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Equine Dentistry

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EQUINE DENTISTRY

WHEN a horse has a toothache, investigating the trouble is no easy task. So unless a problem is evident, it is often overlooked. Yet, a toothache may signal other more serious ailments.

According to Dr. Christine Uhlinger of the Field Service Unit at New Bolton Center, equine dentistry is one area of veterinary medicine that has received little attention until recently. The reason for this, she said, is partly due to the horse's anatomy.

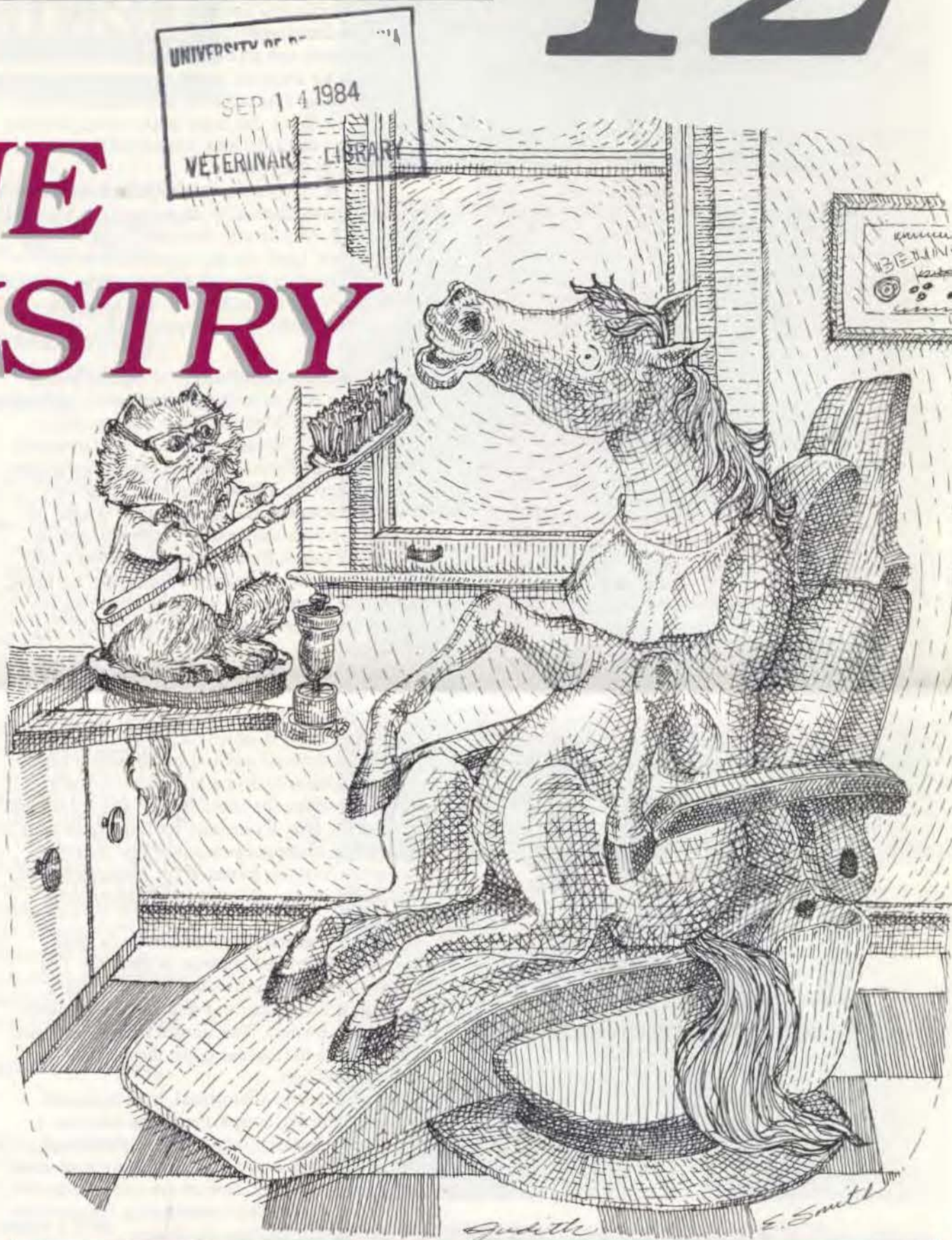
"A horse's mouth is a long, dark and dangerous tunnel. There is no easy access into it. Traditionally, if there was no obvious facial swelling or other problem, it was a part of the horse's anatomy that was, frankly, easier to avoid. 'If you don't look, you don't see,'" she explained.

