

Spina Bifida Surgery While in Utero



This photo features a 21-week-old human fetus (Baby Samuel), still inside his mother's uterus (womb). The photo was taken during an operation (Vanderbilt Univ, 1999) to correct spina bifida, a congenital condition. "Fetus" is a Latin word meaning "offspring" or "young one".

For an update on Samuel, [click here](#).

The photo is perhaps the most amazing of the Twentieth Century; it is certainly the most curious. At first glance, the viewer may be disorientated and even uncomfortable at the sight of an exposed womb partially removed from a mother during an operation. Once the initial shock wears off, take a closer look toward the center of the photo and you will witness a miracle of life: the tiny hand of a 21-week-old fetus (Latin for baby) appears through a tiny slit in the womb; the surgeon, Dr. Joseph Bruner, who is about to perform a delicate operation, "instinctively took his hand." The fetus and Dr. Bruner are "holding hands."

At first glance...

The tiny hand belongs to 21-week-old Samuel Armas. He was delivered from the womb on December 2, 1999 (see update). Note: Babies of this age can be legally aborted in most states.

The amazing story...

The hand, no larger than the tip of your finger, yet perfectly formed, is that of Samuel Armas who is a mere 21-weeks of age. The amazing photo was taken during an operation at Vanderbilt University Hospital to repair an opening in the infant's spine.

Samuel has spina bifida, a defect caused by the failure of the spine to close properly during development so that, in the worst case, part of the spinal cord protrudes. The resulting damage to the spinal cord can cause paralysis or weakness of the legs; bowel and bladder incontinence; and often results in fluid on the brain, which causes severe brain damage, learning disabilities, and retardation. Initially, the surgery was "performed between 24-30 weeks of pregnancy" so that if labor pains were induced and delivery occurred, the baby had a good chance of surviving.

Surgery at 21 weeks not only brought into question the ability of surgeons to operate on a patient as "small as a mouse" but also the faith of parents who chose to undergo the dangerous operation. The baby, after all, is too young to survive outside his mother's protective womb. By removing the womb, cutting open the uterus, and temporarily draining the amniotic fluid in which the infant was suspended, the operation jeopardized Samuel's life by tempting labor contractions.

In operations of this delicacy, an ER-style crash-cart team stands by in an adjoining room; the crash-cart, in this instance, was not on standby status for the tiny patient -- there would be no hope for Samuel if anything went amiss -- but for his mother if contractions were triggered.



The anxiety begins...

Julie and Alex Armas had "tried to conceive for three years and had suffered two miscarriages along the way." Julie, now 27 years of age, was pregnant with their third child, whom they "intended to call Samuel Alexander, if it was a boy."

The excitement of having a "perfect" child -- every parent's dream -- was shattered 14 weeks into the pregnancy when Julie began to experience severe

cramps. An ultrasound scan revealed that Samuel's "brain was misshapen and his spinal cord was sticking out from a deformed backbone." He had spina bifida.

The defect occurs in approximately one out of every one thousand births. While some infants experience a milder form of the disorder, about 96% have the more serious form. Samuel was numbered among the latter group; he had the most serious form of spina bifida. The diagnosis was "catastrophic" to Julie and husband, Alex, a 28-year-old jet aircraft engineer. After suffering through two miscarriages, the "latest news seemed like a cruel joke." They were literally "torn apart" by the news.

The majority of parents, when they hear their child has been stricken by spina bifida, choose to terminate the pregnancy rather than bring an imperfect child into the world. The calculated plan is supposedly humane: it is better to kill the infants before they see daylight than to have them suffer the rest of their lives. Hence, the policy is one of terminating the patient rather than giving treatment.

One of the reasons Julie and Alex decided to give USA Today an interview "stemmed from the fact that it is believed that the vast majority of babies with spina bifida are aborted in this country. We wanted people to know that there is an educated, professional couple out there who love and value their child even though he is 'defective' by society's definition."

The option to terminate Samuel was open to Julie and Alex. Like most states, Georgia permits babies to be routinely aborted, often times by the same practitioners who attempt to save lives in other situations.

