Learning about some of the largest of patients

ARE you a small animal practitioner concerned about your ability to handle large animal emergencies? Do you harbour nagging doubts about certain clinical scenarios for which your formal education may have left you less than optimally prepared?

Fortunately, with a broad-minded attitude toward continuing education, help may be found for even the most challenging of large animal scenarios, as I was recently reminded.

ANDREW KNIGHT continues his series on CPD with a difference with a visit to a London museum

It's uncanny how scientific advances are so often preceded by science fiction. Given the never-ending stream of discoveries emanating from previously-inaccessible archaeological sites in China, Argentina, and Mongolia, it is doubtless only a matter of time until the discovery of some prehistoric blood-sucking insect, exquisitely preserved within amber, containing a stomach full of dinosaur cells.

Never anticipated

Add to this our seemingly inexorable advances in cloning, and throw in the unguarded lunchbox of a laboratory technician or private animal collector, filled with modern junk food and plastic components.

Before you can say "ovarian 3-beta-hydroxysteroid dehydrogenase delta 5-4-isomerase cDNA cloning", you could be faced with a scenario your veterinary instructors probably never anticipated: the inappetent, vomiting dinosaur.

The wise practitioner, however, attempts to stay ahead of the curve. Hence, when I recently spied the entrance to London's Natural History Museum, whilst on walkabout near my latest practice, I seized the opportunity to study some pertinent facts.

The imposing bulk of a Diplodocus skeleton within the spectacular entrance hall was my first introduction to the sizeable subject of dinosaur anatomy. These herbivores weighed around 20 tonnes and reached up to 26 metres in length.

Dinosaurs evolved from early reptiles and, accordingly, display many recognisable features of vertebrate anatomy.

I took heart from such similarities, until I imagined the weight of the thermometer several nurses and I would jointly be required to balance above our heads, whilst advancing toward the rear end in a co-ordinated fashion, if attempting to conduct a temperature check.

And God forbid that a per rectum examination or pregnancy diagnosis would be required, which would seem to necessitate the use of a full-body glove, head torches and caving equipment. A last will and testament would also seem wise.

Perhaps the front end would be easier, I thought, until I examined some dinosaur teeth. Regrettably, it appeared that even the best dental drill I've ever worked with would take at least several days to trim the overgrown incisors on display.

Presumably, the patient would require sedation, with a hyperconcentrated formulation of Immobilon, or similar.

Extremely valuable

The patient's respiratory efficiency could, of course, be dangerously impaired throughout by its considerable bulk. What would be the consequences if it did not survive?

Such animals would doubtless be extremely valuable, and their deaths likely to trigger not only dinosaur-sized complaints, but also mandatory post-mortem examinations.

Based on the experiences of a colleague, who had to conduct elephant PMs in Sri Lanka – which routinely took 12 hours – I imagine my clinic would have to block off at least a week of consultations and acquire tools similar to those used by firefighters for rescuing victims from car wrecks.

I moved hurriedly on, in search of something easier. I soon found a model of a dinosaur's leg, partially dissected to reveal the bones and skeletal musculature. Apparent similarities with dogs resulted in some cautious optimism, until I imagined the procedure required to diagnose and repair a ruptured cranial cruciate ligament.

Given the likelihood of sudden twisting and turning forces exerted on the stifle joint whilst attempting to capture far smaller (and, hopefully, more agile) veterinary staff – possibly following an attempted rectal temperature check – such an injury would not seem improbable.

Two teams required

For starters, the leg was twice as high as me. Even under general anaesthesia, it appeared that two teams of very strong veterinary staff with ropes, pulling in opposite directions, would be required, to demonstrate pathognomonic cranial drawer sign (subluxation of the tibia with respect to the femur) in the anaesthetised dinosaur.

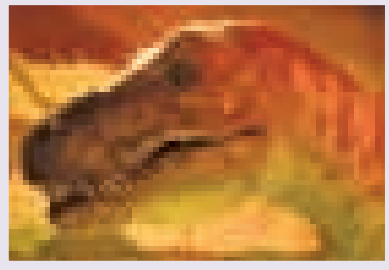
Given the large body weight, an intracapsular repair would seem indicated, perhaps with the addition of extracapsular techniques such as imbrication of the extracapsular tissues, for added joint stability. So far so good, I thought. An "over the top" patellar tendon graft should work. Until I realised the dinosaur had no patella.

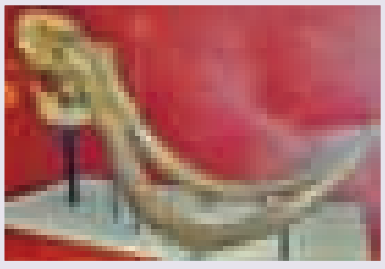
I hurried on once again. Finally, I found a model of the heart and chest cavity of a very small dinosaur, only the size of a pony. I was relieved to spy certain similarities to mammalian cardiovascular architecture. Some vessels, at least, were painted red, whilst others were blue.

"Wonderful!" I thought. I may not be able to check a dinosaur's temperature, trim its teeth or repair its ruptured cruciate ligament, but at least I (if not my patient) may have a slim chance should I be required to perform open heart surgery.

If, like me, you wish to prepare yourself for the veterinary consequences of the dinosaur-filled future that appears increasingly inevitable, given modern advances in cloning, then might I suggest the exemplary range of continuing educational options available at London's Natural History Museum (www.nhm.ac.uk).

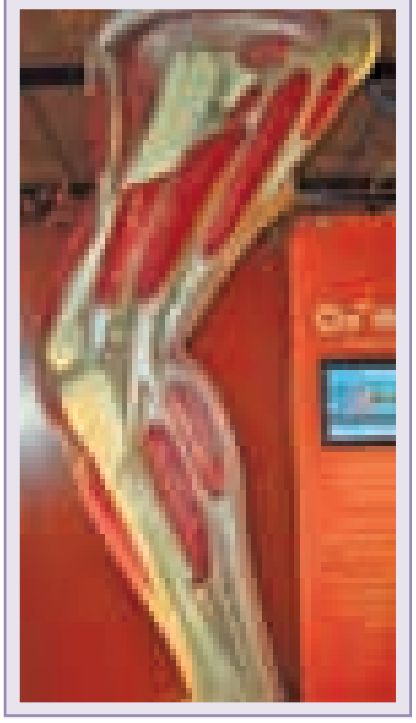
A diplodocus skeleton prominently displayed in London's Natural History Museum and (below) the head of Tyrannosaurus Rex.





Rather large dinosaur teeth.

Dinosaur heart and lungs and (below) a stifle joint.



Andrew Knight, BVMS, MRCVS, is a London-based veterinary locum, who states that with the possible exception of certain of his veterinary school professors, he has not yet encountered a living dinosaur, but hopes and expects it will only be a matter of time.