



The tooth of the matter

In the past decade, our understanding of equine dentistry has advanced considerably. Increased emphasis on examination of the horse's mouth, by both veterinary surgeons and equine dental technicians (EDTs), has resulted in a greater understanding of dental anatomy.

We can now recognise and treat dental problems at a much earlier stage than was previously possible, thus hopefully avoiding long-term problems. Regular preventative check-ups are beneficial to keep a horse's mouth in as healthy a state as possible.

Know your Anatomy

Adult horses have six upper and six lower incisors. These are used for grasping and tearing grass so that it can be eaten. Male horses often have tusches – small pointed teeth behind the incisors, which are the equivalent of the large canine teeth in carnivores, although they don't have a role in herbivores.

The wolf tooth is the first premolar that sits in front of the molars (see page 94). The horse then has six cheek teeth, top and bottom on both sides of his mouth (these are called the dental

arcades). These cheek teeth are arranged together in a tight row with no gaps between them, which allows the teeth to act as one large grinding surface to crush food.

Tooth Structure

Horses' teeth have evolved over millions of years to allow effective chewing of large amounts of fibrous grass. The teeth are anatomically very different from those of a dog or a human. They have very long crowns, which erupt throughout most of...

Who should rasp my horse's teeth?

Traditionally, vets were the best placed profession to rasp horse's teeth.

However, a generation or so ago, it was fair to say that vets in general were making a poor job of this, which led to a surge in unqualified equine dentists.

There are now many good EDTs who have passed the relevant exams and been accredited by the British Equine Veterinary Association. Look for EDTs who have joined the British Association of Equine Dental Technicians (BAEDT).

In addition, many vets now have a keen interest in the subject. All vets are

trained and qualified to perform equine dentistry, and many have been on further courses to improve their competency in this area.

There is certainly a minimum standard that you should expect from anyone involved with equine dentistry. They should have a set of good clean sharp rasps, a full mouth gag, a head torch and a mirror.

You should expect them to do a full examination of your horse's mouth, pointing out any abnormalities, and explaining how they can be corrected.

the tongue, forming a sticky mass of food called a bolus. This is ground down by the cheek teeth using a shearing action, where the lower jaw moves sideways while the upper jaw stays still.

Watch your horse eating hay – the movement is an expansive sideways shifting of the lower jaw, called the power stroke. This power stroke not only grinds the food, it also wears the teeth down as they grind across each other. The leading edges – the outside edge of the top teeth and the inside edge of the lower teeth – do not get worn to the same degree as the rest of the tooth. This means that the enamel on the leading edges remains.

Signs of dental disease

Dental disease in horses can manifest itself in a number of ways. Firstly, painful, sharp enamel points can cause pain on contact with the bit, so horses will exhibit head tossing and reluctance to take a contact. A sore mouth caused by painful gums and overgrown teeth can cause the horse to drop food – known as quidding – lose weight, or to drool and have smelly breath.

Sharp edges

Perhaps the most common dental abnormalities are sharp enamel points caused by a lack of wear of the enamel edges of the teeth. These are most common on the outside of the top teeth and the inside of the bottom teeth, and if left untreated, can cause ulcers and lacerations to the tongue and the inside of the mouth.

Enamel points will often occur more rapidly on horses that eat large amounts of hard feed, compared with those on grass and hay-based diets. This is because horses have to chew hay more to swallow it. Consequently, the power stroke is exaggerated, which in turn causes more even tooth wear. When eating hard feed, horses use smaller jaw movements as these feeds do not need to be chewed so much. This causes more uneven tooth wear and accelerates the formation of enamel points.

their adult life. This compensates for the high rate of wear associated with the teeth permanently grinding against each other.

The teeth are composed of large folds of a substance called dentine, surrounded by enamel. Around the edge of the tooth is a layer of cement. Enamel is the hardest substance and wears very slowly. Dentine is slightly softer, and cement softer still.

As teeth grind upon each other, the cement is worn down more quickly than dentine and enamel. This leads to uneven wear. To an extent, this process is helpful as it creates an increased grinding area for the horse to chew his feed.

Grinding action

Once food has been gathered into the horse's mouth, it is mixed with saliva by

Enamel points are easily identified at your horse's dental examination, and can be removed with routine rasping.

Treating abscesses

Abscesses occasionally occur in horses' cheek teeth. The cause can be hard to discover: sometimes it is due to infection tracking up the centre of the tooth into the pulp cavity (dental caries). It can also be due to tooth fractures exposing the living pulp of the tooth, which will then die.

The manifestation of the tooth root abscess depends on the position of the tooth. The first three upper-cheek teeth root sockets sit embedded in the skull. Infection of their roots causes them to swell, due to a build-up of pus. The swelling can often be seen on the side of the face, and will eventually burst if left untreated.

The three back-teeth root sockets sit within the sinus cavities. Tooth root



How often should teeth be rasped?

As all horses are individuals, kept in different ways with different diets, each horse should be treated as a case-by-case basis. Some horses will get sharp enamel points after six months, others after a year. Those patients with more serious problems, such as missing teeth, may need checking more often. Your vet or EDT will be best placed to advise you on the frequency of re-examinations.

dedicated equine healthcare

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A gag is fitted to allow access to the cheek teeth.



Sharp enamel points are removed using a rasp.



