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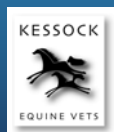
Equine Dentistry

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INVERNESS

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Equine Dentistry

- Equine dental treatment
- Some examples of dental disease and therapy



Signs of Dental Disease in Horses

- Many horses will suffer dental disease without showing any obvious signs of disease

Affected Horses may:

- Drop partially chewed food (quid)
- Pack food into cheeks
- Have poorly digested food present in faeces
- Have biting or head carriage problems
- Suffer weight loss & lack of condition

Frequency of routine dental examination and floating

Age - Young horse shedding caps & older horse with some missing teeth need frequent care

Work - e.g. dressage horse check 6 monthly vs. retired horse, brood mare examine >12 monthly



Frequency of routine dental examination and floating

Predisposing abnormalities?

e.g. slight parrot mouth, neglected overgrowths or a displaced tooth?
Will need more frequent rasping

Level of concentrate feeding

e.g. fully outdoors permanently - may have little enamel overgrowths vs. horse fed 5kg of hard food per day



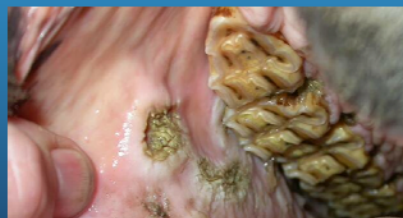
Equine dental treatments

- Who can perform equine dentistry?
 - Any treatment other than manual rasping of horses' teeth is strictly speaking an act of veterinary surgery



Equine dental treatments

- The examination of the oral cavity and manual rasping of horses' teeth is often referred to as a category 1 dental procedure
 - This is the removal of dental overgrowths no greater than 4mm using hand tools only and it includes rostral profiling of the first cheek teeth (maximum 4mm reductions), previously termed 'bit seat' shaping



Equine dental treatments

- The removal of supragingival calculus and loose caps are also considered as category 1 procedures
- It is envisaged that category 1 procedures should be performed by lay persons who have had some training in equine dentistry



Category 2 procedures

- BEVA has promoted the training of EDTs to perform additional dental procedures, often referred to as category 2 procedures and these include:
 - The removal of erupted, non-displaced wolf teeth under veterinary supervision
 - Removal of dental overgrowths without the risk of exposure of the pulp
 - The use of motorised dental instruments where they are used to reduce focal overgrowths and remove sharp enamel points only, in horses sedated appropriately
 - The removal of genuinely loose teeth

Category 2 procedures

- Removal of dental overgrowths without the risk of exposure of the pulp
- The use of motorised dental instruments where they are used to reduce focal overgrowths and remove sharp enamel points only, in horses sedated appropriately



Category 2 procedures



- The removal of erupted, non-displaced wolf teeth under veterinary supervision
- Sedation and local analgesia required
- Wolf teeth which are uninterrupted or in an abnormal position may require radiography and it is usually a more involved procedure to remove them

Loose teeth?

- The removal of loose teeth or dental fragments with no periodontal attachments which are digitally extractable without the use of instruments



Cheek tooth extractions

- Why is this an act of veterinary surgery?
 - Very high incidence of complications
 - Co-existing sinus or bone infection
 - Medicines and radiography required
 - Technically demanding
 - Risk of real harm to the animal unless done correctly



Working alongside EDTs: RCVS advice

- the EDT has successfully completed a training course approved by DEFRA for the purpose of the proposed Ministerial exemption order
- the veterinary surgeon is satisfied that the EDT is competent to carry out the procedures in question
- the EDT carries out only category 1 and 2 procedures (the practice of veterinary surgery that is suitable for trained EDTs to undertake and expected to be permitted by the Ministerial exemption order)
- the EDT works under the direction, and if appropriate the supervision, of the veterinary surgeon
- the EDT reports to the veterinary surgeon, in a professional manner, all category 2 procedures carried out on horses under the care of that veterinary surgeon
- the veterinary surgeon has informed his or her professional indemnity insurers of his or her involvement with EDTs.

Sedating for paraprofessionals

- EDTs and other paraprofessionals may not obtain, prescribe or administer medicines designated as POM-V
- The attending veterinary surgeon should satisfy himself of the ability of the EDT to perform the procedure on the horse
- Horses should not be tranquilised for illegal acts
- Vets are advised to examine the animal prior to the sedative being administered and remain present for the duration of the procedure
- Liability may lie with the vet if the procedure is performed badly or to the detriment of the animal

Working alongside EDTs: BEVA guidance

- Support the services of skilled dental technicians who are members of the BAEDT who work within the ethical and legal objectives of the profession
- Encourage the dental technicians to arrange for requests for sedation directly, (and not via the clients) to establish the estimated length of the procedure and the requirements for sedation
- Discuss the proposed procedures before arranging the visit
- Discuss the legal position with the client before attending, including the role of the veterinarian and paraprofessional
- If possible, remain present during the procedure and establish the habit of examining the horse's mouth after the procedure.

