

## Jelena Krmpotić Nemanić (1921-2008) Conclusion of the age of classical anatomy?

*"Anatomy is destiny"*

Sigmund Freud

The death of Jelena Krmpotić Nemanić, academician and professor emeritus of anatomy at the University of Zagreb, made many of us think that the age of classical anatomy and great anatomists has come to its end. This includes both the today's teachers of anatomy, who had been Prof. Krmpotić's disciples, and the today's students, for whom Prof. Krmpotić represented a historical figure, the legendary author of their textbooks.

I had the pleasure and privilege to be taught by as well as work with Prof. Krmpotić, but I do not feel I have the right to write a standard obituary essay – Prof. Krmpotić would have liked and expected something more than a list of her achievements, awards, titles, and publications. She would anticipate, even request, new ideas and a novel perspective on anatomy in future medicine. She would expect from her disciples to show the same imagination and enthusiasm as she did until the very end of her life.

For Prof. Krmpotić, anatomy was destiny ever since 1941, when she started to work as a student assistant at the Department of Anato-



my of the Zagreb University School of Medicine. This was the time when anatomy was perhaps not *the* science of medicine, but still the major component of a medical curriculum and the most respected medical discipline. This determined Prof. Krmpotić's life, from her PhD dissertation on the endoplasticity of the cerebellum to her anatomy textbooks and editorial work on the famous Toldt-Hochstetter anatomy atlas (1). Her research interests in anatomy varied from the morphology and development of the central nervous system to the anatomy of the locomotor system. In 1957, the year she defended her PhD thesis, Prof. Krmpotić received Jensen's award of the French National Medical Academy for her discovery of the neuromuscular chronometric index (2), which explained the differences in the length and thickness of the right and left laryngeal recurrent nerve.

Although Prof. Krmpotić was a classical anatomist in the true sense of anatomical research tradition, she had a vision of modern anatomy and in a way predicted the shift from classical to clinical anatomy in the today's medical curricula. To bridge the research divide between the basic and clinical anatomy, she specialized in oto-

rhinolaryngology and successfully merged her clinical experience with anatomy research and teaching. This was a novel approach at her time, recognized by the international academic community; her books, such as the book on surgical anatomy of the head and neck, were published in several languages (3). Prof. Krmptić also very successfully collaborated with orthopedic surgeons on the book on peripheral nerves' compression syndromes (4).

Despite her old age and despite the fact that most of her colleagues at the Department of Anatomy in Zagreb were not "real" anatomists but physicians with research interest in biomedicine, her enthusiasm for research and continual questioning of the accepted definitions and teachings in anatomy were contagious. Prof. Krmptić invited me to join her research activities when she was already eighty and I enjoyed our collaboration enormously. We published together a number of articles from classical anatomy research (5-9), but the most important thing I learned from her was that the great age of anatomy was not over, but beginning again in modern medicine. She was a paradigm of this "new" anatomy: a frail old lady in an ancient room full of old, neatly indexed boxes with her precious collection of human skulls from fetal to old age – typing on her computer, sending e-mails, and surfing the Internet! She inspired me and my younger colleagues to overcome our disregard for the "stuffy old anatomy research" and to look into the future using the wisdom of the old morphologists. Her ideas were novel and challenging to the very end of her life – I was finishing the statistical analysis for our latest study on age-related changes in the occipital condyli, when I heard about her sudden death.

Prof. Krmptić eagerly encouraged us to collaborate with the colleagues from the Institute for the History of Medicine in Vienna and study the anatomical concepts in the famous anatomical wax model collections of the

Josephinum Wax Models Museum (10). There we learned from history that medicine has to appreciate the knowledge of anatomy even more than the Florentine anatomy masters of the 18th century did, so that we do not repeat their mistakes – to see structures that did not exist, to pay little attention to structures we consider irrelevant, to exaggerate in interpreting morphological findings, or to use the rarest of anatomical variations for a typical teaching model (10). We learned that the knowledge of human body morphology is at least equally, if not more important today as it was in the golden age of anatomy. This is because we now have at hand the most powerful imaging methods to show and analyze the anatomy of a living body, as well as microsurgical procedures where anatomical details determine clinical practice. However, we also learned that we should not be overconfident in technology because it is still us, the physicians, who have to interpret the images and make the best decisions for our patients. Sound knowledge of anatomy prevents us from seeing too much or too little, as did Florentine masters, and from incorporating morphological biases into clinical practice (10).

Prof. Krmptić had the wisdom of old masters and the passion of young researchers and she saw the future of "live" anatomy. She welcomed the change in the methods of teaching anatomy from the classic dissection of a cadaver to sophisticated virtual dissection and computational anatomy and moved with the times, never giving up her anatomical tradition.

To honor her past work and further explore her ideas, we open the pages of the *Croatian Medical Journal's* Forum section for researchers and teachers in both normal and pathological morphology – to share their views and visions on the role of anatomy and its teaching in modern medicine. We expect your contributions by the end of Decem-

ber 2008, so that they can undergo standard review process, and that the best pieces can be published in the first issue of 2009. Prof. Krmpotić would have enormously enjoyed such a present for her 88th birthday.

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