Modern Equine Dentistry and Oral Health

Produced by
the British Equine
Veterinary Association

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Modern Equine Dentistry

- Scientific advances have been made through veterinary research and evidence based medicine.
- This research informs the practice and education in veterinary dentistry.
- Research can validate or discredit previous dogma.
Scientific Advances in Equine Dentistry

- Better understanding of dental anatomy and physiology-
  - Teeth are sensitive living tissue
- Better understanding of dental pathology
  - Dental disease is painful and can affect the horses overall health.
  - Disease prevention strategies
Scientific Advances in Equine Dentistry

- Better diagnostic techniques
  - Earlier more sensitive disease detection.
  - Better understanding of prognosis
  - Better treatment plans
- Appraisal of treatments.
  - Selection of the appropriate treatment provided by appropriate person
  - Avoiding risks associated with treatments done in an inappropriate fashion.
Technical advances in the practice of dentistry

- Development of improved techniques
- Development of newer safer tools
- Safer use of existing tools
- Avoiding risks associated with inappropriate treatments
Modern Equine Dentistry

- Advances in:
  - Equipment
  - Understanding of physiology e.g. chewing cycles
  - Knowledge of dental diseases, anatomy
  - Understanding of effects of dentistry

'Veterinary' approach to dentistry
Preventative healthcare

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Signs of dental disease

- Difficulty chewing
- Chewing one side only
- Pain when being ridden
- Resistance to the bit
- Head tossing
Signs of dental disease

- Losing weight or reduced exercise tolerance as a result of poor nutritional uptake especially in winter
Signs that your horse may have oral pain or dental disease

- Spilling hay or other food when eating – ‘quidding’
Signs of dental disease

- Accumulating food in the cheeks
Signs of dental disease

- Halitosis
- Smelly discharges from the nose
Signs of dental disease

- These signs *may* indicate dental disease but they might also involve other body systems.
- An examination of the mouth should be performed as part of a general physical exam.
- Your vet is probably the person best educated to assist and advise you if you suspect your horse to be suffering from an oral or dental disease.
Some facts about the horse’s dental anatomy

- Foals are born with deciduous incisors and premolars.
- These deciduous (milk) teeth are replaced by 36-44 adult teeth between 2 and 5 years of age.
- During chewing horses wear away the surfaces of their teeth.
- Horses teeth continue to emerge from the jaw throughout its life – using the ‘reserve crown’.
- Aged horses run out of teeth from 25-30 years of age.
The horse’s dental anatomy

- The surface of teeth have ridges to slow the rate of wear.
- These ridges are made up of hard enamel sandwiched between slightly softer dentine.
- Damaged enamel cannot repair itself.
- Upper molars – are different to lower molars and have ‘infundibulae’ – (cement-filled enamel cones).
The horse’s dental anatomy

- Inside the dentine is the ‘pulp’ - the blood and nerve supply to the living cells of the tooth.
- The tooth is attached to the jaw by the periodontal membrane and ligament.
- The dentine, pulp and periodontal membrane all contain nerves which can make them sensitive.
- The pulp and periodontium contain a rich lattice of blood vessels which can bleed when damaged.

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Horse’s diets

- Horses have evolved to eat grass which can be fed as preserved forage.
- Grass contains silicates which causes wear at the occlusal surface.
- Concentrates cause less attrition (wear of the teeth) and require less chewing.
Horses action when chewing

- Prehension of the food using the lips and incisors
- Use of the tongue to direct the food to the cheek teeth
- Crushing of the food between the cheek teeth on *one side of the mouth at a time* in a circular motion
Abnormal angle of occlusal surface with tooth fracture (109)
Some examples of common dental disorders

- Dental disorders in the horse may be the result of:
  - Developmental disorders
  - Abnormalities resulting from uneven wear
  - Acquired diseases
Avulsion fracture of the incisors
Incisors with non vital pulp exposures – ‘dead’ teeth
Aged horse with abnormal incisor wear
Periodontal and gum disease of incisors
Overshot jaw – mild ‘parrot mouth’
Supernumerary incisors
Incisor with caries
Disorders affecting the cheek teeth

