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ICPA Research Update

Head Movement a Possible Cause of SIDS

By Claudia Anrig, DC

A group of researchers from Australia reports evidence that vertebral compression during sleep may be a contributing factor in sudden infant death syndrome (SIDS). The investigators studied post mortems of 20 infants who had died of SIDS or other causes. At the time of death, five of the infants had their necks extended; nine had their heads turned either to the left or right; and six had their heads in a neutral position.

The researchers say they found no evidence of arterial compression in cases where the child's head was discovered in the neutral position. In contrast, they say six of the 14 infants whose necks were either extended or rotated at the time of death showed clear signs of arterial compression.

The group hypothesizes that infants placed in a prone position would naturally rotate their heads left or right to clear their noses and mouths for breathing. This, they say, could trigger arterial compression and thus help account for the increased incidence of SIDS associated with infants being placed in the prone position.

Further, the investigators theorize, arterial compression might help explain why SIDS is less common in infants younger than one month or older than six months. Infants younger than one month, they point out, are generally not strong enough to extend or rotate their necks to a degree sufficient to compress their arteries; babies older than six months have usually begun to develop normal neck anatomy that protects arteries from this type of compression.

Pamphlett R, Raisanen J, Kum-Jew S. Vertebral artery compression resulting from head movement: a possible cause of the sudden infant death syndrome. *Pediatrics* 1999;103(2):460-468.

Are Pediatric APOM X-Rays Readable?

Anterior/posterior open mouth (APOM) or open mouth odontoid radiographs do not allow for adequate visualization of the pediatric spine, according to a recent study. Brian Jewett, MD,

and colleagues asked a chief pediatric radiologist to review APOM radiographs of 231 children ages 10 and under. All subjects had experienced a recent traumatic event.

The radiologists deemed only 19% of x-rays "complete," meaning that they clearly depicted five key entities: the odontoid (dens); the lateral masses of C1; the C1-C2 disc space; the inner distance between C1 and the odontoid; and the lateral relationship of C1 on C2. The authors concluded that anterior/posterior open mouth x-rays should not be used to judge the integrity of bony structures in the pediatric spine. They write: "Our study shows the futility of the open mouth odontoid view in most cases, especially children under the age of 6, and supports the use of CT scans in this population where the majority of injuries occur in the upper cervical spine."

Jewett BA, Fox JA, Heller R. The role of the open mouth odontoid radiograph in the clearance of pediatric c-spines. American Academy of Orthopaedic Surgeons 1999: paper no. 103, February 5, 1999.

Popular Herbal Remedies May Block Conception

Laboratory experiments indicate that three widely used herbs -- ginkgo biloba, St. John's wort and echinacea purpura -- may inhibit conception, so say researchers in the journal *Fertility and Sterility*. While very small doses of the herbs had no effect on fertility, high doses impaired sperm's ability to penetrate an egg. High doses of St. John's wort and ginkgo biloba (but no echinacea purpura) caused sperm's DNA to "unravel." In contrast, saw palmetto had no such effect on sperm.

Ondrizek C. An alternative medicine study of herbal effects on the penetration of zona-free hamster oocytes and integrity of sperm deoxyribonucleic acid. *Fertility and Sterility* 1997;(13):517-522.

The Effects of Early Pacifier Use on Breastfeeding Duration

Several recent studies from Brazil have suggested that infants given pacifiers spend less time breastfeeding and are weaned earlier from the breast, factors that may put them at increased risk for otitis media, meningitis and other medical problems. This large study, which followed 265 breastfeeding mothers and their infants in upstate New York, confirms those results.

Infants who used pacifiers were breastfed an average of eight times a day, compared with nine times a day in infants who were not offered pacifiers. The investigators also report that infants offered pacifiers spent less time overall breastfeeding. In addition, mothers who used pacifiers weaned their babies off the breast about one month earlier than mothers who used breastfeeding alone. The authors of the study state the importance of not offering pacifiers until breastfeeding has been strongly established.

Howard CR, Howard FM, Lamphear B, deBlick EA, Eberly S, Lawrence RA. The effects of early pacifier use on breastfeeding duration. *Pediatrics* 1999;103(3):33.

Interpregnancy Interval Affects Baby's Risk

How long should a new mother wait before having a second child? A report in today's *New England Journal of Medicine* studied the association between interpregnancy interval and birth weight, birth size and likelihood of preterm delivery. To obtain this data, researchers searched through 173,205 birth certificates of infants born in Utah between 1989 and 1996. The study determined that "infants conceived 18 to 23 months after a previous live birth had the lowest risks of adverse perinatal outcomes; shorter and longer interpregnancy intervals were associated with higher risks." This finding was not altered after controlling for various risk factors of low birth weight, small birth size and early delivery.

Zhu BP, Rolfs RT, Nangle BE, Horan JM. Effect of the interval between pregnancies on perinatal outcomes. *NEJM* 1999;340(8):589-94.

Head Trauma in Children Younger than Two Years

Approximately 600,000 young children are brought to emergency rooms each year with head trauma. Determining which of those children have complicating skull fractures and intracranial injuries can be a clinical challenge.

Scientists from the emergency medicine section of Children's Hospital and Harvard Medical School reviewed the cases of 278 children less than two years old who had been evaluated in the emergency room for head injury. Of those cases, 39 had skull fractures, three had intracranial injuries and nine had skull fractures with associated intracranial injuries.

The authors say that complications were significantly more common in children younger than 12 months. Even minor falls caused complications in some children. Of particular note, say the authors, was that most patients with skull fractures or intracranial injuries were alert and seemingly asymptomatic at presentation. The Harvard researchers urge clinicians to have a high suspicion of complications in children less than two years old that have experienced head trauma.

Gruskin KD, Schutzman SA. Head trauma in children younger than two years. Are there predictors for complications? *Arch Pediatr Adolesc Med* 1999;153:15-20.

School Computers Up Kids' Risk of MSD

Computers in schools are putting children at risk for musculoskeletal disorders (MSD), say researchers from Cornell University in Ithaca, New York. In fact, none of the students met "acceptable levels" for postural comfort in regard to computer workstation ergonomics, and 40% of youngsters used computer workstation ergonomics, and 40% of youngsters used computer workstations deemed detrimental to their postural health. The remaining subjects worked at stations with questionable ergonomics. In general, monitors and keyboards were positioned higher than recommended. Workstations also lacked wrist and palm rests. The study looked at 95 third-to-fifth grade students.

Computers in Schools 1998;14(3/4):55-63

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