## The Law, the AMA, and Partial-Birth Abortion

**To the Editor:** The 3 articles on late-term abortion[1-3] circled around the point on this issue: criminal laws against so-called partial-birth abortion go beyond banning any 1 abortion procedure or just "late-term" procedures. Even the authors define late term differently: Dr Gans Epner et al[1] define it as 27 weeks or more from the last menstrual period and Drs Sprang and Neerhof [2] as beyond 20 weeks from the last menstrual period. Neither the phrase "late term" nor "intact dilation and evacuation" is present or defined in any of the partial-birth abortion laws passed in 27 states or in the federal bill. Although antichoice activists have perpetuated the myth that partial-birth abortion laws apply to a limited set of circumstances, 17 courts across the nation have blocked partial-birth abortion laws as unconstitutional, finding such laws could, at any point in a pregnancy, outlaw an abortion performed using the most common and safest procedures.[4]

The American Medical Association's (AMA's) endorsement of the federal partial-birth abortion law gave credibility to the deception that partial-birth abortion legislation is a ban on the intact dilatation and extraction (D&X) procedure. Specific criteria define the intact D&X procedure, but the partial-birth abortion legislation passed by Congress and many states is intentionally vague and expands the scope of banned abortions (letter from Reps Charles T. Canady, Henry J. Hyde, Bob Inglis, Michael P. Flanagan, F. James Sensenbrenner, Jr, and Martin R. Hoke to the House of Representatives, March 18, 1996). Despite the assertion by Sprang and Neerhof that changes to the federal legislation made it "clear that only intact D&X would be banned," courts have determined[5] that states' versions of the exact same language are overly broad and worded so vaguely that physicians do not have fair notice of which procedures could subject them to prosecution.

Six of the 7 state laws containing the language proposed by the AMA have been enjoined where challenged in court.[5] In Nebraska, a federal judge permanently enjoined that state's law, writing, "[i]f the Nebraska legislature meant to ban only the D&X procedure, it did not accomplish its purpose."[6]

By endorsing the ill-conceived partial-birth abortion law, the AMA has endorsed government intrusion in a private medical decision and sanctioned a law that subjects physicians to criminal prosecution for providing necessary health care. By staking its credibility on a political ploy disguised as a medical issue, the AMA has become an accomplice to extremists who would eliminate women's right to choose abortion. Women's health is imperiled by partial-birth abortion legislation. It is a public health disaster that the AMA is part of the problem.

**Janet Benshoof, JD**
**The Center for Reproductive Law and Policy**
**New York, NY**

**1.** Gans Epner JE, Jonas HS, Seckinger DL. Late-term abortion. *JAMA*. 1998;280:724-729.
**2.** Sprang ML, Neerhof MG. Rationale for banning abortions late in pregnancy. *JAMA*. 1998;280:744-747.
**3.** Grimes DA. The continuing need for late abortions. *JAMA*. 1998;280:747-750.
**4.** *Hope Clinic v Ryan* 995 F Supp 847 (ND Ill 1998).
**5.** *Wryest v Lance*, No. 98-0117-S-BLEW (D Idaho, 1998); *Planned Parenthood of Greater Iowa Inc v Miller*, 1 F Supp 2d 958 (SD Iowa 1998); *Embanks v Stencil* No. 3-98-CV-383-H (WD Ky 1998); *Carport v Stenberg*, 972 F Supp 507 (D Neb 1997); *Planned Parenthood of Central New Jersey v Verniero*, No. 97-6170, 1998 US Dist. LEXIS 14319 (D NJ, 1997); *Brancazio v Underwood* No. 2:98-0495 (SD WVa, 1998).
**6.** *Carhart v Stenberg*, 11 F Supp 2d 1099, 1128 (D Neb 1997).

**To the Editor:** The articles on "late-term abortion" were a disappointment.[1-3] Each article has a different definition of "late term," and 2[1,2] of the 3 articles were fraught with scientific inaccuracies, inflammatory language, and a misuse of vague terms, all of which contribute to delaying optimal care and to the possible criminalization of all abortion procedures.

Although the phrases "late-term abortion" and "partial-birth abortion" imply an abortion performed close to full-term, the reality is that bans on partial-birth abortion criminalize abortion throughout pregnancy, including the first trimester. Dr Gans Epner and colleagues[1] miss the significance of the AMA's disastrous endorsement of the federal Partial-Birth Abortion Act with its severe penalties. While Gans Epner, a nonphysician, detailed the objections of the American College of Obstetricians and Gynecologists (ACOG) to legislative medical decision-making, she failed to mention the AMA's final position of support for HR 1122 despite ACOG's objections.[4] The AMA should rescind its endorsement of a criminal ban on abortion immediately.

