

## *Editorial*

# Envisioning the evolution of orthopedic surgery in the twenty-first century

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Thanks to medical advances, Japanese society is aging at an astonishing rate; by the middle of the twenty-first century, the number of Japanese over the age of 100 will likely reach an unprecedented level. In light of this trend, our 83rd Annual Meeting, to be held May 27–30, 2010, has adopted the theme “A century for centenarians: how advances in orthopedics can help.” Clearly, our common goal is not simply to live such a long life at all costs; unless we can enjoy happy and active lives, living beyond 100 years has little meaning.

In the latter half of the 1970s, when I was studying to become an orthopedic surgeon and spinal surgery specialist, the average life expectancy in Japan was approximately 10 years less than it is now. In the intervening years, our target diseases have changed dramatically: for example, lumbar spinal canal stenosis, first reported by Verviest in 1950, has become a common surgical disease, and minimally invasive decompression and fixation procedures are now widely performed. Moreover, in the field of cervical myelopathy, the idea of extensive simultaneous multisegment decompression was introduced by Kirita in 1968, leading to the various approaches to laminoplasty (Hirabayashi, Kurokawa, Itoh, Miyazaki) that are being applied to most cases of cervical spondylotic and OPLL myelopathy. Similarly, as reported by Yamaura in 1976, the anterior floating method of OPLL, which also employs simultaneous decompression, has become the procedure of choice in cases of severe compression of 60% or more of the spinal canal. Minimally invasive procedures have also come to play a central role in instrumentation surgery and in treatment of vertebral body fractures due to osteoporosis. Healthy bones and joints comprise the vital foundation that supports active centenarians, and it is clear that advances in spinal and joint surgery have contributed significantly to maintaining bone and joint health.

I entered the research field of spinal cord monitoring more than 30 years ago after being impressed by the research of Kurokawa and Tamaki. I have come to believe that my ability to have an eye for spinal cord

monitoring during surgery has helped me to refine my spinal surgical techniques. As for the important issue of “disciplined training,” despite my having had relatively limited exposure at a university hospital to spinal surgeries that could be considered “training,” I was fortunate to have had an outstanding teacher who instilled the basics of spine surgery in me. That experience, as well as my exposure to many actual cases while on duty at related hospitals, gave me the confidence I required in my field. Evidently, finding an excellent mentor is the key to making progress as a surgeon.

In the next decade, the Japanese medical community will be focused on the issue of maintaining quality. Orthopedics covers a tremendously broad spectrum of bone and joint diseases, and in recent years the boundaries between the various fields of medicine have tended to become blurred as competition between these fields has heightened. In addition, we are approaching an era in which patients might cease to recognize our qualifications or expertise unless we can guarantee the level of expert treatment they demand. The basic requirements of a qualified physician are the abilities to make an appropriate diagnosis based on extensive knowledge, undertake appropriate treatment, and refer a patient to an appropriate treatment environment. Moreover, because of the great advances made by the medical community, patients now place greater expectations on physicians who specialize in advanced areas of medicine. Transparency about our knowledge and technical capabilities is likewise essential so that those outside our area of specialization can make informed decisions. Therefore, we need an efficient education and training system that imparts appropriate knowledge as well as the transparency to enable the general public to evaluate our techniques.

In conclusion, I believe that providing a team of outstanding teachers across Japan along with a harmonized training system for specialists will enable us to adapt to the evolution of orthopedic surgery in the twenty-first century. This combination of excellent mentors and an efficient educational and training system will do much to cultivate the next generation of specialists.

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