



Technology and the Horse Nathan Voris, DVM

Historically, the practice of equine veterinary medicine and surgery was considered an art that practitioners only mastered with time and experience. Diagnosis of disease or lameness was based on the observations of owners and veterinarians, and treatments were based on what had worked for individuals in the past. Over time, science began to discover the pathology of disease and lameness and helped explain why the treatments "doc" prescribed were effective. Additionally, once the processes were understood, new treatments specifically designed to treat or prevent the disease were developed. Today, the practice of veterinary medicine is still somewhat an art, but advances in science and technology have enabled practitioners to better understand, diagnose and treat disease and lameness in the horse.

Over the years, there has been an explosion in diagnostic and treatment modalities involving soundness in the equestrian athlete. In most cases, the initial rate limiting factor slowing the availability of such applications has been the cost of the equipment, and the "learning curve" involved with using it.

Two of the greatest advances in lameness evaluation have been the introduction of radiography and ultrasound to equine veterinary practice. Radiographs, or "x-rays", are most useful for getting information about the integrity of bones. In order to visualize soft tissues such as tendons and ligaments, ultrasound is most often the tool of choice. Ultrasound originally gained acceptance in equine veterinary medicine as a tool for tracking reproductive cycles and early pregnancy diagnosis. Over the last 10 years, many practitioners have become more comfortable with the technology and are recognizing the value of including the ultrasound in many more diagnostic procedures.

Today, digital radiography is gaining popularity in veterinary medicine. As recently as 1999, there were only 5 equine practices (4 of them were university veterinary hospitals) providing digital radiography due to the high cost of the equipment (around \$500,000). Over the last 7 years, the cost of the technology has become feasible to many more practices. The main advantage of digital radiography, over plain film radiography, is its superior image detail. Digital images capture bone detail without "burning out" soft tissues. While digital radiography does not replace ultrasound, the images give greater information on soft tissue structures than plain film radiography. An additional advantage over plain film is the transferability of the digital image. Rather than having to make copies of film and mailing them to a radiologist for a second opinion, images can be sent via compact disk or e-mail.

Technological advances will continue to enhance veterinary medicine and improve the health and well being of our equine companions. As veterinarians, we must be committed to keeping up with technology by attending scientific conferences and participating in wet labs. Regardless of what the future holds in technological progress, veterinary medicine will continue to move forward as an art that is best practiced by combining knowledge, experience and observation of the horse and his environment with advances in technology and science.