

Editorial

Environmental bias in the practice of orthopedics

In the Correspondence section of this issue of *Acta Orthopaedica Scandinavica*, school screening for scoliosis as reported from Great Britain by Ferris et al. (1988) is vehemently criticized by an American, Dr. Eugene E. Bleck, and defended by Dr. Barry Ferris and another European, Dr. Stig Willner. The exchange unveils surprisingly wide differences in opinion, ranging from the mere legality of screening children in the schools to the value of early detection of scoliosis. The basis for the clash is explained by Dr. Alf Nachemson as ideologic: the so-called socialized medicine practiced in Great Britain and Scandinavia permits a group approach to health problems labeled borderline immoral and inefficient by Dr. Bleck (1987).

Nachemson's explanation of the scoliosis controversy can probably be applied to a wide variety of orthopedic problems where differences in diagnostic and therapeutic routines defy a rational interpretation. Such differences may merely reflect that the practice of medicine is but one expression of the cultural environment. In China, modern orthopedics is practiced along with traditional medicine including acupuncture, and in some Arabic countries children may still receive treatment advocated by Avicenna a thousand years ago. Domestic customs in Japan require knee surgery to provide mobility deemed unrealistic in the West. However, few if any of the competing methods of treatment in modern orthopedics can be traced to ancient cultural traits.

The main extra-medical determinants of the practice of medicine are organization, remuneration, and insurance—all three have greatly influenced the development of orthopedics.

In Sweden, 95 percent of all the fresh intracapsular hip fractures are treated by internal fixation (Bauer 1985, Strömqvist and Nilsson 1988), whereas in other countries, many orthopedic surgeons prefer a primary arthroplasty in patients over aged 70 years. The reasons for this difference in the treatment of such a common condition are not easy to identify. Perhaps they can be traced to the domination in their respective spheres of influence by Sven Johansson (1934), the Swedish pioneer of hip nailing vs., in the United States, Moore (1957), who provided a successful arthroplasty for the "unsolved" fracture (Dickson 1953). In Sweden, biplane fluoroscopy facilitating fracture reduction became standard relatively early. In the United States even unavoidable, but unpredictable, complications after primary nailing may initiate a malpractice suit against the surgeon. Such factors provide a strong bias in the search for the optimal mixture of primary nailing and arthroplasty.

Still another example can be quoted. The criteria for operating on a patient with sciatica due to a herniated lumbar disc are relatively well defined and have been proven effective by many clinical studies, some also randomized. Yet, the annual rates of such surgery range from about 600 per million and year in the United States, 300 in Finland, 200 in Sweden, to 100 in Great Britain. Thus, environmental bias in the practice of disc surgery may amount to a factor of about 3 to 6.

In a report on locomotor system sarcoma by Rydholm et al. (1986), the authors explained why the tumors, when referred to the oncology center, were smaller compared with those reported from the United States: "Different tumor sizes in Sweden and the United States may reflect differences in the health-care systems of the two countries." Such an environment-related explanation applies also to the difference in outcome of two series of septic arthritis. Kelly et al. (1970) reported that 12 of 78 patients at the Mayo Clinic had died of their infection, and only 12 had no joint destruction at follow-up. By contrast, Lidgren and Lindberg (1973) found no deaths in a prospective series of 28 patients, and 11 had no joint impairment; they concluded that their results did not mean a better or different therapy, but could probably be attributed to the organization of the health service in Malmö.

There may well be a common denominator to the tumor and arthritis issues: the Swedish populations at risk lived relatively close to the specialized treatment centers. This explanation of the differences noted is strengthened by the

observation that early diagnosis of congenital dislocation of the hip (CDH) in Sweden is three times more efficient in the closely populated South than in the North (Palmén 1984). However, in Norway the pattern of late diagnosis of CDH is probably related to attitudes added to demographic factors (Danielsson and Nilsson 1984).

In the final analysis, simple explanations of differences in diagnostic and therapeutic results rarely suffice; the effects of regional tradition and local schools of thought are still strong. Differences in the choice of method for arthroplasty for gonarthrosis in Sweden is clearly based neither on scientific or demographic data nor on organizational restrictions: some departments of orthopedics choose only unicompartamental devices and others only bi(tri)compartamental devices...

In the Western World, communication of orthopedic news is highly efficient. The annual meeting of the American Academy of Orthopaedic Surgeons is attended by colleagues from all over the world, and the electronic literature retrieval services cover some 50 orthopedic journals. Such a lively exchange of opinions clearly has the overall effect of obviating differences in diagnostic and therapeutic techniques. However, the reader of the orthopedic literature may often be misled by the lack of clarification of environmental factors in the specification of the cases analyzed. *Acta Orthopaedica Scandinavica* supports improved reporting of cases by our insistence on full documentation of even seemingly unimportant details (Editorial 1988).

The strong winds of politics and organization of medical care create a turbulent sea in which the individual orthopedic surgeon is supposed to navigate by the lights of science and experience. The scoliosis controversy is but one example of how difficult it may be to steer clear of both Scylla and Charybdis. *Acta Orthopaedica Scandinavica* welcomes comments on similar problems.

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