

Editorial

Multicenter investigations

The role of orthopedic journals

It is generally agreed that multicenter investigations have an important role in the development and evaluation of clinical methodology. For example, the introduction of new drugs on the market is usually preceded by carefully planned and executed prospective multicenter studies involving control groups. For a number of historical and practical reasons, surgical methods are rarely assessed by such techniques: "Double blind" certainly does not apply to orthopedics! Thus, the vast majority of hundreds of arthroplasty designs have been manufactured and sold on the basis of merely oral presentations or articles published by their originators. The development of surgery for ligamentous injuries of the knee or arthroplasties for arthrosis or rheumatoid arthritis of the knee during the last 20 years has occurred by the rise and fall of methods and designs which have left hardly any scientific trace.

In terms of clinical documentation and reports on failures, the situation in orthopedics is unsatisfactory when compared with that of internal medicine: viz., the use of drugs rests on rigid product specification, animal experiments, and clinical trials before release for general use gains approval. Those who have tried to organize multicenter investigations of orthopedic methods are fully aware that such projects are frustrating, time consuming, and expensive. Nevertheless, we also know that such investigations, when eventually performed and reported, may have profound effects on clinical practice and attitudes. Clearly, orthopedics will have to develop a more efficient organization and strategy to improve its position. The obstacles to doing this are largely again a matter of attitude. Notably, more than 50 years ago, the American Orthopaedic Association was conducting a large multicenter study of hip fractures. Today, we certainly have more money than during the Great Depression, and we have computers.

In recent years, several important multicenter investigation have involved Swedish orthopedics: e.g., studies of gentamicin-containing bone cement for hip arthroplasty (Josefsson 1981), combinations of asepsis and antisepsis for prevention of postoperative infections (Lidwell et al. 1987), and national projects on reoperations of total hip (Ahnfelt 1986) and knee arthroplasties (Bauer et al. 1987), organized by the Swedish Orthopedic Society. Similar projects have been initiated for evaluating the treatment of hip fractures and amputations, sponsored by the Swedish Medical Research Council.

True multicenter studies are burdened by the fact that most of the participants are "nonenthusiasts" who loathe the protocols, miss the deadlines, and report incomplete data; only the subtle blackmail of social control keeps them from not dropping out. Eventually, the studies are successfully completed because "enthusiasts" go to the record rooms to fill in the missing protocols.

Another way of collating data from many different centers is to cull from the literature, i.e., from the products of enthusiasts. But the problem here is that it is rarely possible to obtain a full account of what the investigators actually observed and what they did. The data are usually reported in groups rather than individually, and the definitions of variables reported do not always conform to generally accepted standards. Also, most readers certainly do not wish to relive the ordeals of the enthusiasts; they go to the literature to obtain an integrated interpretation of the original observations, and they read review articles to obtain opinions of such digested versions.

However, many of our readers, present and future, are assiduous investigators who focus considerable attention on specific problems for which their need for more data can never be exhausted. Thus, it is for their benefit that *Acta Orthopaedica Scandinavica* has encouraged contributors to publish as much as possible of their original observations, and particularly in the *Acta* supplements. For

example, as early as 25 years ago, Edwards (1964) published all of his observations in 492 cases of tibial fracture; and these data proved highly useful as a control group in Önnarfält's (1978) further development of tibial fracture treatment. During recent years, *Acta* has advocated this technique of reporting original data; and accordingly, the present issue contains a report on reconstruction of the anterior cruciate ligament with all the observations in 89 patients followed for 5 years (Sandberg and Balkfors 1988). In two pages in their article, 9,000 observations are available to those interested in that specific problem. The actual data density amounts to 28 characters per square centimeter, a standard comparable to that used by the United States Bureau of the Census in their publication of data important in world economics (Tufté 1985). Several recent issues of *Acta Orthopaedica Scandinavica* contain similar, though less ambitious tables. When reconstituted, the coded data provide surprisingly clear pictures of what the investigators actually observed: as an example, the article by Sandberg and Balkfors ends with a transcription of their Case 66.

In a manuscript from one of our contributors, the discussion section ended with the complaint that he could not compare his data with published data, because previous authors had lumped their patients in groups so that it was impossible to obtain enough information concerning a specific important parameter. In the editorial process, he became aware that he had committed the same error, and he then submitted a general table containing all of his observations. Hopefully, his table will provide the basis for a multicenter study of his specific problem.

Acta Orthopaedica Scandinavica will continue to encourage our contributors to publish their data in "unadulterated" form. Obviously, our ambitions will bear fruit only when there is a consensus concerning staging and grading of clinical observations. It is for this reason that we have published a review of methods for evaluating knee function (Tegner et al. 1988) in the same issue as the results of ligamentous reconstruction.

Index Medicus currently lists 34 orthopedic journals that collectively provide our profession with a tight communication network. We must now more efficiently avail ourselves of this international forum to improve the scientific basis for diagnosis and treatment of our patients. Why do some advocate primary arthroplasty for fracture of the femoral neck and others internal fixation? Why are there such large differences in the use of unicompartament arthroplasty for arthrosis of the knee? We need multicenter investigations that address these embarrassing questions.

Acta Orthopaedica Scandinavica invites publication of the full data submitted by investigators who wish to initiate multicenter discussions of problems where present practice may reflect habit and dogma rather than scientifically valid comparisons of methodology.

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