Drs Sprang and Neerhof[2] have written an article that is a treatise against abortion, not a scientific contribution. Many of the references are citations to lay or newspaper articles rather than to scientific literature. No references are made to any research work of the authors. In describing the risks of an intact D&X, the authors use a quote that refers to a full-term breech delivery from a chapter in *Williams Obstetrics*, a text with little reference to abortion.[5] The authors appear to have had little or no practical experience in the field of abortion.

Only Dr Grimes is a true expert and clinician, one who has made outstanding contributions to abortion literature. Grimes

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**Edited by** Margaret A. Winker, MD, Deputy Editor, and Phil B. Fontanarosa, MD, Interim Coeditor.

alone discusses the reasons why the availability of abortions is so important to women's health and affirms that questions of viability, abortion choice, and medical necessity should be decided by physicians rather than legislators.[3]

Finally, I wish that Dr Lundberg[6] had not written that he had never performed an abortion and believed he could not, adding "[a]bortion is killing—regardless of length or stage of gestation." Publishing his personal antiabortion opinion as an editorial statement further marginalizes abortion providers in the eyes of medical students. Lest we forget—legal, competent, medical professionals are all that stand between safe health care for women and the dark days of the back-alleys. We in medicine have a moral obligation to provide that health care.

**Jane E. Hodgson, MD, MS**
**St Paul, Minn**

**1.** Gans Epner JE, Jonas HS, Seckinger DL. Late-term abortion. *JAMA*. 1998;280:724-729.
**2.** Sprang ML, Neerhof MG. Rationale for banning abortions late in pregnancy. *JAMA*. 1998;280:744-747.
**3.** Grimes DA. The continuing need for late abortions. *JAMA*. 1998;280:747-750.
**4.** *Late-Term Pregnancy Termination Techniques*. Chicago, Ill: American Medical Association; 1997. Report 26 of the AMA Board of Trustees (A-97).
**5.** Cunningham FG, MacDonald PC, Gant NF, et al, eds. *Williams Obstetrics*. 20th ed. Stamford, Conn: Appleton & Lange; 1997:507.
**6.** Lundberg GD. *JAMA*, abortion, and editorial responsibility. *JAMA*. 1998;280:740.

**To the Editor:** For readers to understand how the AMA suddenly adopted a policy supporting the legislation against "partial-birth abortion" last year, they should know that the AMA hired the consulting firm Booz Allen & Hamilton.

Not surprisingly, the firm's report found that AMA leaders, bypassing proper decision-making processes, traded possible congressional support of more favorable Medicare payments for physicians in return for support of the abortion legislation then pending in Congress. The report[1] indicates that AMA lobbyists were no match for the congressional traders.

This problem is not a new one for AMA policy development, which is often driven by public relations staff or lobbyists. I wrote of a similar incident in 1969[2]:

In 1961 President Kennedy announced the appointment of a Presidential Panel on Mental Retardation. The charge to the Panel was such that opposition to it would have been akin to opposing motherhood. Much to the surprise of some of the AMA committees concerned with matters of mental retardation, the President of the AMA in a speech two weeks later announced AMA opposition to the Panel. On attempting to trace the origin of this position, the Director of Scientific Affairs of the AMA found that the speech had been scheduled on another subject. The speech writer in public relations, on the assumption that if a Democratic president is *for* something the AMA automatically is *against* it, wrote into the speech an opposing policy position. Out of such stuff are policies born!

**Julius B. Richmond, MD**
**Harvard Medical School**
**Boston, Mass**

**1.** Pear R. Inquiry criticizes AMA backing of abortion procedure ban. *New York Times*. December 4, 1998:A27.
**2.** Richmond JB. *Currents in American Medicine*. Cambridge, Mass: Harvard University Press; 1969:51.

**To the Editor:** In Drs Sprang and Neerhof's article[1] there are 2 points that must be challenged: that proposed federal legislation would ban only the intact D&X procedure, and that these authors are truly concerned about pregnant women.

The argument that federal legislation would make only the intact D&X illegal is fallacious. The wording of the proposed federal legislation about D&X is vague when compared with the ACOG definition of intact D&X; even a first-trimester vacuum aspiration procedure could be considered to be "deliberately and intentionally deliver[ing] into the vagina a living fetus . . . for the purpose of performing a procedure the physician knows will kill the fetus, and kill[ing] the fetus."[2] Because intact D&X can be described to the public in graphic, disturbing terms, it is being used as a Trojan horse; the desired outcome of the antichoice movement is the criminalization of all abortion procedures. If intact D&X were the only procedure felt to be abhorrent enough to be illegalized, why is the precise ACOG definition of intact D&X not used in the language of the legislation?

