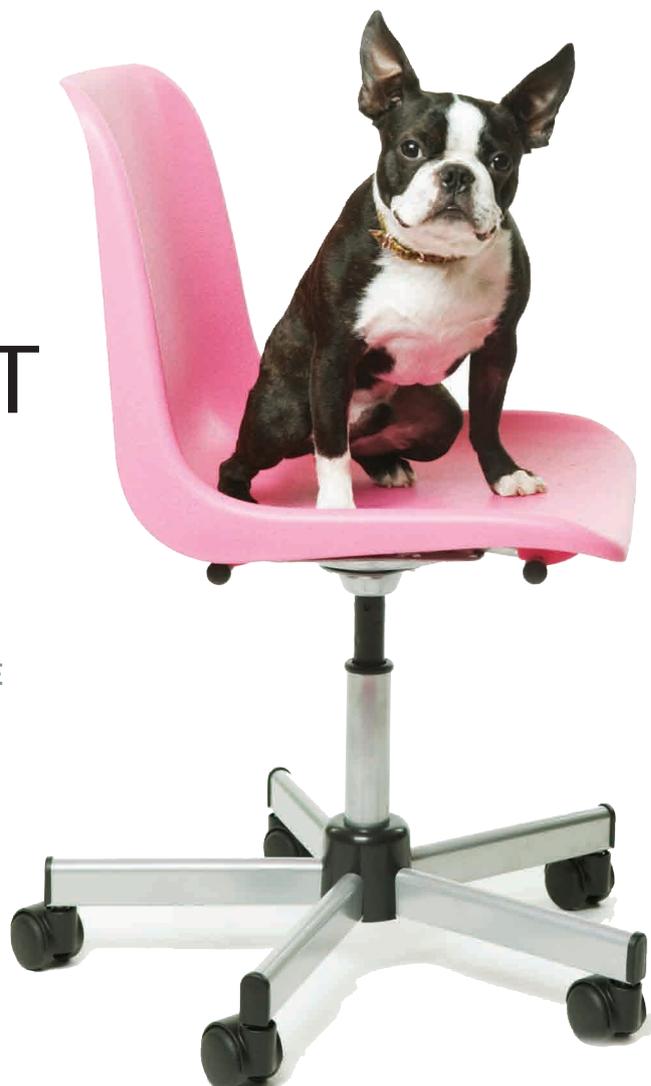


THE VET SET

VETERINARY PATHOLOGISTS PERFORM BASICALLY THE SAME TASKS AS THEIR HUMAN-ORIENTED COUNTERPARTS – IT’S JUST THAT THE PATIENTS COME IN MORE SHAPES AND SIZES, WRITES CHRIS GODFREY.

PHOTOGRAPHER: ANDREW PORFYRI



When Dr Richard Miller looks down a microscope, he is not thinking of a human patient. He is a veterinary pathologist and may be examining samples from a dog, a horse or an “exotic” patient such as a chimpanzee.

“Diagnostic veterinary pathology is full of surprises,” says Dr Miller. “Much of the diagnostic work is routine, but even repetitive conditions have variations. In our laboratory we share interesting cases for second opinions, so you get to see everyone else’s interesting cases as well as your own.”

Dr Miller is a specialist veterinary pathologist at the Australian branch of IDEXX Pathology, a multinational US-owned veterinary pathology company. The 1973 graduate of the University of Queensland is one of the pioneers of veterinary pathology in Australia. He set up his own nationwide company, VPS, which set the standard for privately owned exclusively veterinary pathology practice. VPS was bought by IDEXX in 2000.

Dr Miller is also the president of the Australian Society of Veterinary Pathology.

Veterinary pathologists perform the same tasks as their counterparts dealing with human patients. Their job can be broken down into anatomical pathology (necropsy and histopathology) and clinical pathology, which includes haematology, biochemistry and microbiology. Their work covers herd health problems for animals such as sheep and cattle and individual disease in all species.

“Veterinarians working in private diagnostic pathology firms tend to spend most of their time working on companion animal cases – dogs, cats and horses for example,” says Dr Miller. “A lot of the production animal and herd health work is performed by government laboratories.”

Government funding of herd health pathology had an effect on the development of the speciality in Australia. Veterinarians and farmers could rely on free diagnostic services as part of the management of economically important industries such as beef or milk production.

