Caring for the geriatric donkey with dental disease

Many donkeys are now kept as pets rather than as working animals, meaning they often live longer, with many now reachinng 20 years old and being classed as geriatric. These patients often require specialist treatment and management, as they are prone to conditions such as dental disease. Vets and registered veterinary nurses who are caring for geriatric donkeys with dental disease at their practice can help to increase comfort in several ways. The owners of geriatric donkeys with dental disease should be fully involved with any treatment plans and fully supported through any management changes.

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Geriatric donkeys are at a high risk of suffering moderate to severe dental disease (Fernandez et al, 2021). This is a significant consideration, as it is well recognised that dental pain is one of the most severe sources of pain in horses and ponies, and this is no different for the donkey (Evans and Crane, 2018). Dental pain can lead to inappetence, colic and hyperlipaemia (Burden et al, 2010). Therefore, it is important that vets and registered veterinary nurses (RVNs) working in equine practice are aware of the individualised care required by geriatric donkeys with dental disease.

Dental disease in geriatric donkeys

Some specific dental diseases occur more commonly in geriatric donkeys. In a study involving dental examinations of 357 donkeys, Du Toit et al (2009) found a high prevalence of diastemata, with 76% in donkeys aged 20 years and over affected. Diastemata can be defined as abnormal spaces between adjacent teeth with or without food impaction (Du Toit et al, 2009). The presence of missing teeth was also significantly associated with age, with a prevalence of more than 41% in donkeys aged 20 years and over. Du Toit et al (2009) also found that overgrown teeth were more likely to be present in older donkeys, with a prevalence of 60% in donkeys aged 20 years and over. Additionally, they found that worn teeth, periodontal disease and displaced teeth were also positively associated with old age in the donkeys studied. Du Toit et al (2009) highlighted the importance of managing dental disorders from a young age in donkeys, to prevent progression of significant dental disorders early on in life, especially as many donkeys can live for 35 years or more.

Vets and RVNs can play a role in owner education by discussing and recommending ideal times for donkeys to receive a dental examination (*Figure 1*). Fernandez et al (2021) recommended an annual dental examination for adult donkeys as a minimum, and a 6-monthly examination for geriatric donkeys, all of which should be performed by a member of the British Association of Equine Dental Technicians or a veterinary surgeon. As donkeys are commonly kept as companions, the signs of dental disease can be overlooked, so it is essential that owners are taught to look out for signs of dental disease in their geriatric donkeys. These signs include:

- Difficulty chewing
- Dropping food out of the mouth (quidding)
- Excessive salivation
- Behavioural changes
- Difficulty prehending grass
- Halitosis
- Retention of partly chewed food in cheek pouches (food packing)
- Whole grains or long fibre in the faeces
- Nasal discharge
- Colic episodes
- Inability to eat or no desire to eat
- Weight loss (The Donkey Sanctuary, 2016).

Feeding geriatric donkeys with dental disease

Dental disease is common in geriatric donkeys and can often lead to an inability to chew long fibre forages, causing gradual weight loss, with associated depression, lethargy and colic. In serious cases, dental pain can lead to a donkey becoming inappetent and predisposed to hyperlipaemia (Burden et al, 2010). Therefore, it is critical for vets and RVNs to know how to care for geriatric donkeys with dental disease. The feeding plan for a geriatric donkey may need to be altered following an invasive dental procedure, or the diagnosis of a chronic dental condition.

Long fibre forages such as straw and hay should be replaced with alternative fibre sources that can be easily chewed and digested

Figure 1. Geriatric donkeys should receive a dental examination every 6 months.

Table one: Analgesic drugs for use in donkeys

Name of drug	Dose	Route	Comments for use in the donkey
Carprofen	0.7–1.3mg/kg every 24 hours	IV PO	Give IV as a single dose. Metabolised more slowly in donkeys.
Meloxicam	0.6mg/kg	IV	Not advised for use in donkeys – very short half-life.
Phenylbutazone	2.2mg/kg–4.4mg/kg, every 12 hours in standard donkeys, every 8 hours in miniature donkeys	IV	More rapid clearance than in horses. Administer twice daily to standard donkeys and three times daily to miniature donkeys.
Flunixin	1.1mg/kg, every 12 hours	IV	
Fentanyl			Larger dose patch on mg/kg basis required to achieve comparable plasma levels of fentanyl. Analgesic levels achieved more rapidly. More frequent patch changes required. Accurate dose rates not confirmed.
Tramadol		PO	Poor oral bioavailability (reported as 11.7%). Not recommended for use in donkeys.

