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Interface of anatomic pathology with transdisciplinary approaches in comparative infectious disease research

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Abstract

While anatomic pathology as a morphologic science has limitations due to its orthodox nature, paradoxically it has enormous potential for collaborative interaction with other fields of knowledge. Here we discuss some of the cutting edge research recently published in the field of comparative infectious disease that had anatomic pathology as a core methodology. Animal infection models are powerful tools in biomedicine research. Importantly, anatomic pathology is an essential method for appropriate characterization of these animal models. In the field of salmonellosis, animal models that have been extensively characterized by anatomic pathology methods, have provided invaluable data for comprehension of the pathogenesis of Salmonella. Furthermore, anatomic pathology assessment has allowed for an extraordinary advance in our knowledge of Salmonella co-infections, including highly relevant pathogens such as HIV/SIV or Plasmodium spp. (the agent of Malaria). Finally, more recently, pathology has also become instrumental for advancing our understanding of the role played by the microbiota in infectious intestinal pathology. Therefore, interaction of anatomic pathology with other advanced research methods has proven to be a powerful combination in biomedical research as exemplified here in the case of Salmonella pathogenesis research.

Biography

Renato L. Santos completed DVM and MSc degrees from the Universidade Federal de Minas Gerais (UFMG), and a PhD in veterinary pathology at Texas A&M University. Full Professor of Pathology, and former Visiting Associate Professor at the University of California Davis. Author of more than 160 peer-reviewed papers. Editor of the textbooks Veterinary Pathology and Reproductive Pathology of Domestic Animals (in Portuguese). Fellow of the John Simon Guggenheim Memorial Foundation, among other distinctions. Past President of the Brazilian Association for Veterinary Pathology, currently in charge of the first national board exam. Currently serving as Dean of Research at UFMG.