

## Commentary: Is it time to establish a Certificate of Veterinary Pathology degree in the Middle East?

Peter Makovicky<sup>1</sup>, Jacqueline Michele Arnone<sup>2</sup>, Gabriel Samasca<sup>3</sup>, Pavol Makovicky<sup>4</sup>

<sup>1</sup>Laboratory of Veterinary Histopathology in Komarno, Slovak Republic.

<sup>2</sup>School of Nursing, Kean University, Union New Jersey, U.S.

<sup>3</sup>Department of Immunology, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania.

<sup>4</sup>Department of Biology, Faculty of Education, Selye Janos University, Komarno, Slovak Republic.

---

**Abstract:** *The objective of this work is to suggest the establishment of a Certificate of Veterinary Pathology degree in the Middle East in order to collaborate with other Veterinary Pathology Colleges worldwide. Discussion includes the importance of creating a Veterinary Pathology College that is streamlined with the other veterinary pathology colleges across the globe. Since there are currently no colleges offering a veterinary pathology degree in the Middle Eastern territories, and with the diversity of animals and diseases that are native to these regions, creating this specialized degree that is in accordance with the standards of the profession, will afford unified global communication and dissemination of research findings. Additionally, it will enhance worldwide education within the profession that will specifically impact the public health domain. Furthermore, discussion of facilitating a global approach in the creation of a Certificate of Pathology degree to this region should include all countries in the region. The existence of certification is still based on three main benefits that include education, economics and public health for the Middle East territory and will support world veterinary cooperation.*

**Keywords:** *Education, Middle East Certified Veterinary Pathologist, Veterinary medicine, Veterinary pathology.*

---

### 1. INTRODUCTION

Veterinary pathology is the one of the oldest fields of veterinary medicine. Among a lay and partly specialized society, the predominant notion is that it is a priority to work with dead animals. However, this is only partially true. Veterinary pathology is an interdisciplinary medical discipline that is an integral part of the diagnostic process. The outcome of the work in this discipline has significantly affected other clinical fields, namely prognostic significance, therapy, and a wide spectrum of preventive measures[1]. It is a diagnostic field that can be divided into two big branches: anatomical pathology, dedicated to examining organs, tissues and cadavers and clinical pathology, dedicated to the laboratory analysis of body fluids, and tissues[2]. The concept is built on five pillars[3]. Biopsy, cytology, and necropsy remain to be the most important domains, but other areas such as molecular pathology, professional inspection of diagnostics, therapeutic care and professional education are staples in the profession. It is a field with important outcomes that are especially useful in the diagnosis of diseases. Outcomes have also predictive parameters with the ability to determine the stage of further development of a disease. This includes the verification of an individual's predisposition to the disease. Today, pathology is an important asset to preventive medicine disciplines. Nevertheless, veterinary pathology has an indispensable role in research, undergraduate and graduate education[4, 5, 6]. All of these facts support that veterinary pathology plays an important role in the field of veterinary medicine. Due to the relatively wide scope of the profession and the important role the outcomes of the discipline's research has in assisting preventive medicine disciplines, a requisite exists for further education. There are several specific certification programs around the world such as the European College of Veterinary Pathologists (ECVP), American College of Veterinary Pathologists (ACVP), Japanese College of Veterinary Pathologists (JCVP), and the

Indian College of Veterinary Pathologists (ICVP). These programs are being implemented to some selected training places, but currently there is not an existing program for the Middle East territory. This is a specific area with a strong animal breeding history, including some noble animal's origin. Due to the culture and traditions of the region, that includes the conditions of husbandry and domestic animal breeding, veterinary medicine in this region also has a special status. The variable weather conditions give rise to the possibility of specific diseases occurring. This can include these diseases spreading to animal husbandry products, thereby endangering the population. Due to these facts, a specific veterinary pathology program in this area is required to address these issues as well as streamline the education with the other global certification programs in this field. While the current undergraduate veterinarian education programs address some of these issues that are specific to the Middle East territory, there is a lack of further graduate training programs that offer veterinary pathology certification. This is very important for the continued development of the field of veterinary pathology, in education, regional economics and public health both in the region and worldwide. The objective of this work is to suggest the establishment of a Certificate of Veterinary Pathology degree in the Middle East in order to advance the discipline and collaborate with other countries worldwide.

