Figure 3: Radiograph showing the left canine immediately after crown reduction/pulpectomy.

Figure 4: Radiograph of the same tooth 18 weeks postoperatively.

If performed bilaterally, it is a poor option for a young dog with regard to weakening of the rostral mandibles/symphysis.

Orthodontics has a number of options. Many have uncertain outcomes for reasons outwith the dentist's control. Orthodontics also carries questionable ethics.

Crown reduction and partial coronal pulpectomy is the author's favoured option. The root and most of the crown is retained (Figures 3 and 4). Pain is relieved immediately. The pulp remains alive and the dentin walls strengthen naturally over time. The success rate is very good, quoted at 92%. It is a technically demanding procedure best performed by experienced veterinary dentists.

Monitor tooth maturation at 4 and 16 months postoperatively. The Luotonen study noted around half of failed cases were found more than 1 year postoperatively.

References available on request.

KEY LEARNING OBJECTIVES

- Understand the condition of lingually displaced mandibular canines
- Know how and when to remove the deciduous mandibular canines

- Be aware of the options available for permanent mandibular canine teeth

MULTIPLE CHOICE QUESTIONS

1. At what age is surgical removal of the deciduous mandibular canines advised?
 - (A) 4 weeks
 - (B) 4 months
 - (C) 6 months
 - (D) As soon as diagnosed
2. For lingually displaced permanent canines, why are orthodontic options less favoured?
 - (A) Questionable ethics
 - (B) Uncertain outcomes
 - (C) Lack of day-to-day control
 - (D) All of the above
3. What proportion of the deciduous mandibular canine is root?

(A) 30%	(C) 50%
(B) 70%	(D) 80%

Local anaesthetic techniques for dental cases

Andrew Perry

This presentation is for the general practice clinician and registered veterinary nurse who wish to be able to employ simple and inexpensive locoregional anaesthetic techniques that will have a marked beneficial effect for their patients.

Pet owners are familiar with local and regional anaesthetic techniques performed in human medicine and are aware of their benefits. An often reported, owner concern regarding treatment of their pet's dental disease is the risk of the general anaesthesia required. Older patients are statistically more likely to be affected by dental disease, and also co-morbidities such as renal dysfunction and cardiac disease. The successful use of local anaesthetic techniques decreases the quantity of inhaled anaesthetic agents used, reducing their hypotensive effects, and allows for surgery in a pain-free field with the benefit of a significant improvement in postoperative pain levels. Rapid return to functional normality and early discharge improve owner perception of the success of treatment and increase owner confidence in the clinician.

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A review of local and regional anaesthesia methods, and when to use them, will be made by a pictorial approach to the key techniques: mandibular, infraorbital and maxillary nerve blocks.

Reported complications including intraneural and intravascular injection, haematoma formation, neuropraxia and injury to the globe and are common reasons inhibiting the use of regional anaesthesia by clinicians. Appropriate technique dramatically decreases the risks associated with regional anaesthesia.

Materials used to perform local anaesthesia of the head are inexpensive and widely available in practice. Local anaesthesia should be employed whenever the clinician believes that a procedure is likely to result in nociception. Situations where local anaesthesia may not be appropriate will be discussed. The importance of drug selection, both single agent and admixtures, and the time of administration in the workflow of the procedure will be discussed in order for the clinician to be able to achieve the maximum benefits afforded by regional anaesthesia.

KEY LEARNING OBJECTIVES

- Be able to select appropriate materials to perform regional anaesthesia of the oral cavity
- Understand the risks associated with individual regional anaesthetic techniques and how to minimize them

- Identify the appropriate technique for regional anaesthesia of a chosen region of the mouth

MULTIPLE CHOICE QUESTIONS

1. What is the duration of action of lidocaine?
 - (A) 30–90 minutes
 - (B) 2–3 hours
 - (C) 4–8 hours
 - (D) 12–18 hours
2. What proportional distance, along an imaginary line between the last molar and the angular process of the mandible can the mandibular foramen be located?
 - (A) 1/4
 - (B) 1/2
 - (C) 5/8
 - (D) 3/4
3. Accidental intravenous administration of bupivacaine can result in which of the following?
 - (A) Bradycardia
 - (B) Hypertension
 - (C) Tachycardia
 - (D) Hypothermia

Holistic approach to analgesia of dental cases including aftercare

Andrew Perry

The majority of oral pathologies result in some degree of nociception. Nociceptors are found in the dental pulp, periodontal ligament, gingiva, mucosa and the bones of the mandible and maxilla. The same neural pathways identified in humans are also found in companion animals. It can be inferred that lesions identified as painful in man are almost certainly painful in companion animals.

Many oral pathologies in animals are present, untreated, for an extended period of time. If the patient is susceptible this may result in the development of chronic or neuropathic pain and increases the challenge associated with managing pain in the preoperative, operative and postoperative phases.

Pain sensation is highly specific to the individual in humans and this may be similar in our patients. Additional factors, such as stress, have also been associated with increased sensitivity to pain in humans. Different oral pathologies are likely to generate different levels of nociception. Periodontitis may cause mild discomfort/

sensitivity until the tooth becomes sufficiently mobile, then a chronic pulpitis is induced. Acute abscessation of an endodontically compromised tooth or conclusive pulpitis will result in severe acute pain. Osteonecrosis, diffuse mucositis associated with gingivitis stomatitis and neoplasia are likely to induce high pain levels but of a more chronic nature.

Identification of disease and the extent of likely treatment is key in assessing the need, type and duration for pain management. Patients will benefit from preoperative pain medication if they are exhibiting significant discomfort. Control of pain in patients affected by feline orofacial pain syndrome or presumed neuropathic pain may be appropriate before surgical intervention is undertaken as this could worsen the condition rather than resolve it. Patients suffering from gingivitis stomatitis are commonly affected by oesophagitis and will benefit from pain relief from antacid therapy.

A review of the decision making pathway for selection of analgesic agents the author uses for the operative phase of therapy will be presented. This will include the use of 'rescue' protocols, including the use of intraoperative bolus and continuous rate infusions.

Management of postoperative discomfort is critical in achieving a positive outcome for the patient and achieving high owner satisfaction. A review of postoperative pain protocols will be undertaken, and this will be linked to the extent of surgical intervention and the pathology treated. Additionally, the duration of postoperative pain management will be discussed, and specific cases provided where extended duration of postoperative pain therapy may be indicated.