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The aging spine

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It is the merit of the “Bone and Joint Decade” to draw our attention with increased intensity to the problem of the changes related to aging of our musculoskeletal system and the associated socioeconomic implications. In view of the increasing age of the worldwide population the impact seems to be tremendous. I congratulate the editors of the present supplement of the *European Spine Journal* in picking up this interesting topic and engaging opinion leaders to contribute their knowledge in this supplement. The various contributions cover some of the important problems, which are included in the vast spectrum of aging spine: osteoporosis, spinal stenosis, and tumors of the spine.

As an introduction Benoist presents an overview of the important issue of the natural history of the aging spine, pointing out that this process is a progressive change ending up in a collapse of the system, a fact that has implications for treatment strategy and disease management.

Some of the authors (Bono et al., Gunzburg et al., Ferguson et al.) emphasize with their contributions the basic changes and problems that develop during a lifetime in our spine. These statements illustrate the complexity of the construction and the variety of responses that the spine is able to provide.

The medical treatment of the aging spine deserves special attention

in view of the generally reduced health situation of the involved patients. The important role of the biphosphonates in the treatment, and perhaps even more so in the prevention, of osteoporosis is emphasized by Fleisch.

Any successful surgical treatment starts with accurate diagnostic procedures. The profound knowledge and sophisticated diagnostic techniques of the complex pathoanatomical changes in the spine including the involvement of the neural structures (contribution by Dvorak) often go beyond the capacity of a spine surgeon. Teamwork and adequate communication is mandatory.

The variety of different surgical approaches and options demonstrates the difficulty of the surgery in the aging spine. Reduced general health status, life expectancy with or without cancer that occurs more frequently in elderly persons, and expectations of the patient and social environment are nonsurgical factors to be considered before embarking upon surgery. The extent of intervention and the clinical significance of chronic deformities are questions to be answered at the stage of planning surgery, and finally fragile soft tissue, osteoporosis, and reduced stability are problems to overcome during surgery.

Although the important question of economy is addressed in the contribution by Johnell, we are all aware

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that the topic of treating elderly patients with all the modern facilities carries the ultimate risk of financial collapse of most health care systems in developed countries. If not at present, we as treating physicians will be confronted in the near future with unpleasant questions. Where does the money come from to treat this increasing section of population? Do we have to decide for selection of our patients due to shortage of money? If yes, for which criteria? Fortunately in most countries these items have not yet become reality, but in a future supplement with the same topic, these questions will be of importance. It remains to be decided who should give the answers. Healthy persons will not put enough energy into the effort due to the lack of actuality for themselves and the involved patient will hardly be in the position to contribute in an objective way. Physicians who stand in front of their patients cannot take over the

role of judges in mandating a “yes” or “no” to treatment. Therefore, who else remains than politicians? As opinion leaders of our society it will be their rote to establish rules fair enough to guarantee basic medical treatment. However, these rules must be based on facts and figures for decision making. It is here that the medical professional world must come into action. We must put all our efforts to establish data for the rationale of our activities. The literature search by Lippuner demonstrates the relatively high standard of evaluation of conservative treatment of the osteoporotic spine. Albeit not numerous, there *are* prospective and comparative studies on the efficacy of different treatment modalities. Due to the different nature of medical treatment, this kind of research is found less frequently in the surgical field. For example, vertebroplasty and kyphoplasty as relatively new and apparently successful procedures

in the context of the aging spine is explained and described in the contributions by Boszezyk et al. and Mehbod et al. However, a literature research on these techniques does not reveal a single comparative study until today. A serious lack of background knowledge for decision making in view of the giant number of osteoporotic fractures that occur every day worldwide. An important task is waiting for all of us in evaluating carefully existing and new treatment modalities to provide a reasonable base for decision making.

The aging spine will be an ever-present issue in the life of a physician taking care of the different pathologies of the spine. The present supplement of the *European Spine Journal* will help to better understand the nature of the different changes in the spine of the elderly. It contributes to enabling us to diagnose and to treat this complex problem in an appropriate way.