"Remembrance and reflection"

Philip F. Hall, MD, BScMed

Editorial

Éditorial

Dr. Hall is Clinical Director, Woman and Child Program, St. Boniface General Hospital, and Professor, Department of Obstetrics, Gynaecology and Reproductive Sciences, Faculty of Medicine, University of Manitoba, Winnipeg, Man.

Can Med Assoc J 1998;158:335-6

See related article page 307

Say first, of God above, or Man below,
What can we reason, but from what we know?

In human works, tho' labour'd on with pain,
A thousand movements scarce one purpose gain

Alexander Pope, *An Essay on Man*,
Epistle I: 17-18, 53-54

What physician among us would willingly, knowingly and in good conscience order a test whose results would be irrelevant or meaningless? In this issue (page 307), Dr. Elisabeth Thompson and colleagues report that over half of the prenatal ultrasound examinations carried out in a regional hospital in western Labrador in 1994 were inappropriate. How can that have occurred despite the capability and good intentions of those who ordered the procedures?

In 1993 the Royal Commission for New Reproductive Technologies identified massive increases in the number and cost of prenatal ultrasound examinations in Canada through the preceding decade and suggested that "It is essential to control this rapid proliferation . . . and . . . determine whether the substantial funds now being devoted to it are justified."[1] Guidelines for prenatal ultrasound screening were published in 1994 by the Canadian Task Force on the Periodic Health Examination,[2] the same year analysed in the Labrador study. However, as is reflected in Thompson and colleagues' bibliography, recommendations for the appropriate application of prenatal ultrasonography had been available for at least a decade.[3,4]

It is not my purpose to review the strength of the evidence for prenatal ultrasound use, whether routine or selective; this has been done superbly elsewhere.[5] However, as T.S. Eliot mused, "Where is the wisdom we have lost in knowledge? / Where is the knowledge we have lost in information?"[6] In the hierarchy of medical evidence, tests and imaging results are at the top, clinical examination in the middle and the patient's perspective at the bottom.[7] Has the information provided by an ultrasound report supplanted wisdom?

There can be little doubt that technology has a certain mystique as well as prestige, and that as a society we are prone to seek technologic solutions to our problems, medical or otherwise.[8] But if technology is used without an understanding of its implications, it tends, as Edward Tenner has written, to "bite back." Before the 19th century, tools were extensions of the body and mind of their user. As industrialization progressed — and, with it, the complication of its instruments — the need to employ tools was surpassed by the need for tool management. But whether tools are antique or postmodern, poor results are likely if they are applied indiscriminately, without wisdom and skill. According to Tenner, "The problem of today's medicine . . . is that contrary to our expectation of technology, the more advanced it becomes, the more it demands in vigilance and craftsmanship."[9] In controlling the simpler problems and even catastrophes of the past, we have exposed ourselves to dilemmas that are more chronic, elusive and difficult. And, by definition, chronic problems are those that we manage, whether or not they are solved.

It is paradoxical that, in an era in which Canadians are healthier than ever before, we are possessed by the phantoms of risk. "High risk" thinking and labelling

pervade contemporary obstetric care, adding — dare it be suggested — mystique and prestige, despite inconsistent definitions of the term and a lack of evidence that risk-scoring is valid, reliable, effective or even safe.[10] Perhaps rural practitioners and their patients are particularly unsettled by pregnancy's intrinsic uncertainty, and by the unreliability of prenatal risk assessment. Perhaps such discomfort is aggravated by the deteriorating medicolegal circumstances of our times. But inappropriate selection and unnecessary repetition — ironically, implying mistrust — of diagnostic tests are not just rural problems. Such phenomena, as the Labrador study demonstrates, suggest not only an unjustified faith in ultrasound as a panacea for prenatal uncertainty, but also a lack of (to appeal again to Pope's *Essay*) "remembrance and reflection" about the method's appropriate use and its limitations.