There is a pervasive sense in the Sprang and Neerhof article that the pregnant woman is a nonperson—that her existence is not as important as the life of the fetus she carries. The authors acknowledge that physicians have an ethical obligation "to care for both the woman and the unborn child," but we believe that they lose sight of the woman because of their obsession with the rights of her fetus. To argue that "maternal health factors . . . can almost always be accommodated without sacrificing the fetus and without compromising maternal well-being"[1] is naive. It is more common than many of us would like to believe that the pregnancy is the result of rape or incest. To demand, even to legislate, that a woman must endure such a pregnancy and to expect that she should survive it with her mental health intact shows an alarming amount of disregard for her.

Directly addressing the issues behind the need for elective late-term abortions—shame, poverty, ignorance, and denial—would be more effective in decreasing the numbers of such procedures performed in the United States.[3] As physicians, we must make a real effort to care for women, whether that entails helping them find ways out of abusive relationships, assisting them as they learn to nurture the children they already have, enabling them to affirm their own sexuality, or providing them with effective birth control. To ignore women and the personal and health crises they face will serve only to perpetuate the problems the antichoice movement claims to want to solve.

**Martha Lauster, BS**
**Scott J. Spear, MD**
**University of Wisconsin-Madison**

**1.** Sprang ML, Neerhof MG. Rationale for banning abortions late in pregnancy. *JAMA*. 1998;280:744-747.
**2.** Partial-Birth Abortion Ban Act of 1995. HR1833, US Congress.
**3.** Grimes DA. The continuing need for late abortions. *JAMA*. 1998;280:747-750.

**To the Editor:** Drs Sprang and Neerhof[1] assert that intact D&X places women "at increased risk of 2 additional complications" relative to other surgical midtrimester procedures, namely uterine rupture as a result of instrumentally performed inter-

nal podalic version and uterine or cervical laceration by scissors used to collapse the fetal skull.

As a second-year medical student, I recently observed a number of second-trimester D&X and dilatation and evacuation (D&E) procedures and feel compelled to comment. First, if the version is performed manually, as it was in all cases I observed, there is no introduction of instruments into the uterus for this step of the procedure and therefore, in fact, a reduced risk of perforation resulting from D&E. Second, the insertion of scissors into the fetal skull is not, as the authors state, a "blind" procedure; uterine or cervical laceration would require gross error on the part of the physician.

The cases I observed were approximately evenly divided between elective and "medically indicated" abortions. All were performed between 16 and 22 weeks of gestation. In the elective abortion cases, socioeconomic factors played a significant role in delaying the abortion beyond the 16th week. In the other cases, fetal abnormalities discovered through amniocentesis were the determining factors. Sprang and Neerhof use the term "capricious" to refer to pregnant women's decisions whether to terminate pregnancies. I take exception to that term and to the implication that women make this decision lightly. "Capricious" does not apply to the 16-year-old girl I met this summer, pregnant by a man who promised her he had had a vasectomy, nor to the 39-year-old woman, pregnant for the first time after 3 rounds of in vitro fertilization, who learned after 18 weeks of pregnancy that the fetus had a serious abnormality. The availability of second-trimester abortion is critical to women in situations like these, and protection of the woman's health and future fertility, not the sensibilities of physicians or legislators, ought to be the criteria for determining the method used.

**Emily J. Cronbach**
**Washington University School of Medicine**
**St Louis, Mo**

**1.** Sprang ML, Neerhof MG. Rationale for banning abortions late in pregnancy. *JAMA*. 1998;280:744-747.

**To the Editor:** Dr Lundberg considers late intact D&X abortion to be a religious issue.[1] Does he also consider female "circumcision" to be a "religious issue"? Was legislation that was passed to make it illegal to perform this latter "surgery" deplorable because it is a "religious issue"?

Both are social issues, the latter especially so. The message given to children in this country when we say that late-pregnancy fetuses can be killed in this manner is that life is not valuable—that someone else's life, especially a fetus', is dispensable if it interferes with what we want to do.

