Title: Vacuum Extraction Delivery: Procedure, Risks, and Possible Birth Injuries

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Vacuum Extraction Delivery: Procedure, Risks, and Possible Birth Injuries

For most expectant parents, childbirth feels like a process they cannot fully prepare for. You read the books, take the classes, and tour the hospital, but no one tells you what will actually happen if labor takes a turn. One of the situations that often catches parents off guard is when a doctor reaches for a vacuum extractor in the middle of delivery.

Vacuum extraction is one of the most common assisted delivery procedures used in U.S. hospitals today. When performed correctly, it can help shorten a difficult delivery and protect the baby from harm. But when it is misused, performed in the wrong circumstances, or continued past the point where it should have been stopped, vacuum extraction can cause serious and sometimes permanent birth injuries.

If your child suffered an injury during a vacuum-assisted delivery, our birth injury attorneys can help you determine whether the procedure was performed within the accepted standard of care.

Here's a guide from our team to help you understand what vacuum extraction is, why doctors use it, what can go wrong, and how to recognize when a birth injury may be the result of medical negligence.

What Is Vacuum Extraction?

Vacuum extraction is a type of operative vaginal delivery. The doctor places a soft or rigid cup, attached to a suction pump, on the top of the baby's head as it nears the end of the birth canal. During each contraction, the doctor applies gentle traction to help guide the baby out while the mother pushes.

In the United States, roughly 5% of all live births are operative vaginal deliveries, and more than 80% of those use a vacuum extractor rather than forceps. The procedure is sometimes called vacuum-assisted delivery or vacuum-assisted vaginal birth.

When done correctly, vacuum extraction can be a safer and faster alternative to a cesarean section in the right circumstances. But the procedure carries known risks, and doctors are expected to follow strict guidelines from the American College of Obstetricians and Gynecologists (ACOG) regarding when it is appropriate.

When Is Vacuum Extraction Used?

Doctors typically consider vacuum extraction in the second stage of labor, after the cervix is fully dilated and the baby's head is low in the birth canal. Common indications include:

- Prolonged second stage of labor that is not progressing.
- Signs of fetal distress on the heart rate monitor, requiring expedited delivery.
- Maternal exhaustion or inability to push effectively.
- Maternal medical conditions, such as certain heart or neurological problems, where prolonged pushing is unsafe.

Vacuum extraction is not appropriate in every delivery. ACOG and Society for Maternal-Fetal Medicine (SMFM) guidelines outline several contraindications, meaning situations where the procedure should not be used. These include:

- Gestational age under 34 weeks (premature infants are at high risk of intraventricular hemorrhage).
- Estimated fetal weight under approximately 2,500 grams.
- An unengaged fetal head, or a head that has not descended low enough in the birth canal.
- Unknown fetal position, or face or brow presentations.
- Suspected fetopelvic disproportion, meaning the baby is too large for the maternal pelvis.
- Suspected fetal bleeding disorder or demineralizing bone disease.
- Operator inexperience with the procedure.

Failing to recognize a contraindication before reaching for the vacuum is one of the most common ways vacuum-assisted deliveries lead to preventable injuries.

How the Procedure Works

A vacuum extractor consists of a soft or rigid cup attached by tubing to a suction pump. The basic steps of a properly performed vacuum extraction include:

- Confirming that all prerequisites are met, including full cervical dilation, ruptured membranes, known head position, adequate descent, anesthesia, and informed consent.
- Positioning the cup over the flexion point on the baby's skull, near the posterior fontanelle.
- Applying suction to create a vacuum seal between the cup and the scalp.

- Applying gentle traction along the pelvic curve during each contraction as the mother pushes.
- Stopping the procedure if the cup detaches (called a “pop-off”) repeatedly, if there is no progress, or if a defined time limit is reached.

ACOG and AAFP guidelines generally recommend abandoning vacuum extraction after roughly 20 minutes of attempted use, or after three cup pop-offs, whichever comes first. A doctor who continues past these limits significantly increases the risk of serious injury to the baby.

Risks and Possible Birth Injuries to the Baby

Even when vacuum extraction is performed appropriately, it carries known risks. When it is misused, those risks rise sharply. Possible injuries to the baby include:

- **Cephalohematoma**: A collection of blood between the baby’s skull and the membrane covering the skull. Many cephalohematomas resolve on their own, but they can contribute to jaundice and occasionally require treatment.
- **Subgaleal hematoma**: A rare but potentially life-threatening collection of blood between the scalp and the skull. Because the space can hold a significant volume of blood, subgaleal hematomas can lead to severe blood loss and require emergency treatment.
- **Intracranial hemorrhage**: Bleeding inside the skull, including subdural, subarachnoid, and intraventricular hemorrhage. Excessive suction or repeated cup pop-offs can rupture fragile blood vessels in the developing brain. Learn more about infant brain bleeds.
- **Skull fractures**: Linear or depressed fractures of the newborn’s skull. While many are minor and heal on their own, severe fractures can cause underlying brain injury.
- **Scalp lacerations, bruising, and caput succedaneum**: Swelling and bruising of the scalp from the suction cup. These usually resolve, but extensive bruising can raise bilirubin levels and contribute to newborn jaundice.
- **Hypoxic-ischemic encephalopathy (HIE)**: When repeated failed attempts at vacuum extraction prolong delivery, the baby may experience oxygen deprivation, leading to HIE and potential permanent brain damage.
- **Shoulder dystocia**: When the baby’s head is delivered but the shoulders become stuck behind the maternal pelvic bone. Vacuum extraction is associated with a higher rate of shoulder dystocia, especially in larger babies, and shoulder dystocia can in turn lead to brachial plexus injury.
- **Brachial plexus injury, including Erb’s palsy**: Damage to the network of nerves controlling the arm and shoulder, often resulting from excessive traction during a difficult delivery. Learn more about Erb’s palsy and brachial plexus injuries.