## **2. WHY CERTIFIED TRAINING IN THE MIDDLE EAST?: DISCUSSION**

Special veterinary pathology societies with workplaces already exist, where it is possible to obtain formalized training, take certification exams and receive a degree as a Certified Veterinary Pathologist. We think that this is one of many ways of how to ensure the position of this field in practice and in research. In the Middle Eastern countries people have historically had more experiences with animal breeding. One can say that animal husbandry breeding occurred in the Middle East earlier than in any of the other continents. The Middle Eastern countries comprise of a group of countries that share similar cultural traditions, religious concepts as well as similar geographical and climatic conditions [7]. The truth is that there are few distinctions in comparing conditions in other countries, including different animal breeding [8, 9, 10]. That also means fewer distinct problems for veterinary medicine including a greater diversity in grave animal diseases [11]. It is normal that what is rare in one country can be absolutely normal in another. This bestows the possibility to create databases for many diverse diseases. This would include: delineating and categorizing diseases in the Middle East; how to organize research; and what will be important for the people and for the countries. Part of the work still remains with the government, but a larger part of this work will still be by independent universities, independent laboratories, or independent clinicians in the Middle East territory. There would be places for doing biopsies, cytology, necropsy and the creation of databases of disease causes and death causes of husbandry and domestic animals. The results can be compared with other parts of world and can be important tool for all future world research. We think that a certification for veterinary pathology is important for regular work and management of activities within this field. Today it is well known that veterinary medicine has an increasingly important role in both global health and food security [12]. The management needs to be specific, streamlined and professional and not only formal. This dynamic approach is very important for the future of veterinary medicine. There are outstanding questions regarding how this exam will be applied in a large region with great diversity in language, education level and animal species diversity. As veterinary education in this area is conducted in English (Egypt, Israel), Arabic (Syria, Iraq), and in French (Algeria, Morocco), there are implicit difficulties in regards to standardization, with one solution being to adopt an international language. We are supporting English language. This is also important for enabling future cooperation between other veterinary pathologists. In regard to the impact of species diversity, companion animals are important in Israel, but less so in the other Middle Eastern countries. Exotic birds and camels are important in Arabia, but officially they do not exist in other countries. Wildlife varies enormously in both species diversity and population levels between countries. Therefore candidates need to be trained in two parts: in general veterinary pathology and in veterinary pathology applicable to the specific pathology areas. For the regular training we strongly support the idea of creating several training centers guaranteed by veterinary universities. It is necessary to introduce diagnostics and clinical veterinary pathology, and to establish archives with diagnostic materials. Many recognize the importance for establishing professional accreditation in the Middle Eastern veterinary community in fields such as diagnostic, toxicological, forensic and experimental pathology. Therefore it is important that this region adopt a certifying exam. The option of gaining accreditation through a fellowship position in Europe, United States or other countries, is ultra-competitive and not achievable for many promising candidates. Here we strongly appeal to people leading the veterinary universities of the Middle East to be in contact

with each other. It is important to cooperate and create training centers which can be guarantors for veterinary pathology training. The rewards would be to increase the professional standards of veterinary pathology, to benefit local veterinary medicine, as well as boosting international prestige. We are thinking that today is really not enough to make regional policy, but it needs to find shared points and create opportunities, which ultimately will bring benefit for veterinary medicine. However, if there is not an integrated societal organization, the discipline of veterinary pathology will remain on the periphery of interest to the other disciplines. If the government gives less money to the full agriculture sector and the support yields only compensative effects. The truth is that people do not appreciate the real situation, but if we compare it with other western countries, we can see some important differences. For example, in some places around the world it is normal to give all of the samples to the pathology department, or to give a corpus to necropsy. Yet in other places around the world, it is normal to put the sample directly into the waste without investigation. This difference in procedure is a grave mistake which ultimately impoverishes everyone. This includes the animals, the clinics, the laboratory and ultimately also the government. A certificate in veterinary pathology degree would lead to more streamlined efficient work globally, while simplifying the process. Outside of this, the laboratories are not protected. They are forced a bit to adapt the results for clinicians, or the clinicians themselves begin to design different laboratory tests. The same trends are also visible in research. We strongly recommend that all histological slides should be read by a skilled pathologist. It is not always appropriate if the histology is described by a biologist, biochemist, or scientist. Defined and unified terminology and controlled vocabulary with standard descriptions need to be provided [13]. Not everyone knows this but many times it is the pathologist who is the one behind the success of various scientific work. According to us, it is not just about additional tests to supplant research, or about pictures added to an article for illustration. It is the educated men and women who work in this field every day that should be the ones to provide the results of research in this area, to reduce discrepancies or error that can ultimately affect the outcome of the research under study. Without adding a graduate certification in veterinary pathology in the Middle East territory, it will hinder the educational advancement of the discipline in this region. The Middle East territories have had a long and rich history in husbandry and breeding, and have the potential to provide meaningful research that could be translated to other areas of the world, especially in the public health domain. Without a graduate program in the Middle East territory that will further educate persons in this field and streamline the language, procedures and role of the discipline with other veterinary pathology societies, will impact further progress in the field and the ability to collaborate with other pathologists worldwide. Further educational program training not only includes the veterinary pathologist, it includes other specializations, as well as technician training [14, 15]. All of this could be regulated by an organization and graduate educational certification program for veterinary pathologists. This type of advanced program would increase the level and standards of veterinary medicine in this region, positively impact economics and public health through the scholarly collaboration of outcomes with other pathologists worldwide.