“Until the 1970s there were limited training programs for veterinary pathology. Vets working in government, for example

the state departments of agriculture, would learn on the job and often not gain formal qualifications,” Dr Miller says.

“Veterinary pathologists work in a number of areas which reflect this history. Their duties vary according to the institution. In universities they might be working as diagnostic pathologists, teachers and researchers. In government labs they might do research and production animal pathology with some ‘clinical’ diagnostic work. A relatively new field is work in the pharmaceutical industry, where toxicological and laboratory animal studies predominate.”

An obvious difference between human and veterinary pathology is the “normal”, or reference, values. Each species has its own. Although basic physiology applies – for example, haematology follows the same disease patterns in all species – there are subtle differences. A cat, for example, will be classed as anaemic at a different red blood cell count to that of a dog.

“Working with numerous species adds great variety but many challenges,



Dr Miller is a specialist veterinary pathologist at the Australian branch of IDEXX Pathology, a multinational US-owned veterinary pathology company, and the president of the Australian Society of Veterinary Pathology.

particularly when an unusual or even new disease occurs,” Dr Miller says. “One of the great problems is lack of suitable specific breed and species references. This is slowly improving as greater interest is being shown in non-traditional species.”

The average day for a veterinary pathologist will cover the range of work typically performed in human pathology. He or she will interpret blood chemistries or diagnose and grade tumours. A pathologist working in the production animal field will deal with herd outbreaks of disease, some of which, such as foot and mouth disease, could have huge economic impact. This role is similar to that of doctors working in infectious disease and public health.

In Australia there is little sub-specialisation within veterinary pathology. This contrasts with the US, where vets have specialised in, for example, caged bird or “exotic” pathology. Dr Miller says the US profession has a better training system for veterinary pathology. He completed a research BSc and PhD at James Cook University of North Queensland but his specialist qualification comes from a stint at Louisiana State University, where he completed the American Board speciality program.

“I believe their program in Veterinary Pathology is very good,” he says. “A lot of Australians go to the USA to do their ‘Boards’. It is a shorter but more intense program with a high caseload.” Higher funding is the reason American training is better, he says. “The universities have more

money and more pathologists working in their faculties.”

In Australia, education has evolved from “on the job” training with no formal qualifications in the 1970s to the present system. A veterinarian completes a “membership” of the Australian College of Veterinary Pathologists and then goes on to obtain the “fellowship”. A fellowship is the specialist qualification recognised by the state veterinary surgeons’ boards. These two stages require time spent in university training programs.

“Many years of study and experience is needed to become a fellow,” says Dr Miller. “A minimum of four years has to elapse between obtaining the veterinary degree and membership. And fellowship may take another five or even 10 years.”

Making a veterinary diagnosis is legally “an act of veterinary science” as defined by veterinary surgeons’ boards. As such it is not legal for medical pathologists to make a veterinary diagnosis. Dr Miller says this is significant for human pathology firms venturing into the veterinary pathology business. “The medical labs have to employ veterinarians to fill this role,” he says.

Among trends for the future, Dr Miller sees, the selling of point-of-care diagnostic units to veterinary practices, as continuing to expand. “These units offer something which is always an issue in pathology – the ability to give quick answers,” he says.

DIAGNOSING DOG DIABETES

Francine St George’s 12-year-old dog, Haidi, suddenly became ill one weekend. Haidi stopped eating and was depressed and vomiting. She was taken to the local veterinary practice, where she was found to have a high temperature and sensitive abdomen. She was very dehydrated.

The veterinarian suspected acute pancreatitis. This is a reasonably common problem in dogs of Haidi’s age and type. Severe cases can be fatal.

The veterinary practice had an “in-house” biochemistry analyser and could have haematology performed by an external laboratory. The in-house test results would be available in an hour and the haematology within 12 hours.

The biochemistry unit gave a full biochemistry panel covering measurements such as creatinine, amylase and electrolytes. Haidi was found to have very high amylase, lipase and blood glucose. The haematology showed a high white cell count with a “left shift”.

A diagnosis of diabetes was made, with the complication of acute pancreatitis. Haidi was started on insulin and kept in the hospital on intravenous fluids and antibiotics. Her condition remained serious for some days, but she eventually responded and could go home after a week’s stay.

She is now being managed as a diabetic, having twice daily insulin injections. She is happy and well and back to her usual tricks with Francine. 🐾