If we disregard the fetus because the fetus' human life must not be considered as important as the mother's quality of life, we should consider that this procedure risks women's future fertility via potential infection (resulting from a 3-day procedure of progressive dilation of the cervix), massive bleeding, and incompetent cervix.[2] Women are not being advised about these complications or encouraged to seek a second opinion for alternatives.[2]

The authors of 2 of the *JAMA* articles on late-term abortions[3,4] repeatedly refer to statistical data compiled in 1992. Details of the "partial-birth abortion" procedure were first presented at the Fall 1992 National Abortion Federation meeting. Data about that procedure were not included in those statistics. The authors imply, using old and suspect data, that the number of abortions performed after 26 weeks is fewer than 600.[3] One newspaper account describes a center that performs approximately 1500 D&X procedures—also known as intact D&Es—per year in the late second trimester.[5]

Using current information, Drs Sprang and Neerhof[6] gave an accurate description of the rationale for banning abortions late in pregnancy, including a cogent review of the D&X procedure, which the other 2 articles deliberately seemed to avoid.

**Julia M. Stanley, MD**
**Jacksonville, Fla**

**1.** Lundberg GD. *JAMA*, abortion, and editorial responsibility. *JAMA*. 1998;280:740.
**2.** Gianelli D. Abortion rights leader urges end to "half truths." *American Medical News*. March 3, 1997:34.
**3.** Gans Epner JE, Jonas HS, Seckinger DL. Late-term abortion. *JAMA*. 1998;280:724-729.
**4.** Grimes DA. The continuing need for late abortions. *JAMA*. 1998;280:747-750.
**5.** Padawer R. The facts on partial-birth abortion. *The Record*. September 15, 1996.
**6.** Sprang ML, Neerhof MG. Rationale for banning abortions late in pregnancy. *JAMA*. 1998;280:744-747.

**To the Editor:** I thank Dr Lundberg for his candor in his editorial[1] regarding abortion. I totally agree that this is a highly volatile and divisive subject that needs to be discussed and debated. However, I believe he has painted himself into an ethical corner by rationalizing on this issue.

Lundberg states, "[a]bortion is killing—regardless of length or stage of gestation." I think any sane and honest person would agree. But if this is true, then substituting the word "killing" for the word "abortion" in the rest of the paragraph, it reads:

Americans are constitutionally guaranteed religious freedom. This editor considers [killing] to be a religious issue—a decision to be reached by the pregnant woman, after consultation with the father (if possible), members of her family, perhaps a religious adviser, and the woman's physician. I believe that one woman's [killing] is not the business of police, lawyers, courts, the US Department of Health and Human Services, the Congress of the United States, various state legislatures, or anybody else except the individuals named above. This editor has not performed a [killing] and believes that he could not. [Killing] is killing—regardless of length or state of gestation. However, as a practical matter, this editor recognizes that [killing] is considered necessary by many people on a situational basis and that many [killings] will be done, often unrelated to what beliefs may have been held previously, by the participants and regardless of any laws.

Such, I believe, are the necessary absurdities when trying to allow a mother to kill the fetus within and yet, on all other fronts, trying to protect the sick, powerless, innocent, and frail.

**Andrew E. Floren, MD, MPH**
**McLeod Regional Medical Center**
**Florence, SC**

**1.** Lundberg GD. *JAMA*, abortion, and editorial responsibility. *JAMA*. 1998;280:740.

**In Reply:** The term "partial-birth abortion" was carefully crafted to inflame, not to illuminate. It is not a medical term. As observed by Annas,[1] "...what makes the term 'partial-birth abortion' politically powerful is its inaccurate conflation of two polar-opposite results of pregnancy, birth and abortion." Hence, physicians should not use the phrase.

Dr Stanley's letter compares second-trimester abortion with female genital mutilation. However, second-trimester abortion, a medical procedure for which health benefits are well documented,[2] is constitutionally protected under *Roe v Wade*. In contrast, female genital mutilation is not a medical procedure, confers no health benefits, and has no such protection.[1] Stanley implies that second-trimester instrumental abortion causes "massive bleeding, and incompetent cervix." To support these claims, she cites a newspaper instead of scientific literature. Stanley also implies that I intentionally used old data from 1992. When I wrote my Controversies article, 1992 was the most recent year for which these published data were available.[3] More recent data[4] have confirmed what I reported.

As noted by Ms Benshoof and Dr Hodgson, AMA endorsement of the federal partial-birth abortion ban fueled an epidemic of copycat legislation. In state after state (most recently in Iowa[5]), this legislation has been enjoined because it is unconstitutionally vague. It is bad law.

Regardless of their views on abortion, physicians should oppose the AMA's support of the proposed federal abortion ban (HR 1122) for 2 reasons: process and outcome. First, as confirmed by the Booz Allen & Hamilton independent audit, this decision, like the Sunbeam endorsement, bypassed usual AMA deliberative procedures. Indeed, "[t]he decision to support a ban on the abortion procedure 'contradicted long-standing AMA policy' and deviated from positions reaffirmed by the House of Delegates just 5 months earlier, in December 1996."[6]

Second, the AMA has now endorsed congressional regulation of the practice of medicine. States have the authority to protect the health and safety of the public; the federal government does not. The AMA's action implies that medical practice, like trucking, falls under "interstate commerce" and thus is subject to congressional regulation. As observed by a prominent health lawyer,[1] "[t]his is a stunning concession." Endorsing congressional intrusion into medical practice is a far more dangerous precedent than is endorsing Sunbeam heating pads.