- Severe prominences as a result of uneven wear – ‘shear mouth’
Laceration and ulcers of the gums and tongue
Cheek / lip trauma due to bit abrasion
Wolf tooth in situ and after removal
A large rostral focal dental overgrowth resulting from uneven wear
Misalignment of the cheek teeth
Caries (dental decay) of a mandibular cheek tooth
The use of a mirror to demonstrate deep caries of a maxillary molar
Jaw swelling from an infected mandibular tooth
Facial swelling due to infected maxillary premolar
Maxillary teeth with extensive caries (decay)
Food impacted between displaced mandibular teeth with abnormal gaps (diastema)
Deep periodontal disease caused by deeply impacted long-fibre food
Modern Routine Dental examination

- Taking complete relevant medical history
- Careful examination of head and mouth (and other body systems if indicated)
- Examining for sores, ulcers, other lesions
- Looking for gaps between teeth, impacted food
- Examining for disease – periodontal, caries, apical
- Checking for symmetry – and even dental wear
- Checking normal eruption of teeth for the horse’s age
Examination of the gums and incisors
Examination of the incisors
Examination of dental occlusion
Rinsing food from the mouth
Safe restraint of the horse for oral procedures

- The examination should be done in a quiet stable or stocks in a clinic
- An experienced handler should be in attendance, with adequate protection.
- The horse should be restrained in a humane manner dependant on the temperament of the horse and the tasks to be undertaken
  - Sedation is ideally suited to modern dentistry
Oral Examination: mirror demonstrating cemental caries and periodontal disease
Horse undergoing a radiographic examination for suspected dental disease
RestRAINT FOR EQUINE DENTISTRY

• The examination may be an uncomfortable experience for the horse and stressful for the owner and vet
• Many horses benefit from chemical sedation
• The advantages to the horse in being sedated greatly outweigh the disadvantages

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Indications for sedation

• Tasks which can sometimes be done without sedating the horse
  – Basic visual examination in a quiet horse
  – Reduction of minor overgrowths in a quiet horse
  – Routine rasping as part of an annual health check in a quiet horse

• Tasks which can be done more thoroughly in a sedated horse
  – Careful digital examination of the mouth
  – Visual examination using a mirror, picks and probes
  – Controlled use of motorised tools
  – Reduction of larger overgrowths
  – Cleaning diastema
  – Any procedures on an anxious horse

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Advantages and disadvantages of sedation

**Advantages**
- The procedure is less painful for the horse.
- The cheek muscles relax, increasing tolerance of the speculum.
- It is safer for the personnel.
- Instruments can be used with greater precision reducing risk of accidental damage.
- The procedures can be done quicker and to a higher standard.

**Disadvantages**
- The horse may be drowsy for a while afterwards preventing immediate riding.
- The overall cost may be slightly increased.
- Sedation MUST be administered by a vet.
Instruments for Modern Equine Dentistry

- A speculum, washing device, light source and dental picks are usually used for an oral examination.
- Removal of prominent excessive dental tissue can be done with manual and powered instruments.
- Both are safe and effective if used correctly.
- Adequate restraint is essential for safe and precise dental treatments and to reduce the likelihood of the horse experiencing unnecessary pain.
- Sedated horses may appreciate some form of head support.
Unsafe equine dentistry

- Large area for horse to escape
- Horse is fully alert and ready to jump if pain experienced
- Handler scanning horizon and not in full control of the head
- Operator is exhibiting “Three musketeers” posture
Safe equine dentistry with powered instruments

- The horse is relaxed with head supported
- The operator is in a safe, comfortable position with full control of instrument
- Horse is restrained
- Assistant positioning horse is enabling precise work

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Examples of manual instruments used for dental treatments
Examples of some powered dental reduction devices
Relaxed horse undergoing manual treatments
Maxillary teeth with sharp overgrowths and wolf tooth
Wolf tooth extraction, careful reduction of sharp overgrowths
Lower premolar after rostral profiling
(lower ‘bit seat’)
Buccally displaced fractured tooth
Periodontal lesion after diastema widening, debridement and bridging
Removal of diseased teeth

• Can be a major procedure and must legally be performed by a veterinarian
• Can sometimes be done in adequately sedated horse, but may require anaesthesia.
• Complications can occur
Complimentary dental care

- Equine Dental Technicians (EDTs) are legally allowed to perform procedures which do not come within the Veterinary Surgeons Act (1966).
- This excludes ALL invasive procedures involving living tissues, and administration of veterinary (POMV) drugs.
- BEVA only accredits those dental technicians who are members of the British Association of Equine Dental Technicians (BAEDT) and BEVA members collaborate with this group by advising and administering sedation for BAEDT members to undertake *legal procedures only*
Thank you for your attention

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