### **3. CONCLUSION**

The authors were invited to write an article about veterinary pathology, and include a statement of some of our personal views regarding the future of this field with suggestions on how to advance this discipline in Middle East territories. Based on our own experience in the present work we would like to suggest the establishment of a Certificate of Veterinary Pathology degree in the Middle East in order to collaborate with other countries around the world. Establishment of this organization can bring some benefits for animals, breeders, clinics, laboratories and also for government.

### **4. DEDICATION**

This article received no specific grant from any funding agency in the public, commercial and any other private profit sectors.

### **REFERENCES**

- [1] Makovicky P., Arnone, J. M. and Makovicky P., Step by step in anatomic and diagnostics veterinary pathology: How death teaches us about life, *ARC J. Anim. Vet. Sci.* 2(4), 30-36 (2016).
- [2] Tome, P. and H. Vala, How experience can be useful in veterinary pathological anatomy, *A Birds-Eye View of Veterinary Medicine*, Rijeka: Croatia, 2012. (Book Chapter)
- [3] Makovicky, P., What does modern veterinary pathology have to offer? *ARC J. Anim. Vet. Sci.* 1(1), 43-47 (2015).

- [4] Makovicky P. and Svecova I., Veterinary pathology: the past, present and the future, *Phenogenomic Newsletter*. 2(2), 22-23 (2016).
- [5] Rodriguez-Martinez H., Quality commitment and management in veterinary education, *J. Vet. Med. Educ.* 33(2), 165-171 (2006).
- [6] Turner P. V., Haschek W. M., Bolon B., Diegel K., Hayes M. A., McEwen B., Sargeant A. M., Scudamore C. L., Stalker M., von Beust B. and Wancket L.M., Commentary: the role of the toxicologic pathologist in academia, *Vet. Pathol.* 52(1), 7-17 (2015).
- [7] Aidaros H., Global perspectives – the Middle East: Egypt, *Rev. Sci. Tech. Off. Int. Epiz.* 24(2), 589-596 (2005).
- [8] Gootwine E., Mini review: breeding Awassi and Assaf sheep for diverse management conditions, *Trop. Anim. Health Prod.* 43(7), 1289-1296.
- [9] Makovicky P., Makovicky P., Nagy M., Rimarova K. and Diabelkova J., Genetic parameters for somatic cell count, Logsc and Somatic cell score of breeds: Improved Valachian, Tsigai, Lacune and their crosses. *Acta Vet. Beograd.* 64(3), 386-396 (2014).
- [10] Makovicky P., Rimarova K., Makovicky P. and Nagy M., Genetic parameters for external udder traits of different dairy ewes, *Indian J. Anim. Sci.* 85(1), 89-90 (2015).
- [11] Shimshony A. and Economides P., Disease prevention and preparedness for animal health emergencies in the Middle East, *Rev. Sci. Tech. Off. Int. Epiz.* 25(1), 253-269 (2006).
- [12] Kelly A., Osburn B. and Salman M., Veterinary medicines increasing role in global health, *Lancet Glob. Health.* 2(7), 379-380 (2014).
- [13] Christopher M. M. and Hotz C. S., Cytologic diagnosis: expression of probability by clinical pathologists, *Vet. Clin. Pathol.* 33(2), 84-95 (2004).
- [14] Kelly D. F., Veterinary pathology: The benefits and the cost, *J. Small Anim. Pract.* 35(2), 65-67 (1994).
- [15] Schultze A. E., Messick, J. B. and Sharkey, L. C., Developing formal training opportunities for clinical pathology residents at pharmaceutical and biotechnology companies and commercial diagnostic laboratories, *Vet. Clin. Pathol.* 35(3), 272-275 (2006).