Since the AMA now supports congressional regulation of one medical procedure, it follows that Congress may seek to restrict others. What medical practice will the AMA offer up next? Opening the door to congressional regulation now threatens the autonomous medical practice of all physicians, AMA members and nonmembers alike. The AMA should quickly rescind its support of the ban and formally apologize to physicians and to the nation.

**David A. Grimes, MD**
**Chapel Hill, NC**

**1.** Annas GJ. Partial-birth abortion, Congress, and the Constitution. *N Engl J Med*. 1998;339:279-283.
**2.** Cates W Jr. Legal abortion: the public health record. *Science*. 1982;215:1586-1590.
**3.** Koonin LM, Smith JC, Ramick M, Green CA. Abortion surveillance—United States, 1992. *MMWR CDC Surveill Summ*. 1996;45:1-36.
**4.** Koonin LM, Smith JC, Ramick M, Strauss LT. Abortion surveillance—United States, 1995. *MMWR CDC Surveill Summ*. 1998;47:31-40.
**5.** *Niebyl v Miller*, CIV-4-98-CV-90149 (SD Iowa 1998).
**6.** Pear R. Inquiry criticizes A.M.A. backing of abortion procedure ban. *The New York Times*. December 4, 1998:A27.

**In Reply:** Legislation intended to ban intact D&X (HR 1122)[1] has been criticized as being vague despite the AMA's efforts to clarify and improve it. The legislative language used in the bill conveys the intent and purpose of the legislation, namely to specifically prohibit intact D&X. Furthermore, when reviewing the legislative history, Congress went into great detail to describe exactly what is meant by intact D&X, and to distinguish it from other abortive procedures. The legislative intent would be obvious to any court that wished to review the presentation made as Congress passed that bill. The intent of the legislation is *not* to limit access to abortion, but to prohibit a specific procedure. In fact, the number of abortions performed will likely not be affected by the ban because alternative procedures are available. Reasonable physicians clearly are capable of understanding the act's intention. A ban on intact D&X would not limit a woman's opportunity to terminate her pregnancy or place an undue burden on her; it simply spares her from an inappropriate procedure.

The safety of intact D&X has never been evaluated objectively. In addition to the risks attendant to any surgical midtrimester termination,[2,3] there is a risk of uterine rupture associated with internal podalic version. Whether this is accomplished instrumentally or manually is beside the point. The degree of risk and how this risk compares with that associated with internal podalic version at term has not been evaluated. These patients also are at risk of iatrogenic laceration when the fetal skull is incised (usually with scissors) while it is in the vaginal vault.[4] If the operator is not "blinded" for this part of the procedure, then the fetal head must, by necessity, be fully delivered before this is accomplished. One would hope that is not the case.

It is unfortunate that anyone who dares question the propriety of an abortive procedure is so readily described as having a "preoccupation with the fetus."[5] As we demonstrated in our article, intact D&X is a procedure that should be banned—from a fetal perspective, it is inhumane; because of maternal concerns, it is needlessly risky, and for larger, ethical reasons, it is dangerously close to infanticide.[4] The failure of the medical community to adequately address fetal and ethical concerns has led to a failure to scrutinize procedures such as intact D&X or to give consideration to a gestational age limit for termination of pregnancy. Ultimately, this failure leads to the public perception of a need for legislation regarding these issues, as it has in the case of intact D&X.

**M. LeRoy Sprang, MD**
**Mark G. Neerhof, DO**
**Northwestern University Medical School**
**Chicago, Ill**

**1.** *Late-Term Pregnancy Termination Techniques*. Chicago, Ill: American Medical Association; 1997. Report 26 of the AMA Board of Trustees (A-97).

**2.** Lawson HW, Frye A, Atrash HK, Smith JC, Shulman HB, Ramick M. Abortion mortality, United States, 1972 through 1987. *Am J Obstet Gynecol*. 1994;171:1365-1372.
**3.** Stubblefield PJ. Pregnancy termination. In: Gabbe SG, Niebyl JR, Simpsons JL, eds. *Obstetrics, Normal and Problem Pregnancies*. 3rd ed. New York, NY: Churchill Livingstone; 1996:1243-1278.
**4.** Sprang ML, Neerhof MG. Rationale for banning abortions late in pregnancy. *JAMA*. 1998;280:744-747.
**5.** Grimes DA. The continuing need for late abortions. *JAMA*. 1998;280:747-750.

