Emergencies in Dentistry: common presentations

Viacheslav Eroshin, DVM, DAVDC, DEVDC
Emergency medicine – prevention, diagnosis and management of **acute and urgent aspects** of illness

- **Pain**
  - *same pathways, different expression*

- **Food prehension**
  - *inability and unwillingness*

- **Vital functions**
  - *abc algorithm*
Objectives:

- Recognize urgent presentations
- Understand pathophysiology of oral pain
- Avoid delayed complications
Categories of emergencies in dentistry:

- Dental trauma
- Non-dental injuries
- Inability or unwillingness to eat
Dental trauma

- Pulp damage
- Crown integrity
- Adjacent structures
Tooth crown fracture

Complicated Crown Fracture

Uncomplicated Crown Fracture
Enterococcus faecalis
• Painful?
• Vitality compromised?
• Practical to keep in mouth?
Preserves oral anatomy
Non-invasive procedure
1-year anesthetized exam
Eliminates problem completely
2-week healing recheck
Surgical procedure
Endodontic options

• **Standard** root canal therapy
  – complete cleaning, shaping and filling

• **Vital** pulp therapy
  – partial pulpectomy
Standard root canal therapy

- Successful in 94% (Kuntsi-Vaattovaara, 2002)
Apexogenesis – root formation completes:

Cats: 7-11 m.o. radiographically  (Wilson, 1999)

Dogs: 8-9 m.o. histologically   (Watanabe, 2001)
Vital pulp therapy

- only recent injury

Success rate:

88.2% - treatment within 48 hrs

41.4% - after 48 hrs (Clarke, 2001)

0% - after 7 days (Niemiec, 2001)
Procedure outline

• Amputation of 4-6 mm of exposed pulp

• Direct pulp capping

• Radiographs
To increase chances of pulp survival:

- Call a dentist
- Avoid touching!
- NSAIDs
- Broad spectrum antibiotics immediately
Discolored teeth
Pulpitis

- Edema and pain
- Ischemia and necrosis
- Diapedesis and tissue break-down
- Bacterial colonization - “anachoresis”
92.2% – require treatment! (Hale, 2001)

Fig 1—The elephant was found dead in ventral recumbency.
Tooth dislocation

- Loss of pulp vitality
- Damage of periodontal structures
- Immediate bacterial contamination
- Staged treatment involves stabilization, root canal therapy and periodontal surgery
Tooth luxation

- fast response is critical
Tooth avulsion

Avulsion

The tooth is completely displaced out of its socket. Clinically the socket is found empty or filled with a coagulum.
“Dry” time *

0 - 4 min. 61 + min.

* From Dental Trauma Guide online: www.dentaltraumaguide.org
Avoid touching the root

Wash it briefly (10 seconds) under cold water.

Reposition ASAP

Transport in milk, Hanks solution, saline or in the mouth (or spit in a container)

Avoid storage in water!

Emergency treatment required
- extraction vs. salvage
Consider before treatment

- Severity of surrounding tissue damage
- Preexisting periodontal disease
- Oral anatomy and occlusion
- Age (think - open apex)
- General health (think - multiple anesthetics)
Non-dental injuries

- Jaw fractures
- Soft tissue lacerations
- Tongue injuries
- Palatal trauma
Jaw fractures

- Majority - open
- Most within tooth-bearing region
- Osteomyelitis in 27% (Umphlet, 1990)
- Malocclusion - most frequent complication
Tape muzzle:

- E-collar - a must
- Send owners home with tape and extra muzzles
- Risk of aspiration in the vomiting patient
- Antibiotics

(!) Reasonable option for young, rapidly growing patients and if financially limited
- Stout’s interdental wiring
- acrylic reinforcement avoiding occlusal interference
- modified Risdon’s technique
Tongue injuries
- hemorrhage control
- wound closure
- prognosis?
- vallate papillae demarcate root-body
- airway protection while swallowing is critical
Loss of appetite

- Pain of oral origin
- Odontogenic rhinitis and other odontogenic causes (fever, sepsis, etc.)
- Oral foreign bodies and malocclusion
Stomatitis and gingivitis

- locate mucogingival junction
- visualize caudal mucosa
Tooth resorption

- radiographs and (!) probing
Dental caries

- check occlusal surfaces
- passive demineralization
- *Streptococcus mutans*
Apical periodontitis and odontogenic rhinitis
Oral foreign bodies
Malocclusion
Questions ?
Thank You!

viacheslav_eroshin @ ncsu.edu