Adapted from Evans and Crane (2018). PO = per os; IV = intravenous. Ectorphine must never be used in the donkey.

(Burden et al, 2010). Short-chopped products designed for laminitic patients can be suitable, and many of the low energy products can be used to replace all fibre sources. The vet or RVN should calculate the dry matter intake (DMI) requirements for the patients, and accurately calculate the amount to be fed daily. Feeds made up of short-chopped fibre should be provided frequently throughout the day. Feeding of such products ad libitum may lead to gorging in the short term, although their intake is often self-regulating after a few weeks (Burden et al, 2010).

For donkeys that do not require such drastic changes, small, frequent offerings of soaked high fibre nuts and unmolassed sugar beet can be fed alongside normal forage. Carrots, bananas and apples can be used to tempt an inappetent donkey. However, donkeys with poor teeth may struggle with these. In this case, carrots and apples can be grated and added to the feed. If this is not practical, mashed, tinned carrots or small amounts of apple sauce could be used (The Donkey Sanctuary, 2014). The donkey can also be taken out for short walks to hand graze or turned out in a small paddock, if they can still manage to prehend and chew grass effectively. If the donkey's diet needs to be changed long-term following veterinary treatment, the vet or RVN should fully involve the owner in the formulation of a new diet, as this will encourage a higher level of compliance.

Pain scoring and analgesia

The donkey is a stoic animal and rarely displays readily visible signs of pain, distress or fear. This makes inspection difficult and illness, pain and even severe conditions may be missed (Evans and Crane, 2018). It is essential that both RVNs and vets working with geriatric donkeys can accurately assess pain and treat it accordingly. Van Dierendonck et al (2020) created a composite pain scale and a facial expression pain scale specifically for donkeys. These scales have been proven to be valid and clinically applicable. The pain scales created and tested by Dierendonck et al (2020) should be taken into consideration when assessing pain in donkeys, as they differ slightly from the pain scales commonly used for horses. It is also important for RVNs and vets to teach the owners of geriatric donkeys to assess pain effectively, especially if the donkeys had a history of dental disease. This will allow subtle signs of disease to be picked up and treated earlier, which will benefit the welfare of the donkey in question. As owners are the first line of defence in terms of assessing the normal behaviour of their donkeys, they should be given help and support to do this accurately.

Analgesia should be carefully considered in geriatric donkeys with dental disease. Donkeys have a longer gut transit time than horses, which can influence drug absorption rates. Hepatic metabolism is often faster in the donkey. The volume of distribution is lower, the clearance rate is higher, and the half-life is shorter than horses and ponies (Evans and Crane, 2018). Therefore, shorter dosing intervals are generally advised over larger doses. Further information on types and doses of analgesics for donkeys can be found in *Table 1*. It is important that the vet or RVN involves the owner in discussions regarding the dose and frequency of analgesics, especially if the owner keeps horses as well as donkeys. Owners may not be aware of the differences in drug metabolism between horses and donkeys, and this could lead to inappropriate drug dosing and complications.

Conclusions

Dental disease is common in geriatric donkeys. Vets and RVNs can contribute significantly to the prevention, treatment and overall welfare of geriatric donkeys with dental disease. Owners should be educated regarding the appropriate timings for dental examina-

tions, correct feeding protocols following dental treatment and diagnosis, the identification of pain in donkeys, and the correct administration of analgesics to ensure that the donkeys with dental disease can be kept comfortable in the long-term. EQ

Conflicts of interest

The author has no conlficts of interest to declare.

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KEY POINTS

- Geriatric donkeys have a higher risk of moderate to severe dental disease.
- Some specific dental diseases occur more commonly in geriatric donkeys such as diastemata, missing teeth, worn teeth, periodontal disease and displaced teeth.
- Registered veterinary nurses and vets can play a significant role in monitoring dental disease in geriatric donkeys and educating owners regarding preventative treatment and care.
- Species-specific pain scoring, appropriate analgesia and modified feeding techniques will all be required to allow these patients to live a long and comfortable life.