**In Reply:** According to Dr Hodgson, our article was 1 of the 2 articles on late-term abortion that was "fraught with scientific inaccuracies, inflammatory language, and a misuse of vague terms." However, because Hodgson fails to specify which terms were vague and where she found scientific lapses or inflammatory language, it is difficult to address her criticism directly.

In our report the other authors and I were careful to define the terms used, including induced abortion, early second-trimester abortion, late second-trimester abortion, late-term or third-trimester abortion, weeks of gestation, viability, menstrual extraction, D&E, and, perhaps most significantly, intact D&X. I agree with Hodgson that the term "partial-birth abortion" fails to specify the timing of or procedure used to induce abortion. We noted that "clarification of medical procedures is important because some of the procedures used to induce abortion prior to viability are identical or similar to post-viability procedures." For this reason we adopted the definition of D&X used by ACOG.

As to scientific inaccuracies, Hodgson may remember that Dr Jonas, one of the coauthors, is a former president of ACOG and was actively involved in writing the report. Furthermore, the manuscript received unusually intensive scrutiny. A lengthier version was reviewed for accuracy by representatives from ACOG, the American Academy of Family Physicians, the American Academy of Pediatrics, gynecologists from 2 state medical societies, the AMA Council on Scientific Affairs, and the AMA Board of Trustees. Like all *JAMA* manuscripts, it was subjected to rigorous peer review. We agree that Dr Grimes is "a true expert"; he wrote or coauthored 9 of the 50 references used.

I could not find inflammatory language in the report and have decided not to comment on this point. However, I wish to assure Hodgson that the authors were cognizant of the consequences and implications of the AMA's endorsement of HR 1122, which would involve the federal government in medical decision-making, criminalize a medical procedure, and disallow a procedure that may, in some cases, be the safest alternative for the woman. Endorsement of this legislation by the AMA also created a rift within the house of medicine. Dr Richmond succinctly summarizes some of the considerations that led to endorsement of the bill by the AMA Board of Trustees.

**Janet E. Gans Epner, PhD**
**Chicago, Ill**

These letters were shown to Dr Lundberg, who declined to reply.—ED.

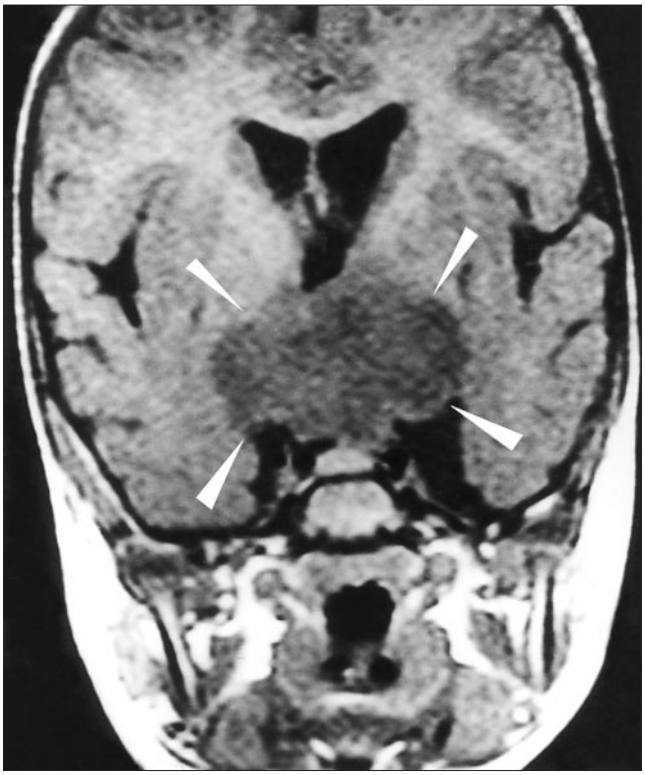
## RESEARCH LETTERS

### Inappropriate Secretion of Natriuretic Peptides in a Patient With a Cerebral Tumor

**To the Editor:** Increased plasma concentrations of atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP) may occur in myocardial infarction, renal insufficiency, and hypertension.[1] The increased secretion of atrial natriuretic peptides from the heart is probably a physiologic reaction to volume overload but also may be due to other mechanisms. We describe a 10-month-old girl with a cerebral tumor and excessive diuresis and natriuresis, thus fulfilling the diagnosis of a cerebral salt-wasting syndrome, as described by Cort[2] in the 1950s.

