

## MEDICINE

# New research shows infants do feel pain — at damaging levels

By Margie Patlak

SPECIAL TO THE EXAMINER

**W**EIGHING LESS than two pounds, a Washington, D.C. premature infant was totally conscious recently while surgeons cut open his chest, pried his ribs apart and tried to repair his malformed heart.

The baby died 6 weeks later, but his mother's publicity of his plight sparked a controversy in the medical community over whether premature and newborn babies should receive anesthesia while undergoing surgery.

Less dramatic but more common are the millions of male babies who start their lives by being circumcized without pain relief.

The traditional rationale for not using anesthesia for newborns undergoing painful procedures is that the dangers of anesthesia outweigh the possible benefits of pain relief on such tiny infants.

"The problem anesthesiologists have dealt with over the last 15 years is that more and more, very sick, small infants are needing surgery. The obvious detrimental effects of certain anesthetics led to people shying away from them," says Dr. Willis McGill, chief of anesthesiology at Children's Hospital in Washington, D.C.

This practice was supported by old and rather unscientific reports that newborns were not neurologically mature enough to sense pain, therefore giving an anesthetic was superfluous and might be dangerous, McGill added.

But according to pediatrician Dr. John Scanlon, who is a major proponent for anesthesia for newborns, the main reason newborns were assumed not to feel pain "was because newborns can't speak."

Scanlon, who is the director of the neonatology division of Columbia Hospital for Women in Washington, D.C., likens surgery done on newborns without anesthetics to "putting a gag in someone's mouth and torturing him. It's absolutely inhumane. Would you allow a vet to do surgery on your pet without any anesthesia? Why should we treat newborns any worse

than pets?"

Adding fuel to the fire are recent studies showing that the pain of surgery may actually hamper the success of the procedure. Research reveals that when surgery is done with light or no anesthesia, for example, a newborn responds with a surge of epinephrine and other "stress" hormones.

These hormones raise blood pressure and blood sugar levels and lower the level of blood oxygen. Anesthesia hinders this stress response and studies show babies given potent anesthetics are more stable during surgery and have fewer postoperative complications than babies given minimal anesthesia.

Other research reveals that the pain pathways are much more advanced in newborns than previously thought, and the physical response to pain is the same for both newborns and adults. In other words, babies do feel pain.

These new findings prompted the American Academy of Pediatrics to issue a statement in September that the decision to withhold anesthesia from newborns "should be based on the same medical criteria as used for older patients."

The wide range of anesthetics now available, the Academy statement adds, permit safe administration of anesthesia to newborns undergoing surgery.

Newborns may still require surgery without anesthesia, but only when their heart has stopped or is

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barely beating, or their breathing is extremely unstable, and surgery must be done as part of an effort to resuscitate them, points out Dr. Raymond Laravusco, chief of pediatric and cardiac anesthesiology at the University of Wisconsin Hospital in Madison.

In these cases, newborns, just like adults in similar situations, may not survive if they are given anesthetics, which are essentially poisons to the heart and other tissues.

"These are extreme cases, where it's not a question of whether a patient is a newborn or not but rather the patient is alive or not," says Laravusco.

Often when a newborn needs emergency surgery, there isn't enough time to give it anesthesia, according to pediatrician P. Sasidharan of the Medical College of Wisconsin in Milwaukee.

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— Dr. John Scanlon

Premature babies' lungs often rupture or collapse, for example, and physicians quickly have to put tubes into their chests to ensure the babies' breathing. "In intensive-care nurseries, these type of cases occur maybe 20 percent of the time," Sasidharan says.

Newborns undergoing circumcision do not fall into this emergency category that permits surgery to be done without anesthetics.

"When people were questioning us as to why we weren't giving anesthesia to these unstable premature babies who were at death's door, our question was, why are you cutting off healthy babies' foreskins without anesthesia?" says McGill.

Studies suggest this is a valid question. Researchers at Washington University Medical School in St. Louis recently used a computer to analyze the cries of normal newborn males undergoing circumcision and concluded that the babies had a distinctive pain cry — differing from hunger or fear cries — in response to circumcision.

Using the pain cry as an indicator, some investigators have shown that newborns are actually more sensitive to pain than older infants. But circumcisions are routinely done without anesthetic on newborns, who are strapped immobile to a board, even though a local anesthetic is given to an adult male undergoing the same procedure.

"Traditionally people thought a baby's response to the pain of circumcision was so brief that it did not outweigh the risks of anesthesia," Sasidharan says.

"But now that good anesthetics are available there is no current rationale for not giving anesthesia for babies undergoing circumcision."

Babies not only feel the pain of circumcision but they also seem to remember the pain. These painful memories affect their behavior, studies show, and may hamper parent-infant bonding, and the development of good feeding schedules.

One study showed that for two days following circumcision, newborns who were given anesthetics during the procedure were more alert and less irritable and had a greater ability to quiet themselves when disturbed than infants who underwent circumcision without anesthetics. Other studies show that circumcision without anesthesia can alter a baby's feeding pattern.

"A calm, quiet infant will have less frequent sucking but each suck is of longer duration. You don't see that in babies following circumci-

sion," says Sasidharan.

It is unknown whether a painful circumcision could have long-term psychological effects. As McGill points out, most babies undergo a great deal of trauma during birth without apparent psychological damage.

"There's nothing worse than being pushed down a birth canal which is usually only 2½ inches wide," he says.

But the pain of circumcision or other surgery in newborns can be easily avoided, and Sasidharan points out:

"We strive so hard to emphasize soothing and comforting the baby and the developing of a good maternal-infant bond. Once you subject a baby to some kind of pain, their behavior is totally different and this interferes with the normal events we attempt to achieve."