

Practical Field Dentistry

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Before performing any dental procedures a thorough examination of the horse is necessary. This exam should start with an external evaluation of the head and mouth. Asymmetry of the jaws due to trauma or congenital factors will have an adverse effect on dental function. A common reason for equine dental work is to treat or prevent pain caused by interaction of the bit and the teeth. Many bits with hinged mouthpieces and the associated headstall will apply pressure on the cheeks. Palpation over the upper arcade of teeth through the cheeks may produce a painful reaction associated with sharp enamel points on those teeth. Eliminating these sharp points may eliminate inappropriate reactions by the horse to the bit. Firm swellings on the mandible associated with eruption of permanent cheek teeth may be seen in young horses. These swellings are rarely painful to palpation but have been mistaken for strangles abscesses or trauma by some horse owners.

Because most dental procedures are performed on cheek teeth, the evaluation of incisors is sometimes overlooked. Incisor function is essential for the grazing horse. Horses being fed hay or pelleted feeds do not require functioning incisors but incisor abnormalities may interfere with chewing. Trauma and abnormal wear associated with overjet or parrot mouth conformation are the most commonly encountered problems associated with incisors. Horses that crib will also wear the upper central incisors excessively. Some traditional horsemen may object to dental procedures on incisors because it obfuscates age determination. Many recent studies have suggested that age determination by teeth is often inaccurate so incisor modification to improve the health of the horse would seem appropriate.

As we continue our journey into the horse's mouth we next encounter the canine or bridle teeth. These range from large fangs in stallions or geldings to completely un-erupted in some mares. If these un-erupted teeth are close enough to the surface to cause a painful swelling, contact with the bit may result in discomfort. Canine teeth, unlike most other teeth in the horse's mouth, do not continue to erupt throughout the lifetime of the horse. When greater than one third of this tooth is removed, the pulp cavity is opened resulting in possible infection and death of the tooth.

Wolf teeth are the small vestigial first upper (and rarely lower) premolars. These teeth are inconsistent and may not erupt or only erupt unilaterally in some horses. They are often shed with the deciduous second premolar. Tradition has dictated that wolf teeth cause biting problems and should be removed. Most wolf teeth do not cause problems but occasionally sharp teeth or teeth that are displaced buccally will be painful with the bit.¹

Evaluation of the cheek teeth is more challenging due to their anatomic location. Some horses may require sedation to perform an adequate evaluation. A mouth speculum has been advocated for use in all horses.² This author believes an effective examination can be performed without a speculum on many compliant horses. A bright light source is essential. The 2 AA battery Maglight is an excellent choice. It is small enough to fit comfortably in the mouth, is very bright, and is durable enough that the horse will not damage it by biting. The upper arcades are approximately 30% farther apart than the lower arcades. Sharp enamel points on the buccal surface of the upper arcades and on the lingual surface of the lower arcades may result in lacerations or ulceration of soft tissue. Fractured, missing, excessively worn, or overgrown teeth may be seen. The normal molar table is angled slightly so the lingual surface of the lower arcades and the buccal surface of the upper arcades are slightly longer. Lateral excursion of the mandible while the upper and lower jaws are held together may be used to evaluate grinding. An excessively angled (sheared) molar table will inhibit lateral motion while excessive length of incisors will prevent contact of grinding teeth. There is great variation in amount of lateral excursion due to age and conformation of the horse. Most horses will have lateral excursion of about 0.5 to 1.5 times the width of an incisor in either direction.

Treatment in equine dentistry is now more than just floating a few strokes with a rasp. Everything from sharp enamel points to large overgrowths can be treated with manual tools but are often resolved much faster with the power equipment. Power equipment also decreases labor and time making it cost effective for the practitioner. One concern is that too much tooth can easily be removed. Examples include reducing canine teeth to the gum line, or forming radical bit seats that actually enter live pulp channels on tooth 106 and 206. Excessive tooth removal from the occlusal surfaces of cheek teeth removes transverse ridges which are important for grinding and shortens the effective life of the tooth.

Recent articles consistently refute the notion that floating teeth improves digestibility of feeds. It is very controversial whether dentistry is valuable to improve performance of equine athletes. Equine dentistry has one undeniable benefit—to reduce pain in the mouth. Sharp or misplaced teeth that are causing damage to soft tissues, or diseased teeth must be remedied to make the horse's life better.

1. Easley JK. Equine Canine and First Premolar (Wolf) Teeth, AAEP Proceedings 2004, pp 13-18.
2. Johnson TJ. Correction of Common Dental Malocclusions with Power Instruments in *Current Therapy in Equine Medicine* 5, 2003, ed. N E Robinson, pp. 81-87.
3. Carmalt JL. Evidence-Based Equine Dentistry: Preventative Medicine in *Vet Clin Equine* 23:2, 2007; pp. 519-524.