**Report of a Case.** A pilocytic astrocytoma (World Health Organization grade I) extending cranially from the third ventricle to the pituitary gland at its most caudal extent (3.2 × 2.5 × 4.5 cm) was removed by right frontotemporal craniotomy (FIGURE). During the first 4 postoperative days, the patient developed a transient left-sided hemiparesis, tonic-clonic seizures, increased urinary output (up to 10 mL/kg per hour), and excessive urinary excretion of sodium

**Figure.** Magnetic Resonance Tomography Demonstrating a Solid Suprasellar Middle-Line Brain Tumor (Pilocytic Astrocytoma)



The tumor (arrows) in a 10-month-old patient.

(22-47 mmol/kg per day [reference range, 2.3-3.8 mmol/kg per day]). Serum sodium (122-124 mmol/L), serum chloride (88-98 mmol/L), and serum osmolality (253-284 mmol/kg $H_2O$) levels were low. Plasma aldosterone and renin activity levels were almost undetectable. Serum potassium, calcium, and antidiuretic hormone levels; urinary osmolality; urinary losses of potassium, calcium, and glucose; and other routine renal laboratory parameters were within normal range. In the initial postoperative phase, the patient required up to 60 mmol of sodium per kilogram per day.

Eleven months after tumor resection, the girl could be fed by spoon, sit, and play. However, she was blind due to tumor masses surrounding the optic nerve, and sodium supplementation of between 11 and 15 mmol/kg per day was still required. At this time, ANP and BNP were 2.6- to 3.4-fold higher in the patient than in 9 age-matched controls (ANP [SD], 88 [7] ng/L vs 24 [9] ng/L in controls, $P<.001$; BNP [SD] 25 [4] vs 8 [4] ng/L in controls, $P<.001$). Aldosterone concentration (35 pmol/L) and renin activity (7 mU/L) were reduced but measurable. The ADH plasma concentration (2.04 pmol/L) and the ratio of urinary and serum osmolarity during a thirst test were normal (2-4 [normal, >2]).

**Comment.** The absence of any signs of renal disease other than electrolyte wasting indicated that the salt loss in this infant was most likely of nonrenal origin. The thirst test showing normal urinary concentration capacity in addition to normal serum osmolality, hyponatremia, and normal plasma concentration of ADH throughout the course of the disease were not characteristic of diabetes insipidus. Polyuria, excessive salt wasting, a lack of volume overload, a normal urinary concentration capacity, and normal ADH plasma concentrations excluded a syndrome of inappropriate ADH secretion.

Natriuretic peptides induce natriuresis through direct tubular effects or by inhibition of the renin-angiotensin-aldosterone system.[1] Thus, both excessive salt wasting and decreased renin and aldosterone levels can best be explained in this patient by an increase in the concentrations of ANP and BNP. Although primarily of cardiac origin, natriuretic peptides also have been localized to the brain by means of immunohistochemistry.[3]

Increased plasma concentrations of ANP and BNP also have been found in patients with subarachnoid hemorrhage.[4,5] The mechanism causing peptide release, however, is not clear. Damage to ANP- and BNP-containing cells and passage of these peptides across the blood-brain barrier or loss of regulation or hyperirritability around the tumor may contribute to peptide release.

These findings highlight the importance of considering inappropriate secretion of natriuretic peptides from the brain in cases of unexplained salt wasting. Because inappropriate secretion of natriuretic peptides may result in hypovolemia, in contrast with diseases with volume overload, this distinction has important clinical implications.

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## Liver Enzyme Elevations in Patients Treated With Traditional Chinese Medicine

**To the Editor:** Traditional Chinese herbs have widespread use outside of China by both emigrants and an increasing number of Western patients. Typically, 3 to 15 different drugs are combined in a prescription based on the patient's individual symptoms. While Chinese herbal remedies appear to be relatively safe, they are not free of risks, and a number of severe adverse events, including death, have been reported.[1] Although hepatotoxic effects associated with Chinese drugs have been described,[2,3] it is unclear how often such adverse effects occur.

**Methods.** We investigated the frequency of clinically relevant elevations of liver enzymes in 1507 consecutive patients treated with traditional Chinese herbs at the Hospital for Traditional Chinese Medicine in southeast Germany. Seventy-two percent of patients were female, the mean (SD) age was 52 (14) years, two thirds experienced chronic pain, and the mean (SD) hospital stay was 27 [5] days. Blood samples were obtained at admission and during the last 3 days before discharge. The enzymes measured routinely were aspartate aminotransferase (AST), alanine aminotransferase (ALT), and γ-glutamyltransferase. A liver enzyme elevation was defined as any elevation over the normal range in patients with normal values at admission, or any elevation over admission values in patients with elevated values at admission. The main outcome measure was the proportion of patients with a more than 2-fold elevation (compared with upper limit of normal values or elevated admission values) of ALT.