Dental Disease and Therapy

- Incisors
- Diastemata
- Dental Caries
- Other cheek teeth disorders
- Apical infections



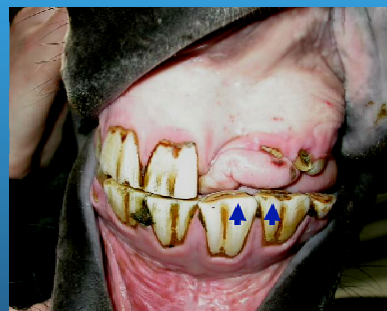
Supernumerary Incisors



- Develop in addition to the 6 normal permanent adult incisors
- Have long (up to 7cm) reserve crowns
- Lie close to reserve crowns & roots of normal permanent incisor
- Usually cause little problem
- Often best not to remove

Incisor reductions

- Trauma to the incisor arcade is common
- Missing or malerupting incisors can result in overgrowths



“Slope” or “Slant” Mouth



- Indicates the horse has been chewing in just *one* direction
- Often is sign of a severe problem with cheek teeth
- Diagnose and treat the cheek teeth problems first

Reducing sloping incisor overgrowths
after correcting the underlying CT problems



Diastema - the hidden menace



- One of the most painful conditions in the horse's mouth
- Often difficult to identify
- Causes halitosis and significant gingival and periodontal disease
- Can eventually lead to tooth loss and apical infections

Incisor Diastema



- There should be no spaces between the occlusal surface of adjacent teeth
- Narrow spaces can be most problematic as they can act like valves i.e. diastema(ta) trapping food

Cheek Teeth Diastema

- Food trapped between CT
- Will eventually get packed into periodontal spaces
- Difficult to diagnose
 - usually caudal, lower CT affected
- A small diastema can be more problematic than a large diastema



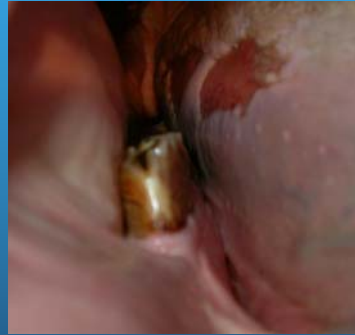
Treatment of Diastemata

- Long handled dental pick
- High pressure water or air picks
- Transient improvement only



Treatment of Diastema

- Correct other dental problems
- Remember to inspect soft-tissues
- Assess level of pain by palpation
- Probe periodontal pockets



Treatment of Diastema

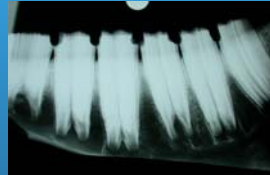
- Replace long fibre food e.g. hay with grass, or short chopped foods e.g. grass or alfalfa cubes can be successful - regular dental check-ups are essential



- Removal of overgrowths that develop opposite diastemata is essential

Widening Diastemata

Danger of opening into pulp of tooth
Danger of overheating adjacent pulp
Careful evaluation of cases and training of personnel required



Widening a Diastema

A specialised veterinary procedure

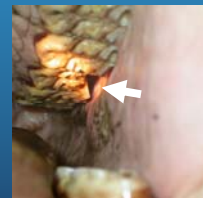


Dental Caries



Lateral "Slab" Fractures of Cheek Teeth

- These fractures develop spontaneously
- Common in the upper cheek teeth especially 4th (09)
- Fracture tends to displace into the cheeks - painful



Cheek Tooth extracted because of midline sagittal fracture caused by advanced infundibular caries



Severe caries of upper cheek teeth can be cleaned out ("sandblaster system") and filled to help prevent fracture and apical infection of tooth



Dental Caries



- Reduction of opposing tooth (taking opposite tooth out of apposition) can help
- Advising owner to monitor for dysphagia
- Regular 6-monthly checks

Treatment of incisor caries

Clockwise: Removal of caries, apply acid etching soln, apply bonding agent & defect filled with a modern composite filling



Cheek Teeth Displacements

- **Developmental**
- Overcrowding of arcades during eruption -
 - often bilateral
 - Usually 4th and 5th cheek teeth (09s & 10s)
 - Medial or lateral displacement
 - Rotation of tooth may also be present
- **Acquired** More common
- Usually lower 10s and 11s **in older horses**

Cheek Teeth Displacements

- Will result in malocclusion and thus overgrowths and also diastemata and periodontal disease

TREATMENT

- Removal of overgrowths every 6 months with mild displacements and widening of diastemata
- Extraction of tooth if severe displacement and periodontal disease present



Developmental
cheek teeth
displacements
of 409 and 310

Supernumerary CT (Polyodontia)

