TOOTH FRACTURE IN A PEDIATRIC PATIENT

Kendall Taney, DVM, DAVDC, FAVD
Center for Veterinary Dentistry & Oral Surgery
Gaithersburg, Maryland

INVESTIGATION
Obtain thorough history:
- Duration of tooth injury
- Difficulty eating, drinking, playing with toys
- Association of injury with inappropriate object chewing, trauma, cage biting
- Types of chew objects offered; instruct clients on which chew objects to avoid (eg, bones, antlers, cow hooves, hard plastic toys)

INVESTIGATION
Perform physical examination:
- General attitude
- Facial pain and swelling
- Palpebral reflex
- Patency of nares
- Regional lymph node palpation
- Auscultation of heart and lungs

INVESTIGATION
Perform oral examination and assess with patient awake:
- Facial symmetry
- Occlusion
- Soft tissue (ie, gingiva, oral mucosa, sublingual mucosa)
- Presence of deciduous, permanent, or mixed dentition
- Intrinsic teeth staining
- Type of tooth fracture (ie, uncomplicated, complicated)

INVESTIGATION
Perform with patient anesthetized:
- Periodontal probing, charting
- Full-mouth intraoral radiography
- Assessment/confirmation of clinically missing teeth
- Radiographic evaluation of intrinsically stained teeth to determine vitality

*NOTE: Endodontic training required to perform procedures successfully. Refer to the American Veterinary Dental College (avdc.org) for local specialists.

Suggested Reading

MANAGEMENT TREE

DIAGNOSIS

Uncomplicated crown fracture (no pulp exposure)

PERMANENT TOOTH

TREATMENT

- Rule out root fracture and document pulpal width on radiographs
  — Perform and/or repeat dental radiography in 6-12 months to evaluate tooth vitality by confirming decreasing pulp chamber width and/or root development
- Contour acute sharp fractures; seal with bonding agent and/or unfilled resin
  — Take care to avoid thermal injuries to the pulp during tooth preparation, especially after an acute injury

DECIDUOUS TOOTH

TREATMENT

- Evaluate root and developing permanent tooth buds on radiographs
- No treatment necessary if no evidence of disease is present

INVESTIGATION

- Assess amount of functional crown remaining
- Assess whether periodontal tissue is normal
- Determine via radiography whether apex is open/closed

PERMANENT TOOTH

TREATMENT

Fracture occurred:
- ≤48 hours prior
  — Vital pulp therapy with yearly radiographic monitoring
  — Extraction
- >48 hours prior
  — Apexification (ie, forced closure of the apex) followed by standard root canal therapy
  — Extraction

DECIDUOUS TOOTH

TREATMENT

Fracture occurred:
- ≤48 hours prior
  — Vital pulp therapy with yearly radiographic monitoring
  — Standard root canal therapy
  — Extraction
- >48 hours prior
  — Standard root canal therapy
  — Extraction

DIAGNOSIS

Complicated crown fracture

PERMANENT TOOTH

TREATMENT

Extraction

DECIDUOUS TOOTH

TREATMENT

Extraction is recommended to avoid periapical infection that could affect unerupted developing permanent tooth buds. Development of a mucoperiosteal flap allows for sufficient visualization to avoid potential damage to permanent tooth buds and careful extraction of the entire tooth root

INVESTIGATION

- Severe damaged periodontal tissue
- Minimal functional crown and/or root fracture present
- Open apex
- Closed apex

TREATMENT

Fracture occurred:

- Vital pulp therapy with yearly radiographic monitoring
- Extraction
- Apexification (ie, forced closure of the apex) followed by standard root canal therapy
- Extraction