Traditionally, equine dentists were lay people, like the farriers who attend to horses' feet. While some were and still are quite knowledgeable, most veterinarians would prefer that equine dentistry remain in the realm of medicine.

"Given the advances in every other area of equine medicine, equine dentistry is still operating in the seventeenth century. But that is changing and we are working to develop new technology and new tools that will make it easier to examine and treat dental problems in horses," she said.

Following a literature search, Dr. Uhlinger also discovered that relatively little had been documented about equine dentistry since the 1920s. In fact, she said, after 200 years there is still no agreement on what to call a horse's teeth. That has prompted her to publish a nomenclature of terms.

Dr. Uhlinger has also designed a dental examination form for horses' teeth that is similar to the charts dentists use for their human patients.



"The dental form is our first big advancement. Like the dentist's chart, there is a diagram of the horse's mouth, numbering the teeth L-1, L-2, L-3, and so on. When a horse is examined and treated, the information is recorded and put in to the computer. Now that we have a data base, we have a clearer picture of our caseload, including dental health history, previous treatments and required follow-ups," she noted.

Dr. Uhlinger first became interested in equine dentistry through her field service work. Often she would be called out to treat a horse for colic or determine the cause of a behavioral problem. On examining the animal, she would often discover that the root of the problem was in the mouth.

"There is an old saying about horses . . . 'No foot, no horse.' Well, you could literally substitute 'no tooth, no horse.' A horse with a missing tooth is in deep trouble. Left unattended or untreated, this condition can alter a horse's behavior, limiting its usefulness, and even shortening its life span," she said.

While an equine dental exam may be time consuming and even dangerous to conduct, Dr. Uhlinger said that veterinarians who do them frequently find surprising defects like split and missing or extra teeth that can lead to serious health problems.

Often a horse's behavior will signal trouble in the mouth. It may eat too slowly or it will avoid

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EQUINE DENTISTRY

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drinking cold water. Holding its head at a tipped angle or refusal to accept a bridle are also indications of possible oral health problems. More obvious are facial swelling, bleeding from the mouth or gums and an olfactory odor, which could mean an abscessed tooth. Breathing difficulties can be caused by sinusitis, a condition resulting from missing or damaged upper teeth. Bottom jaw problems can turn into osteomyelitis, an inflammation of the bone.

"A lot of the problems with horses' teeth are caused by malocclusion or improper fit of top and bottom teeth. Unlike our own and those of other species, horses' teeth are not static. Horses are constantly grinding down their teeth while new teeth erupt. If the animal's teeth don't occlude properly, they won't wear properly," she explained.

Dr. Uhlinger coordinates the equine dental clinic at New Bolton in cooperation with the Center's Surgical and Medical Departments and in liaison with Dr. Claude La Dow of the University of Pennsylvania Dental School. Many of the dental instruments have been borrowed from the School and adapted and modified for equine use.

Helping with the dental program is equine surgeon Dr. Loren Evans, who has shown a special interest in the dental cases. Also, Dr. La Dow, an area oral surgeon and horseman has lent his expertise to the problems of equine dentistry at New Bolton.

Determining treatment for dental problems is not always easy. A missing tooth can precipitate worse health problems for the animal extracting the abscessed tooth is usually a last resort.