The teeth are checked for abnormalities.

abscesses here tend to burst into the sinuses. The sinuses naturally drain into the nasal cavity, so infection will cause a smelly discharge down the nostril.

Cases like these should immediately be seen by a vet, who will take X-rays to try to discover which tooth was affected and the severity of the infection. Although early cases may be managed using antibiotics, removal of the tooth is usually required.

Correcting an overbite

Rostro-caudal displacement is when the horse's top teeth are positioned slightly in front of their bottom teeth. This means there is no wear on the front part of the first upper tooth at the top and the back part of the last lower tooth at the bottom.

Over a long period of time these areas will become overgrown, because they are not getting regularly worn down, and enamel hooks will form. These can get large and painful. The ones at the front of the mouth can be easily seen, but those at the back require the use of a gag to diagnose.

The best treatment is to remove these hooks. Power tools will often be used to grind them down. Sedation is advised for hooks at the back of the mouth, as this will make the job easier for the vet or EDT and less stressful for the horse.

Loose teeth

As horses age, their teeth will naturally start to come loose. These teeth can be

sites of constant pain, with food material being packed into the gums and causing gum inflammation. The teeth can move into an abnormal position, cutting into the gums or the tongue. If possible, loose teeth should be removed.

Missing teeth

When teeth fall out or are removed, a gap is left. The opposing tooth, which is normally worn down by the missing tooth, no longer has anything to grind on. Consequently, the tooth will start to grow at twice the rate, up to 1cm a year. Over a period of time, the tooth will become overgrown. This is sometimes called 'step mouth'.

Such overgrowths can be removed with motorised dental equipment. Care must be taken when reducing overgrowths so as not to enter the living pulp cavity of the tooth.

Tooth removal

Traditionally, cheek teeth have been removed under general anaesthetic. The surgeon knocks the tooth out into the mouth using a large hammer and chisel (called a mallet and an osteotome). This is a technically very difficult procedure and is also prone to problems, with as many as 50 per cent of cases requiring a second surgery due to persistent sinus infection.

This has led to more interest being taken in removing teeth under standing sedation. A large pair of molar extracting forceps is secured to the tooth, which is

wiggled until it comes out. This requires patience (it can take many hours per tooth), and is only suitable for some cases. However, when successful the procedure can reduce the post-operative complication rate considerably.

Wave mouth

With different speeds of wear of the different components of the tooth, the equine teeth take on a ridged appearance.

As horses get older, this difference in wear may become exaggerated and lead to areas of high ridges and large troughs within the mouth. Such a mouth is known as a 'wave mouth'. It can also be caused by opposing teeth erupting at different times from each other, so one tooth gets a head-start to its growth, and will continuously wear down its opposite number.

Debris build-up

This is the accumulation of calcified deposits, especially around the tushes. Geldings in particular can accumulate large amounts of the plaque-like debris in a ball around their teeth.

In horses this is usually insignificant and can be simply removed using dental elevators or forceps.

Wolf teeth

Wolf teeth are located at the front edge of the horse's molars. They are vestigial structures, which means they no longer have a function. They are generally quite small, and sit just above the gum line. Debate has ranged over the significance of these teeth in horses with biting problems, and many are routinely removed to prevent issues.

They are often accompanied by sharp enamel points on the adjacent cheek teeth. These cut into the gums when a contact is made, and are probably responsible for more biting problems than wolf teeth. Wolf teeth are likely to be problematic if they are loose or if they haven't erupted through the gum (such teeth are called 'blind').

Wolf teeth should be removed with the horse sedated and with local anaesthetic around the roots. They should be cored out with dental elevators to ensure full and safe removal of all the roots of the tooth.

Expert file

Mark Tabachnik MRCVS is a partner at Wright & Morten Veterinary Surgeons in Cheshire, and is in charge of the equine side of the practice. He has a particular interest in equine lameness, anaesthesia and dentistry.

Mark holds a Certificate in Equine Practice, awarded by the Royal College of Veterinary Surgeons. He spends a lot of his weekends vetting at local endurance and eventing competitions, and he also presented the series, *Vets on Call*, for All 4 Horses TV. Visit: www.maccvets.co.uk.



■ Wright & Morten Equine – Dentistry

Mark Tabachnik and Vicki Nicholls are both qualified Equine Dental Technicians. As such we feel we are perfectly placed to provide your horse with all his dental healthcare requirements, from routine rasping to more complex corrections and extractions. We also deal with referrals from vets and other equine dental technicians.

Mark Tabachnik – Mark is our equine partner. He is responsible for the smooth running of the equine practice and the Somerford Park Clinic. Mark has a particular interest in equine lameness and oversees our complex lameness cases. In September 2004 Mark gained a Certificate in Equine Practice awarded by the Royal College of Veterinary Surgeons. Mark has a special interest in equine dentistry. He is a fully qualified Equine Dental Technician – one of only a few vets to be dual qualified.

Vicki Nicholls – Vicky joined us in March 2008. Vicky has completed a residency in equine medicine in the United States and is primarily interested in Equine Medicine and is studying towards her Royal College Certificate in Equine Medicine. Vicky is also involved in the equine anaesthesia at Somerford Park. Vicky is also a qualified Equine Dental Technician and as such is very involved in equine dentistry.

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