Fortunately for Samuel, the option was not an alternative for the Armas family. "We have always believed life begins at conception, and we never wavered, not even when it was actually our decision to make and not mere words that we say," Julie said. "My husband's first words after we received the news were, 'Well, we wanted a baby and this is the one God had chosen to give us.'"

The stance that Samuel and, indeed, every infant, deserved the right to life, was not without the painful realization that their decision meant that he might suffer a lifetime of handicaps. Julie and family turn to the Internet for help...

For the many millions who are accustomed to logging on to the Internet, the next step seemed a logical one: Julie and family turned to the vast resources of the World Wide Web to find out more about the disorder and make themselves aware of the latest medical advances. Julie's mother found a web site simply labeled **www.fetal-surgery.com**, "Your starting point for information regarding fetal surgery for spina bifida."

(When I visited the web site, retracing the steps of the family, the background music on the web site was quite unexpected; that is, until I realized it was the theme from Mission Impossible.) The site directed the family to the Vanderbilt University Hospital in Nashville, Tennessee. There they found Dr. Joseph Bruner, the surgeon who was to lead the operation on Samuel; it is his hand you see in the photo.

The Vanderbilt Fetal Diagnosis & Therapy team offered fascinating details of surgery pioneered by Dr. Bruner. The results of 53 cases looked promising to the Armas family, especially, the aspect that surgery may have a positive effect on the brain development of Samuel and possibly prevent one of the most devastating complications of spina bifida -- retardation. "I wasn't as concerned about a child who couldn't walk," Julie said in the USA Today interview, "but I want a child who knows me."

A race against time...

As Julie and Alex discussed the procedure with their local doctor, a race against time began. The latest sonogram scan did not reveal any sign of brain swelling which leads to learning impairment. Their hope and prayer was that the pioneering surgery at Vanderbilt, if implemented in time, might limit and even prevent brain damage in their beloved Samuel. Hence, time was now their enemy.

Mark Bliton, a specialist in ethics at Vanderbilt, meets with fetal surgery candidates prior to the corrective procedure. Julie and Alex were no exceptions. Bliton's role is not to influence the candidates as to whether they should or should not have the surgery, but to present them with different points of view so that they can make a qualified decision. One point of consideration was that the procedure was relatively new; it was too early to tell whether children who have the corrective surgery will have fewer long-term problems, including leg weakness and learning disabilities, which are commonly associated with the condition. Even with the surgery, nearly all children with spina bifida require permanent "shunts," thin tubes that drain excess fluid that can cause dangerous pressure and subsequent damage to their brains.

Why would parents decide to risk the life of their child in a surgical procedure where the risk of death far outweighs the benefits? "There is something worse than death for their children," Bliton stated to USA Today. "The thing that is worse than death is that my child will not be able to be successful and will suffer in his or her own recognition of that. That is unbearable for a parent."

The decision to proceed...

At twenty-one weeks, Julie and Samuel, the youngest infant to date to undergo the procedure, were prepped for surgery. Both general and epidural anesthesia are used for intrauterine spina bifida repair in order to anesthetize both Julie and Samuel and

prevent contractions, which would be deadly to the infant.

Although the operation was to take less than an hour, the emotional drain would seem a lifetime. This could either be a miraculous intervention to prevent further damage or, as Dr. Bruner told Julie, "a very expensive miscarriage." If anything goes wrong, no attempt will be made to deliver Samuel by Cesarean section.

Mark Bliton, on his way to observe the surgery, raised a general question about the procedure to USA Today, "Why would anybody do this? Why risk the baby's life for something that is not fatal?" The Armas decision to proceed with the operation stuns Bliton. The answer is that there is hope. "If he dies, that's horrible for me and for us," Julie told USA Today before entering the operating theater. With tears flowing she added, "But not for him. The worst thing might be if we don't do this, and this is standard treatment when he's 21, and he says, Why didn't you know about that?" And we say, 'We did, but we didn't do it for you.'"

The operation begins...

