DENTAL ALVEOLAR INJURIES

Barden Greenfield, DVM, DAVDC
Your Pet Dentist of Nashville
Nashville, TN USA

OVERVIEW

Wigg's Veterinary Dentistry: Principles and Practice (2nd ed), describes traumatic dentoalveolar injuries (TDI) quite well and these injuries may be various. Those injuries can include disease of the support structure of the tooth (periodontal ligament and alveolar bone) or the tooth itself. Tooth trauma can be subdivided into those that involve the enamel, dentin and pulp. In addition, those tooth fractures may involve the crown, the crown and root, or the root. The decision as to what constitutes an emergency requiring immediate care and those that may be stabilized before anesthesia will be addressed.

TDI affects 1 in 4 patients, which puts it in rare air with regard to prevalence. Only periodontal disease affects more dogs (80%). Also, the chances of having more than one injury are high. TDI should be address as soon as practical, as morbidity increases and quality of life decreases. Periodontal pain and inflammation, endodontic pain and infection, osteomyelitis, and systemic dissemination of inflammatory mediators may contribute to an overall diminished quality of life and acute pain.

MAXILLOFACIAL TRAUMA (FRACTURED MAXILLA AND OR MANDIBLE)

Depending on how this trauma occurred will then vary how aggressively one would start to stabilize the fracture. Maxillary fractures may also have ocular and neurological trauma associated with them and each should be examined closely. Patients with CNS (central nervous system) trauma must be stabilized completely prior to undergoing an anesthetic procedure. Premature treatment using general anesthesia may have an adverse outcome so consultation with a neurologist or internist may be warranted. Historically, maxillary fractures should be stabilized at least 24-48 hrs. prior to undergoing anesthesia.

Mandibular fractures should be attended to as soon as practical and the main goal for treatment is to return the patient to 'normal' occlusion as quickly as possible. If there is no severe degloving injury or laceration, a tape muzzle may be placed with an Elizabethan collar, along with analgesics and antibiotics and the patient may be treated the following day. Waiting 3 days for a fracture fixation is not warranted due to tissue becoming devitalized quickly.

Survey radiographs offer very little insight in fracture displacement or involvement, and I recommend going straight to intraoral images, which offer greater detail of the fracture site and surrounding alveolar bone. Therefore, avoid survey films.

Methods of fixation involve: 22-26 ga wire via interdental or interosseous wiring; wiring with acrylic reinforcement; surgical plating; external fixation device; tape muzzle; and

ectomy surgery (for severe cases). One should NOT undertake fixation without knowing principles of oral surgery. Placement of a Steinman pin in the canal is contraindicated and constitutes malpractice. These should be avoided.

A video on how to make a tape muzzle is shown in this lecture.

GINGIVAL / LINGUAL LACERATION

Lacerations of the buccal mucosa or the tongue should be treated as soon a possible, to avoid further hemorrhage. Buccal mucosal lacerations should be treated by insuring to release the underlying periosteum, or the replacement suture will dehisce. 4-0 or 5-0 absorbable suture (chromic gut, 25-polyglecaprone) should be used. Laceration of the tongue should be sutured with the same suture above. The tongue has a tremendous ability to heal. *Watch for ventral tongue laceration due to sharp incisors!

COMPLICATED CROWN FRACTURE

If a strategic tooth fractures such as a maxillary or mandibular canine tooth acutely, this tooth can be saved via an endodontic procedure called a VITAL PULPOTOMY. The fracture has to be within a 48 hr. window. After 48 hrs, the tooth should be treated endodontically via a ROOT CANAL therapy or surgical extraction. Value of performing a vital pulpotomy is the vitality of the tooth is intact (pulp remains intact). The tooth can continue to mature via this process.

LUXATION, SUBLUXATION AND AVULSION

Luxation injuries are less prevalent than tooth fractures but do constitute an emergency. Luxated teeth mostly occur laterally. If this occurs acutely, the tooth may be able to replace in its normal alveolar position, then sutured and splinted. Splinting should be done with appropriate gauge wire +/- acrylics. Root canal therapy should follow in 7-14 days to allow for reestablishment of the PDL and help prevent ankylosis.

Avulsion is the complete removal of a tooth from the alveolus. Rarely does the owner notice this at time of occurrence. If there is no existing periodontal disease present, the tooth could be replaced in the alveolus or stored in milk, saline or saliva and transported to a veterinary dentist. If in a younger pet with no existing PD, this could be treated but rarely does this perfect scenario occur (owner notices acutely and a veterinary dentist in the area).

REFERENCES

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