"The traditional method of extracting horse teeth was to literally drill a hole in the horse's head and hammer the tooth loose," she explained. "Fortunately, Drs. Evans and La Dow have now developed an alternate procedure that involves splitting the tooth to loosen it for extraction. The animal must be anesthetized for these surgical procedures.

"Before antibiotics, several famous race-horses were destroyed because of sinusitis. The condition may be serious since it can interfere with normal breathing, and treatment is unpleasant for some owners. The sinuses must be drained or flushed and the animal given medication," noted Dr. Uhlinger.

Because of the anatomical, logistical, and dynamic problems, coupled with the fact that a horse's tooth is seven inches long from root to crown, traditional human solutions like root canal therapy and prosthetic devices are not yet feasible. Dr. La Dow is currently investigating the possibility of endodontic therapy for horses.

As hard as it is to examine the mouths of horses, sheep are even more difficult patients. They hate to open their mouths, Dr. Uhlinger said. Holding up a skull from a sheep that had died of an abdominal impaction, she indicated several missing teeth that had prevented the animal from chewing its food. Loss of teeth can lead to a variety of nutritional disorders, such as "wasting ewes."

"I am confident that there is dental disease in all animal species. Like humans, dogs and cats are more prone to cavities and periodontal disease," noted Dr. Uhlinger. "While horses don't get many

carries or cavities, they tend to wear down the tooth enamel. They are constantly grinding their teeth, leaving sharp edges and long protuberances. Routine dental care includes teeth floating or filing."

There are strong correlations between humans and small animals, noted Dr. Uhlinger. She also claims that pigs make wonderful models for human dental problems, because, like humans, they are omnivores.

"We saw six horses one day. Two had unreported diseases; one had a dental tumor, and one had an extra tooth, with no opposing teeth. The extra tooth had driven into its bottom jaw. After Dr. Evans ground the tooth down a little, the animal was OK," related Dr. Uhlinger and added that a variety of dental tumors can be surgically removed.

"Another case involved a horse that had been brought over 400 miles to New Bolton for determination of a behavioral problem. The animal had been continuously shaking its head. On examination, I found that a baby tooth had become lodged between its gum and the jaw. When I removed the tooth, the animal stopped shaking its head."

In the area of sports medicine, Dr. Uhlinger and her colleagues are looking at the effects of performance stress on horses' teeth and at certain behavioral similarities between human athletes and their equine counterparts. They are trying to determine what normal occlusion is for horses and whether horses grind or chew when they are running. Putting transducers and bite plates in the animal's mouth, can help answer these questions.

"We are thinking of funding research in comparative dentistry. By availing ourselves of the incredible human dental technology, we hope to evolve better methods of saving equine teeth, instead of extracting them," said Dr. Uhlinger. "We need to invent new diagnostic methods and tools; develop specialized oral radiographs, and better surgical techniques. We need to find ways of diagnosing a problem before it becomes a crisis," said Dr. Uhlinger, citing osteomyelitis as an example.

Osteomyelitis, a disease of the bone and gingiva that is similar to advanced periodontal disease in humans, was traditionally not diagnosed until there was jaw swelling and already too advanced for simple treatment.

Now routine health care of horses and other animals includes a dental checkup. The first dental examination is usually done when the horse is 18 months old. An extra "wolf" tooth is usually removed in the young animal. According to Dr. Uhlinger, "floating" or teeth filing should be done between six and twelve months a year. Without the proper dental care, the normal equine life span may be shortened.

Horse and other animal owners are quite enthusiastic about New Bolton's dental health program, which includes continuing education seminars for area practitioners. Frequently, the veterinarians get calls from area dentists who offer their expertise on equine dental problems.

A member of the Field Service Unit since 1979, Dr. Uhlinger specialized in herd health, parasitology and infectious diseases in horses, sheep, and goats. She earned her V.M.D. degree from Penn in 1979. A resident of Kennett Square, Dr. Uhlinger is a horsewoman who does some eventing on a "low level." She is also the consulting veterinarian to the Rose Tree Pony Club and the Brandywine Valley Driving Club.

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