- **Cerebral palsy**: When severe brain injury, intracranial bleeding, or prolonged oxygen deprivation occurs, the long-term result can be cerebral palsy.
- **Retinal hemorrhage**: Bleeding in the eye from the rapid pressure changes during suction. Most cases resolve on their own without lasting effects.

Most babies delivered by vacuum extraction recover without lasting harm. But the worst outcomes, including brain injury, cerebral palsy, and permanent disability, are also the ones most often linked to misuse of the procedure.

Why Careful Monitoring During Delivery Matters

Vacuum extraction is one of the most time-sensitive and judgment-driven procedures in obstetrics. From start to finish, the doctor and care team must continuously evaluate whether the procedure is working, whether the baby is tolerating it, and whether to stop.

Careful monitoring during a vacuum-assisted delivery should include:

- Continuous electronic fetal heart rate monitoring before, during, and after the procedure.
- Tracking the number of contractions during which traction is applied.
- Counting cup pop-offs and stopping after the recommended limit.
- Watching for signs that the baby is not descending despite multiple attempts.
- Being prepared to convert immediately to a cesarean section if the procedure fails.
- Alerting the neonatal team in advance so they can respond to any complications at birth.

When any of these steps are skipped or delayed, the chance of a preventable birth injury rises substantially. Many of the most serious vacuum-related injuries our firm encounters in birth injury cases stem from continuing the procedure too long, ignoring fetal distress, or failing to escalate to a C-section when escalation was clearly warranted.

When a Vacuum Extraction Injury May Be Medical Negligence

Not every injury from a vacuum-assisted delivery is the result of malpractice. But many are. Possible examples of negligence in a vacuum extraction case include:

- Using vacuum extraction before 34 weeks of gestation.
- Attempting vacuum extraction without confirming the position of the fetal head.
- Continuing vacuum extraction past ACOG-recommended time limits or after multiple cup pop-offs.
- Failing to recognize signs of fetal distress on monitoring equipment.

- Using excessive suction force or improper cup placement.
- Switching between vacuum and forceps without clear medical justification, which is associated with significantly higher injury rates.
- Failing to convert to a C-section when vacuum extraction is clearly not progressing.
- Performing the procedure without proper training, experience, or hospital privileges.
- Failing to alert the neonatal team in time to manage post-delivery complications.

You can learn more about how our firm investigates these errors on our Labor and Delivery Negligence page and our Delivery Room Errors page. In some cases, the alternative tool, forceps, would have been safer, and the choice to use vacuum was itself a deviation from the standard of care.

What Parents Should Do if They Suspect a Vacuum Extraction Injury

If your baby was delivered with the help of a vacuum extractor and you noticed unusual symptoms either at birth or in the days afterward, here are the steps to consider:

- **Seek prompt medical evaluation.** Bring concerns about feeding, alertness, swelling on the head, seizures, or developmental signs to your pediatrician right away.
- **Request and preserve all medical records.** These should include the delivery summary, fetal monitoring strips, nursing notes, and any operative notes from the procedure.
- **Document everything you observed.** This includes how long the vacuum was used, how many times the cup came off, and what the medical team said during and after the procedure.
- **Watch for delayed signs of injury.** Some birth injuries, including developmental delays, cerebral palsy, and seizure disorders, become apparent only weeks or months after delivery.
- **Consult a birth injury attorney** if your child has been diagnosed with a serious condition and you suspect that the vacuum-assisted delivery was performed improperly.

Hope and Next Steps for Families

A vacuum-assisted delivery is not, by itself, a cause for alarm. The vast majority of babies delivered with a vacuum extractor are healthy and recover quickly from any minor bruising or swelling. But for the families whose child has been left with a serious or lifelong injury, the right answers and the right care can change everything.

Early diagnosis of conditions like HIE, intracranial hemorrhage, or brachial plexus injury allows families to begin treatment and therapy that may significantly improve long-term outcomes. Legal advocacy ensures that the resources needed for medical care, therapy, and long-term support are not the family's burden alone.

At Wais, Vogelstein, Forman, Koch & Norman, LLC, our work is twofold: helping children access the best possible care, and helping parents secure the justice they deserve when medical negligence is the reason.

Trust Your Instincts. Get Answers.

If your child was delivered with the help of a vacuum extractor and something does not feel right, whether that is a diagnosis, a delay in development, or a question about what happened in the delivery room, you have every right to ask for answers.

If you believe your child's injury may have been preventable, our birth injury attorneys at Wais, Vogelstein, Forman, Koch & Norman, LLC are here to listen. We have decades of experience representing families whose lives were changed by medical error, and we never stop fighting for accountability.

Contact us today at 410-998-3600 or schedule a free consultation through our contact page.