- Means more than 6 permanent cheek teeth in a row
- A caudal (7th) upper CT is most common
- Supernumerary tooth may be connated (i.e. a double tooth)



Smooth Mouth - Old Horse

- Cheek teeth enamel largely worn away
- Some teeth worn down to individual roots
- Softer dentine & cementum become smooth - no good for grinding
- These horses will need young grass or chopped forage to maintain weight



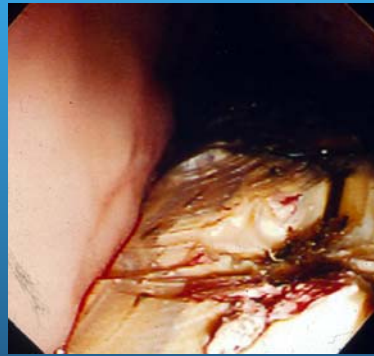
Motorised dental instruments

- Speeds up work, but beware of thermal damage and injury to soft tissues



Inappropriate power instrument floating

- Soft tissue damage and haemorrhage
- Excessive removal of occlusal surface including dentine
- Deep exposure of odontoblast processes - painful chewing for weeks
- May expose pulp with resulting apical infection



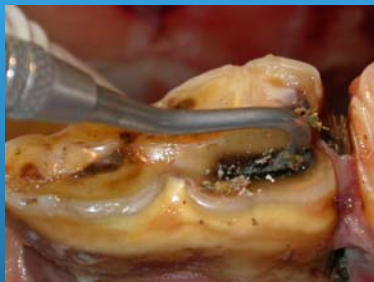
Apical (tooth root) infections in cheek teeth

- Because of long reserve crowns of equine cheek teeth - these infections will usually cause deep infections of the supporting bones
- The signs will depend on which tooth and so which supporting bones are infected

Ventral swelling and excoriation of the mandible due to apical infection of a mandibular cheek tooth



Exposure of the pulp causes some apical infections



Sinus tract and swelling of ventral mandible due to cheek teeth apical infections in young horses



Diagnosis of apical infections requires radiography of suspect teeth

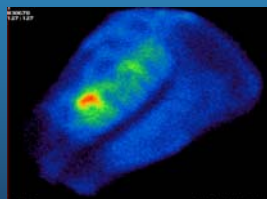
Some dental radiographs can be difficult to interpret - even by "experts"



Dental examination in a horse with sinusitis -to assess caudal maxillary CT



Diagnosis of sinusitis may require endoscopy, radiography, sinoscopy and scintigraphy



Treatment of Apical Infection

- Very early cases may respond to prolonged antibiotic courses
- Dental Extraction usually required by:
 - Oral Extraction
 - Repulsion
 - Buccotomy
- Endodontic (Root canal treatment)
 - poor success to date

Infected tooth being punched into oral cavity



Repulsion of cheek Teeth

- Teeth are often fragmented during repulsion
- Many cases will need further treatment

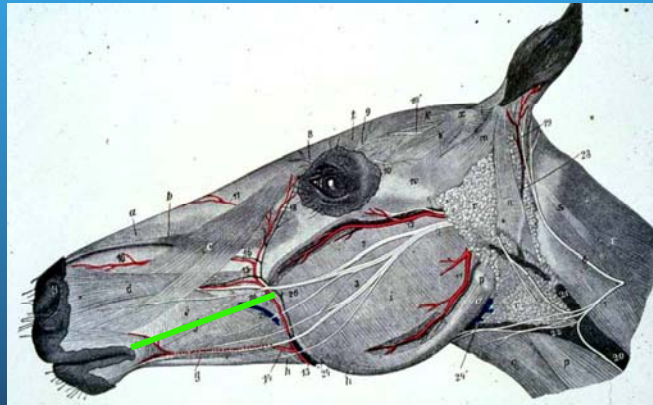


Oro-mandibular fistula following dental repulsion



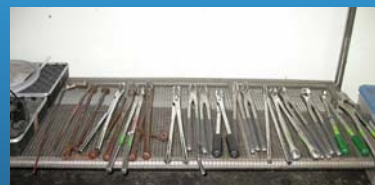
Buccotomy dental extraction

An incision is made through the cheeks to gain access to the teeth - risk of nerve and parotid duct damage



Oral extraction of cheek teeth

- An old-fashioned method recently re-introduced
- general anaesthesia not required
- reduced level of post-operative problems
- wide range of instruments and good technique required



Use of "molar" Separators During Oral Extraction of 107



Oral Extraction of 107 in 6 yo horse

- Fulcrum being used on a well-loosened tooth



Successful Oral Extraction in Young Horses

Left: Mandibular CT partly elevated prior to extraction

Right: 10cm long upper cheek tooth orally extracted in a 5yo



Acknowledgements

- Professor Padraig Dixon, University of Edinburgh
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