With the ER-style crash-cart team standing by in an adjoining room, Dr. Bruner and Dr. Noel Tulipan, a pediatric neurosurgeon, make a bikini incision, much like that made during a Cesarean section, and the melon-size uterus is delivered out of the abdomen and placed on the stomach.

The instruments were designed to work in miniature; after all, the patient could fit in the palm of your hand. The sutures that would later close the incisions were less than the diameter of a human hair, nearly invisible.

The contents of the womb were then probed with ultrasound in order to take a look inside at Samuel and the placenta. An instrument called a Tulipan-Bruner trocar is placed through the uterine wall to drain the amniotic fluid and direct placement of other instruments. The amniotic fluid is placed in a warmer for safekeeping; it will be restored to the womb later.

A small cut is made in the uterus and the baby is positioned back up, with the lesion centered in the incision. The pouch, about the size of Dr. Tulipan's thumb, had the appearance of a hideous jelly fish that had attached itself to Samuel's back. As the ultrasound had discovered, Samuel has the worst form of spina bifida. But in this instance, the lesion is located low on his back at the fifth lumbar vertebra. In most cases, the lower the lesion, the less severe the nerve damage.

At one point in the operation, the surgeon whispered, "Shh!' You'll wake the baby!"

Dr. Bruner holds Samuel firmly in place while Dr. Tulipan, making use of strong magnifying glasses, performs the delicate surgery of freeing the spinal cord and replacing it into the spinal canal. Dr. Tulipan covers the cord with it's normal sheath, closes the sac that protects the spinal cord, and applies the tiny sutures to close the skin. The procedure is a routine one for the team; less than an hour after the surgery had begun, the uterus is ready to close. Before the last stitch is placed, the amniotic fluid is replaced. As the uterus, safely protecting Samuel once again, is gently placed back in the abdomen, someone exclaimed, "Beautiful," and the tenseness in the room gave way to a sigh of relief. Mother and child were doing well

-- Samuel had survived the surgery. Patients are usually discharged home 3 to 4 days after surgery. Hence, Julie was soon back home with Alex in Georgia. Within about forty-four days after the repair, the scar will be well healed. Samuel is due to be delivered on December 28, 1999 (see update below). For the remainder of the pregnancy, Julie will be seen weekly by her own doctors.

The photo...

"The photo reminds us that my pregnancy isn't about disability or illness," Julie said, "it's about a little person. That's what it's always been about. That's what the media elite wants us to forget. And, that's why they don't want you to see the picture." The photo should be televised across the nation and published in every newspaper in the country. It won't be because the media does not want Samuel's photo to be shown; it is much too graphic a reminder that a real baby is growing in the womb. "It is not a glob of tissue, or a "product of conception;" it is a living soul. One woman wrote Vanguard Magazine, "How dare you show this!" She ended the terse rebuke with a curse word usually found scrawled on the walls of an abandoned building.



If you think we are overstating the case of the media's refusal to show the picture of Samuel's hand, ask Matt Drudge of "The Drudge Report," who resigned from Fox News because they would not show the photo.

Julie is happy that the photo has been seen worldwide. "We think that's great," she stated. "The fact is, we are pro-life. If God wants to use that, then that's fine."

The Fetal Position...

Samuel has not yet seen God's sunshine; he does not recognize the tender words of his mother whispering, "I love you." He's never seen his father's approving smile. And he doesn't understand the laughter reverberating throughout the womb when he squirms about. But the infant does have a position -- call it a "fetal position," if you will -- on abortion. Simply put, the innocents within the womb have the God-given right to life and want to live.

The summary...

Julie summed up the fetal position in an entry to Dr. Laura's Guest Book after viewing a show featuring Samuel's operation. "Please don't misunderstand my husband and I - we are not superhuman. This has hit us very hard and it is difficult not to ask 'why us?' Well, thanks to your show, I have been given an answer. No matter what Samuel's outcome is, we know that God has allowed him to impact others with a photograph of his tiny, unborn hand. " Truly, Samuel's photo states the fetal position better than words can describe. He literally reached out from the womb to save other infants from the horrors of abortion.