**Results.** The TABLE summarizes the number of patients with elevated values for the 3 enzymes monitored. A more than 2-fold elevation of ALT values was observed in 14 (0.9%)

**Table.** Transaminase Values of Patients at Discharge*

| Enzyme | Normal | ≤1.25-Fold Elevation | 1.26- to 2-Fold Elevation | >2-Fold Elevation |
|---|---|---|---|---|
| | Patients With Normal Transaminase Levels at Admission | | | |
| ALT (n = 1330) | 1249 (93.9) | 42 (3.1) | 26 (2.0) | 13 (1.0) |
| AST (n = 1413) | 1392 (98.5) | 10 (0.7) | 11 (0.8) | 0 |
| γ-GT (n = 1248) | 1210 (96.9) | 17 (1.4) | 21 (1.7) | 0 |
| | Patients With Elevated Transaminase Levels at Admission | | | |
| | ≤Admission | ≤1.25-Fold of Admission | 1.26- to 2-Fold of Admission | >2-Fold of Admission |
| ALT (n = 120) | 89 (74.1) | 14 (11.6) | 16 (13.2) | 1 (1.1) |
| AST (n = 37) | 28 (75.7) | 4 (10.8) | 4 (10.8) | 1 (2.7) |
| γ-GT (n = 202) | 168 (83.1) | 20 (9.9) | 11 (5.5) | 3 (1.5) |

*ALT indicates alanine aminotransferase; AST, aspartate aminotransferase; and γ-GT, γ-glutamyltransferase. All data are presented as number (percentage) of patients.

of the 1507 patients consuming Chinese herbs. Two of the 14 patients also had temporary clinical symptoms (nausea and vomiting in 1 patient, itching in the second patient). Based on assessments by 2 independent physicians reviewing the records, a causal relationship of elevated ALT levels with Chinese drug therapy seemed possible in 13 patients and likely in 1. All patients were also receiving non–Chinese drug treatment, and, for some of the drugs used (for example, minocycline, mesalazine, and diclofenac), liver enzyme elevations are listed as possible adverse effects.[4] Thirteen patients had started these treatments with non–Chinese drugs before their hospital stays, and the dosages had been kept constant or diminished.

Follow-up values of ALT obtained within 8 weeks of hospital discharge were normal in 11 patients (6 of them had continued to take traditional Chinese drugs) and nearly normal in the remaining 3. In 5 patients there were indications of previous liver function abnormalities. The 14 patients with increased ALT levels had received a total of 115 different traditional Chinese drugs. When the frequency of drugs used in these cases was compared with the frequency in patients who had normal liver enzyme values, an increased risk was observed for formulas containing *Glycyrrhizae radix* and *Atractylodis macrocephalae rhizoma*.

**Comment.** In the population and setting studied, clinically relevant liver enzyme elevations occurred in about 1 in 100 patients treated with traditional Chinese drugs who also were receiving non–Chinese drug treatments. Based on these findings, we recommend that liver function be monitored in patients receiving traditional Chinese drugs, especially in patients with possible previous liver disease or risk of decreased liver function.

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## CORRECTIONS

**Incorrect Description:** In the Editorial entitled "Understanding Parkinson Disease" published in the January 27, 1999, issue of THE JOURNAL (1999;281:376-378), selegiline was identified as an MAO type A inhibitor rather than a type B inhibitor. On page 377, the sentence should have read, "Selegiline is a monoamine oxidase type B inhibitor that limits the formation of free radicals derived from oxidation of dopamine, and application of this agent in clinical trials suggests an effect on disease progression consistent with a neuroprotective action.[23-25]"

**Incorrect Byline and Affiliation:** In the Original Contribution entitled "Analysis of Missed Cases of Abusive Head Trauma," published in the February 17, 1999, issue of THE JOURNAL (1999;281:621-626), the third author's name was misspelled in the byline on page 621. It should have read "Arlene Ritzen, MD, JD." Additionally, in the author affiliations on the same page, Dr Ritzen's affiliation should have read "Department of Pediatrics, Oregon Health Sciences University, Portland."

**Author Omitted:** In the Reply Letter entitled "Talking With Patients About Screening for Prostate Cancer" published in the January 13, 1999, issue of THE JOURNAL (1999;281:133), the first author was inadvertently omitted. Scott Stern, MD, should have been listed above Wendy Levinson, MD. Both authors are affiliated with the University of Chicago.