus injuries can occur spontaneously and are not necessarily caused by traction.

pathognomonic “turtle sign,” in which, after delivery of the baby’s head, the head immediately retracts back up against the mother’s perineum, causing the baby’s cheeks to bulge.

- **The second diagnostic sign** is when, after delivery of the head, the moderate amount of traction usually used does not suffice to deliver the anterior shoulder.

Cease attempts at routine traction as soon as shoulder dystocia is diagnosed.

■ The 4 main maneuvers

The 4 maneuvers generally used by obstetricians to resolve shoulder dystocia are considered the standard of care:

- McRoberts maneuver
- Suprapubic pressure
- Woods screw maneuver
- Delivery of the posterior arm

Although the order in which the maneuvers are described below is the usual order in which they are performed, there is

no evidence that any one is more effective than another or that the order in which they are implemented makes any difference. (Other maneuvers have been described, but are not widely used.)

McRoberts maneuver is often the only one needed

In this maneuver, the laboring woman's thighs are hyperflexed against her abdomen.³¹ This hyperflexion does not increase the diameter of the pelvis, as is sometimes claimed. Rather, it flattens the sacrum and changes the angle of the symphysis pubis in relation to the baby's anterior shoulder, often freeing it. It is an extremely effective way to resolve shoulder dystocia and is often the only maneuver necessary.

Family members can assist—contrary to plaintiff attorney contentions. This maneuver can be performed by nurses or family members if they are properly instructed. Plaintiff attorneys will sometimes argue that the use of family members in this situation is inappropriate, but they are wrong. Family members are sometimes instructed to hold a mother's legs in a certain position while she is pushing; they can certainly be instructed to hold the legs against the maternal abdomen during attempts to resolve a shoulder dystocia.

Suprapubic pressure with or without McRoberts

In this maneuver, a nurse or other attendant places direct pressure with an open hand or fist just above the mother's symphysis pubis. The pressure can be directed straight down or to the left or right. Wherever it is directed, the aim of the pressure is to push the baby's anterior shoulder out of its position behind the mother's pubic bone.

The combination of McRoberts maneuver and suprapubic pressure can resolve shoulder dystocia in as many as 58% of cases.²²

Woods screw maneuver attempts to “spin” the baby

If the McRoberts maneuver and suprapubic pressure do not resolve the shoulder dystocia, the Woods screw maneuver is usually imple-

mented next.³² In this maneuver, the obstetrician inserts a hand into the posterior vagina and pushes the front of the baby's posterior shoulder in a spiral direction (clockwise or counterclockwise). The goal is to “unjam” the anterior shoulder from its trapped position behind the symphysis pubis.

The Woods screw maneuver is very effective. After it has been used, it is appropriate to apply moderate traction to the baby's head to determine whether the baby can be delivered.

Variants: Rubens maneuver. In this maneuver, the obstetrician pushes on the posterior aspect of the posterior shoulder. In addition to spinning the shoulders, as in the Woods screw maneuver, the Rubens maneuver causes shoulder abduction, thus decreasing the biacromial diameter that has to pass through the pelvic outlet.

Attempts to deliver the posterior arm

If shoulder dystocia still persists, the next strategy is usually an attempt to deliver the baby's posterior arm. This is done by placing a hand deep into the posterior aspect of the vagina, grabbing the baby's posterior arm, sweeping that arm across the baby's chest, and delivering it. Once the posterior arm and shoulder are delivered, it is almost always possible to deliver the baby directly from this position or to move the baby in a spiral direction (clockwise or counterclockwise) to free the anterior shoulder.

Other maneuvers

Two other maneuvers are occasionally used, though neither is considered mainstream.

Gaskin or “all fours” maneuver. This technique is frequently advocated by the midwife community.³³ It involves moving the laboring woman from the standard lithotomy pushing position to her hands and knees to free the stuck anterior shoulder. However, many have questioned the practicality of turning a fatigued, laboring woman rapidly enough to deliver a baby within the 4 to 6 minutes available, particularly when an epidural has been given or other maneuvers have already used up much of the allotted time.

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We lack evidence that any of the 4 main maneuvers is superior—or that they should be used in a specific sequence

Do not ignore maternal concerns

Often a mother will voice concern about whether she will be able to deliver her baby safely vaginally. She may feel that her infant is too big, that she is too small, or that her obesity will make her delivery more difficult. Do not blithely ignore such concerns or provide blanket reassurances that everything will be OK.

Instead, review with her any risk factors she may have for shoulder dystocia and discuss the specific odds of injury to her baby should dystocia arise. Then discuss the risks to her and the discomfort she will experience if she elects a cesarean section.

Patients have a right to know the risks

Although it is appropriate to be reassuring when there are no significant risk factors, patients deserve to know what risks they run and to have these risks put into perspective. For example, if the mother has diabetes and her baby is estimated to weigh over 4,500 g, the risk of permanent brachial plexus injury approaches 1 in 450. The same is true if she is nondiabetic but has an estimated fetal weight of 5,000 g or more.

In high-risk cases such as these, you should discuss the risks with the patient and have her participate in the decision-making. You should also clearly document this discussion in the medical record.

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The obstetrician has 4 to 6 minutes to resolve shoulder dystocia before the threat of central neurologic injury is significant

Zavanelli maneuver if all else fails. This maneuver should be attempted only when all other efforts have failed.³⁴ It involves flexing the fetal head and attempting to push the baby's head back into the vagina, followed by emergency cesarean section.

