Key Points

1. 50 pediatric Chiari patients underwent decompression surgery
2. Post-operatively, half (Group A) received regularly scheduled doses of acetaminophen and ibuprofen
3. The other half (Group B) were given these medicines when requested
4. All patients were given narcotics when requested
5. Group A had significantly lower pain; shorter hospital stays; used less narcotics; and used less nausea drugs than Group B

Definitions

analgesic - a drug that relieves pain

antiemetic - drug used to control nausea and vomiting

cerebellar tonsils - portion of the cerebellum located at the bottom, so named because of their shape

ibuprofen - common, over-the-counter, anti-inflammatory pain reliever; found in Motrin

laminectomy - surgical removal of part (the bony arch) of one or more vertebrae

narcotic - class of drugs derived from the opium plant - or created synthetically for the same effect; used as pain-killers

suboccipital craniectomy - surgical removal of part of the skull, or cranium, in the back of the head, near the base

syringomyelia - (SM) neurological condition where a fluid filled cyst forms in the spinal cord

Source

Smyth MD, Banks JT, Tubbs RS, Wellons JC 3rd, Oakes WJ. Efficacy of scheduled nonnarcotic analgesic medications in children after suboccipital craniectomy. J

Helping Children Deal With Post-Operative Pain

There's no way around it; Chiari decompression surgery hurts. Muscles are cut, bone is removed, and often the brain itself is invaded by the surgeon's knife. Managing post-operative pain is difficult enough for adults [Ed. note: if you're about to undergo surgery, when you're recovering ask for pain medicine the second you feel anything; it is all too easy to wait until it's too late]; but for kids, it can be especially difficult.

Children are not always able to verbalize how much pain they are in and sometimes become quiet when in extreme pain instead of speaking up. If this happens, not enough pain medicines are given and the children suffer needlessly. Narcotics which are routinely used for adults can also be used for pediatric patients, but the side effects - including nausea and vomiting - can be severe. In an attempt to reduce post-operative pain in children, a group from the Children's Hospital of Alabama and the University of Alabama-Birmingham examined the use of regularly scheduled non-narcotic pain medicines - specifically acetaminophen and ibuprofen - after Chiari decompression surgery. Dr. Smyth, Dr. Oakes, and their colleagues reported their results in the February, 2004 issue of the Journal of Neurosurgery.

The research team looked at the maximum post-operative pain, amount of narcotics used, amount of anti-nausea drugs used, and length of stay in the hospital in a series of 50 Chiari patients under the age of 21 from 1998-2002. The patients were divided into two groups (25 in each group). The first group, Group A, received regularly scheduled doses of acetaminophen and ibuprofen alternately every two hours. The second group, Group B, received the same kind of medicines only when they asked for them. Both groups were given narcotics upon request to treat episodes of extreme pain.

As the patients were recovering in the hospital, their pain was recorded using a common 0-5 scale (point to the face that best describes your pain, 5 is severe pain) and the highest pain number per 8 hour nursing shift was entered into a database. In addition, the nurses entered how much narcotics and anti-nausea drugs were required, and lastly, how long each person stayed in the hospital was entered.

To control for factors other than those being studied, the patient groups were very similar demographically. Each group had 11 boys and 14 girls and the average age of each group differed by only a month (11, 10.9). Group B did have more patients with syrinxes, but the authors later showed that having a syrinx did not influence how much pain the children experienced after surgery. The actual surgery for each patient was essentially the same and involved a suboccipital craniectomy, C-1 laminectomy, and duraplasty.

The doctors found that Group A - the children who received regularly scheduled doses of medicine - fared better in every way than their Group B counterparts (see Figure 1). The average highest pain experienced by Group B patients was 3 out of 5, whereas Group A patient's pain peaked on average at less than 2.

The results were just as dramatic in looking at the use of narcotics and anti-nausea medicine. The Group A children averaged only 1.5 and .5 doses of narcotics and anti-nausea meds per patient respectively, whereas the Group B children needed close to 6 doses of narcotics and over 2 doses of anti-nausea medicine on average per patient.

Finally, the average time spent in the hospital was over half a day lower for Group A than Group B (2.2 vs 2.8 days). While some doctors have suggested that with proper pain control, Chiari decompression in children can be an outpatient procedure, the authors of this study stress their goal was to reduce the discomfort of their patients, not to rush them out the door.

The results of this study seem to make sense when you consider some of the general pain management advice, namely stay on top of the pain and don't let the pain get ahead of you. While some research has shown that adults experience less pain when they are in control of their own pain medicine (self-administered), the same may not apply for children. If children - because of their young age - are not as able to either vocalize their pain, or control their own medicines, then, as this study show, the best course may be regularly scheduled doses of common, non-narcotic pain medicines.

Figure 1
Regular Scheduled Doses Of Pain Medicine Vs On Request Dosing

	Group A	Group B
Avg Highest Pain Score	1.9	3.0
Avg Time In Hosp (days)	2.2	2.8
Avg Narcotic Doses/Patient	1.5	5.8
Avg Antiemetic Doses/Patient	0.5	2.2

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