

Research in Veterinary Pathology in Latvia: from the Past to the Future

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Veterinary pathology as a tool for scientists. Veterinary pathology is a fundamental science which studies the mechanisms of a disease in animals, and the resulting changes in the body at molecular, cellular, and tissue levels. Research in veterinary pathology usually focuses on the study of morphologic changes – either visible at macroscopic level, i.e., those that can be seen with the naked eye or those that can be observed microscopically – with light or electron microscope, with routine (haematoxylin and eosin – blue and red stain) or by the aid of special stains. The aim of such studies is to diagnose a disease and understand pathogenesis of the disease, i.e., how the stepwise process leads to clinical manifestation of the disease. Science is intimately connected with practice, since one cannot exist without the other. Pathology is a special discipline in medicine as it stands at the crossroads between practice and science: on the one hand it is intimately involved in clinical medicine helping to answer a question “what is it?” and on the other hand it is intimately involved in the research trying to answer a question “why and how did it happen?”

Research in veterinary pathology in Latvia. Veterinary pathology as a discipline in Latvia emerged concurrently with the establishment of the College of Veterinary Medicine in 1919. The College was located in Riga, and existed as one of the colleges in the newly established higher education institution of Latvia. In 1920 Ernsts Paukuls established the Department of General Pathology which was the first academic home for a pathologist and later dean Rūdolfs Grapmanis.

There are several names that have dominated in the research of veterinary pathology in Latvia: R. Grapmanis, Milda Salmiņa-Skudiņa, and Oļģerts Parčinskis. Each of them has devoted their entire life to veterinary pathology: R. Grapmanis from 1920-1949; M. Skudiņa from 1926-1960, and O. Parčinskis from 1957-2009. Reviewing the past, it is apparent that during their service to the profession these Latvian veterinarians and pathologists have paid their attention to issues important in Latvia. A horse was the main animal species treated and consequently receiving most attention from the beginning to the middle of the 20th century; so it is not surprising that two significant publications of R. Grapmanis were devoted to this species – first his doctoral thesis describing the development of reproductive organs, especially ovaries in the equine fetus (1932), and later his study on comparing effects of chronic ossifying peri-arthritis treatment regimens on morphology of the tarsal joint in a horse (1939-1949). M. Skudiņa's doctoral thesis focused on the description of patho-morphologic changes in the stomach and intestines of horses having died from colic (1953). I am intrigued by the work of couple veterinary students, O. Kristiņa and G. Grudmanis supervised by M. Skudiņa and whose studies titled “Diagnosis and Prevalence of Malignant Tumours in Latvia” in 1952 is still worth mentioning in veterinary medicine in Latvia.

O. Parčinskis worked together with M. Skudiņa and later provided continuity in many aspects of veterinary pathology. Much of his research was devoted to study bovine enzootic leukaemia which was a rare disease in Latvia until 1960 when its prevalence started to increase consequently reaching the peak in the 1980s when ~76% of cows in Latvia were seropositive. Examples of O. Parčinskis research include a thorough description of gross and microscopic lesions characteristic of bovine enzootic leukaemia, and recommendations for elimination of this disease from dairy herds. Additionally, he has supervised research work of others leading to such publications as “Haematological Changes Characteristic of Bovine Enzootic Leukaemia” (A. Laizāns and P. Matvejevs, 1963); “Histological Changes in Organs and Tissues of Dogs Fed with Meat from Leukeamic Cows” (V. Bartenverfer and V. Bērziņa, 1970); “Correlation and Study of Mutual Connections between Bovine Enzootic Leukaemia Infection and Purebred Genetic Background, Meat and Milk Productivity” (J. Bojarunecs, L. Meijubere, L. Federe-Supruna, and B. Scopecs, 1977); and “Study of Factors that Promote Infection with Bovine Enzootic Leukaemia” (R. Jirgena, 1981). Bovine enzootic leukaemia is no

longer an issue after the implementation of eradication programme in the early 1990s but this review urges me to compare the knowledge and discoveries of veterinary pathologists and scientists in Latvia with the state of the knowledge at the same time in research labs free from the Soviet rule.

Research in veterinary pathology in Latvia in the past 20 years has produced numerous student publications, and Master's level scientific studies (47 publications between 1993 and 1999); although none of these has been published in peer-reviewed international veterinary journals. Re-establishment of modern pathology lab with good quality histology and immunohistochemistry capacity is needed to provide support for comparative pathology studies in Latvia. More importantly, for these studies to be competitive in the international arena, the studies have to be well designed and conducted considering the current state of knowledge in a particular area of research while applying that knowledge to the situation in Latvia. Therefore, fluency in English and access to international journals is the key. The return to disease studies in experimental animals would be also important; simultaneously remembering that there are famous success stories in the history of veterinary research in Latvia best shown by K. Helmanis and his studies of malleus. Lastly, collaboration with scientists of human research labs in Latvia and abroad should be actively pursued.

Concluding remarks. "Each case is a puzzle" says O. Parčinskis after 50 years of diagnostic work and hundreds of necropsies. I agree with him by 100%. The moment of surprise and ability to get closer to a definite diagnosis have attracted me to pathology. New discoveries and keeping up with them that keep me interested in this field. There are many "why" and "how" questions to be answered here in Latvia with the help of veterinary pathology and its basic tools – macroscopic and microscopic examination and immunohistochemistry.

Key words: veterinary pathology, R. Grapmanis, M. Skudiņa, O. Parčinskis, bovine leukemia.