Although case reports have described successful use of this maneuver, there also have been reports of fetal death, fractured spines, and other severe fetal damage. Thus, this maneuver should be the absolute last resort in desperate emergencies.³⁵

What not to do

Traction

Do not continue to apply traction to the fetal head if the shoulder does not come. Once shoulder dystocia is diagnosed, cease all attempts to deliver the baby by continued pulling. Carefully but expeditiously use the various maneuvers you were trained to do, applying moderate traction

after each one to see if the shoulder has been freed.

Fundal pressure

Do not apply fundal pressure. It never helps resolve shoulder dystocia, but only further jams the stuck shoulder against the maternal pubic bone. It also can cause injury to the fetus or even rupture the uterus.

Fundal pressure is often cited in court as a definite standard of care violation.

Theory vs evidence

A 3-member team is adequate

Shoulder dystocia occurs unexpectedly. Once it does occur, the obstetrician has 4 to 6 minutes to resolve it before the threat of central neurologic damage to the baby becomes significant. Although it would be very helpful for additional personnel to be available, it is not always possible to assemble this team quickly enough.

In reality, the only personnel truly necessary to resolve a shoulder dystocia are:

1. The delivering doctor or midwife
2. A medically trained assistant familiar with McRoberts maneuver and suprapubic pressure
3. Any other available person, including a family member, who can be drafted to help and instructed to participate in the McRoberts maneuver by flexing one of the mother's thighs

The McRoberts maneuver and suprapubic pressure can be and often are performed simultaneously by the same nurse or other assistant.

Drills are not an absolute necessity

It is sometimes claimed that formal shoulder dystocia drills should be conducted in labor and delivery units at fixed intervals. Although this may be a useful and reasonable educational practice, it is more important that each individual on the labor and delivery team know what his or her role is during such an emergency. Whether this is achieved through a practice drill or didactic instruction does not matter.

CONTINUED

In short, there is nothing about the concept of a drill that is “standard of care.” What is standard of care is that every team member knows what to do, how to do it, when to do it, and how to document it.

Episiotomy is often superfluous

Multiple studies have shown that episiotomy is not necessary to resolve shoulder dystocia, although many textbooks and other published protocols still recommend it.³⁶ The obstructing factor in shoulder dystocia is not the soft tissue of the perineum but the symphysis pubis. The only time episiotomy helps is when more room is needed for the obstetrician’s hand to enter the posterior aspect of the vagina to perform a shoulder dystocia maneuver. If you can perform all necessary maneuvers without episiotomy, it is superfluous.

Document early and always

Because shoulder dystocia often leads to litigation, it is extremely important to document what happened during delivery as soon as feasible and in as much detail as possible. Standardized forms are now available. (Visit WWW.OBGMANAGEMENT.COM for the form accompanying this article.)

At minimum, you should record:

- how shoulder dystocia was diagnosed
- which shoulder was anterior and which was posterior
- quantification of the force applied initially and in subsequent traction attempts, using terms such as “mild,” “moderate,” or “significant”
- duration of attempts to resolve the dystocia
- maneuvers performed
- approximate length of time each maneuver was tried
- condition of the baby at delivery, including Apgar scores, a description of all injuries and bruises, and cord pH, if obtained
- time from delivery of the fetal head to delivery of the body
- documentation of the discussion with the patient following delivery

Given that the most frequent criticism of obstetricians in the courtroom in brachial plexus injury lawsuits is that they pulled too hard, the best defense consists of careful, complete, and contemporaneous documentation of one’s actions at delivery.

Lawsuits happen

Even when everything is done correctly, there is a very high likelihood that a lawsuit will be filed when there is a permanent brachial plexus injury.

The 2 claims generally made against obstetricians are:

- The obstetrician should have known or predicted that the risk of shoulder dystocia was high, and should have performed a cesarean section or at least offered the mother that choice.
- As the baby has a permanent brachial plexus injury, the obstetrician must have pulled too hard at delivery.

The best defense

The best defense is, as always, to have practiced good medicine and to have documented it. You must be able to demonstrate from your records—years after a delivery that you no longer remember—that you:

- made appropriate prenatal judgments and were aware of risk factors
- informed the mother of such risk factors when they are significant
- provided proper obstetrical care
- documented in the medical record that you knew what you were doing and did it correctly

It is then your job, along with the defense team, to educate the jury that, even in the best of hands and with perfectly appropriate care, permanent brachial plexus injuries can occur. The plaintiff’s contention that an injury proves the obstetrician did something wrong must be shown for the unsubstantiated misstatement it is.

Some good news is on the horizon. Recent research has produced a mathematical tool that appears to be able to predict 50% to 75% of all women destined to have shoul-

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You must be able to show—years later—that you:

- made appropriate prenatal judgments
- informed the mother of her risk factors
- provided proper care
- knew what you were doing

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der dystocia, with a false-positive rate of only 2% to 3%.³⁷ If this model holds up under further investigation, it may become possible to avoid most shoulder dystocia deliveries and, with them, permanent brachial plexus injuries.

Meanwhile, what is an obstetrician to do about shoulder dystocia? As always, give the best care you can. Know the risk factors. When possible, consider alternatives to vaginal delivery and be less aggressive in the management of labor. Know the techniques for resolving shoulder dystocia and have a preestablished plan for what to do.

Document, document, document. You can give the best care in the world, but if you cannot demonstrate on paper years down the road that you did so, our current liability system will make it seem as if you did not. ■

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FAST TRACK

A new model may predict 50% to 75% of all women destined to have shoulder dystocia