Oscar Wilde suggested that we live in an age in which unnecessary things are our only necessities. It could be that some unnecessary and inappropriate ultrasound examinations are done in response to patients' expectations. Human "needs" have no limit, and technology's intrusiveness subsists on them.[11] But if prenatal ultrasound is allowed to burgeon unrestrained, without attention to whether and when it will be allowed, false-positive and false-negative results will have the potential to proliferate. Such mistakes may lead to more waste of resources, anxiety about problems that do not exist, ignorance and masking of problems that do, and specific, potentially lethal errors such as inducing the birth of a premature infant whose gestational age has been miscalculated. In another paradox, the "revenge effect"[12] of such blunders may be a lawsuit.

It is relevant to revisit the prescient words of the late Ian Donald, who was among the first to apply a technology whose roots were in warfare and shipping to Glaswegian obstetric patients in the 1950s:

> Perhaps the time has now come to stand and stare and to take stock of where we are going and where we are most likely to settle, bearing in mind that sonar, like radiology and biochemistry, must never lose its subservience to the medical art and the paramount importance to the patient who is the clinician's chief concern. Viewed with this sense of proportion, sonar comes as a commodity, only . . . out of control it can be an obsession. Sonar is not a new medical religion . . . nor an end in itself.[13]

To the extent that they are valid, read and understood, clinical practice guidelines are unlikely to make a difference to the public good unless they are incorporated into tool management. The inappropriate use of prenatal ultrasound is a chronic problem that will continue unless appropriate guidelines are used to determine what will and what will not be carried out, regardless of what is requested. In the absence of such vigilance, meaningless echoes will result, and what could have been effective and safe may become wasteful and dangerous. As opposed to "high risk" phantoms, these are high-risk realities.

This editorial is dedicated to the memory of Dr. Ian Donald.

References

1. *Proceed with care — final report of the Royal Commission on New Reproductive Technologies*, vol 2, 1993. Ottawa: The Commission; 1993. p. 814-8.

2. Anderson G. Routine prenatal ultrasound screening. In: Canadian Task Force on the Periodic Health Examination. *The Canadian guide to clinical preventive health care*. Ottawa: Health Canada; 1994. Cat no H21-117/1994E. p. 3-14.

3. The use of diagnostic ultrasound imaging during pregnancy [consensus statement]. *JAMA* 1984;252:669-72.

4. Campbell S, Warsof SL, Little D, Cooper DJ. Routine ultrasound screening for the prediction of gestational age. *Obstet Gynecol* 1985;65:613-20.

5. Green CJ, Hadorn D, Bassett K, Kazanjian A, et al. *Routine ultrasound imaging in pregnancy: How evidence-based are the guidelines?*? Office of Health Technology Assessment discussion paper series no 96:2D. Vancouver: Centre for Health Services and Policy Research, University of British Columbia; 1996.

6. Eliot TS. Choruses from "The Rock," I:15-16. In: *Collected Poems: 1909–1962*. London: Faber and Faber; 1974. p. 189.

7. Reisner SJ. *Medicine and the reign of technology*. Cambridge (UK): Cambridge University Press; 1981. p. 41.

8. Taylor C. *The malaise of modernity*. CBC Massey Lectures series. Concord (ON): Anansi Press; 1991. p 6.

9. Tenner E. *Why things bite back: technology and the revenge of unintended consequences*. New York: Vintage Books; 1997. p 53.

10. Hall PF. Rethinking risk. *Can Fam Physician* 1994;40:1239-44.

11. Boorstin DJ. *Cleopatra's nose: essays on the unexpected*. Toronto: Random House; 1995. p. 166-7.

12. Tenner E. *Why things bite back: technology and the revenge of unintended consequences*. New York: Vintage Books; 1997. p 5-7.

13. Donald I. Sonar — its present status in medicine. In: *Progress in medical ultrasound*. Vol 1. Amsterdam: Exerpta Medica; 1980. p. 1.

Reprint requests to: *Dr. Philip F. Hall, Woman and Child Program, St. Boniface General Hospital, 409 Taché Ave., Winnipeg MB R2H 2A6; fax 204 233-1751; phall@mail.sbgh.mb.ca*