

## Tooth extraction on the standing horse possibilities and limits



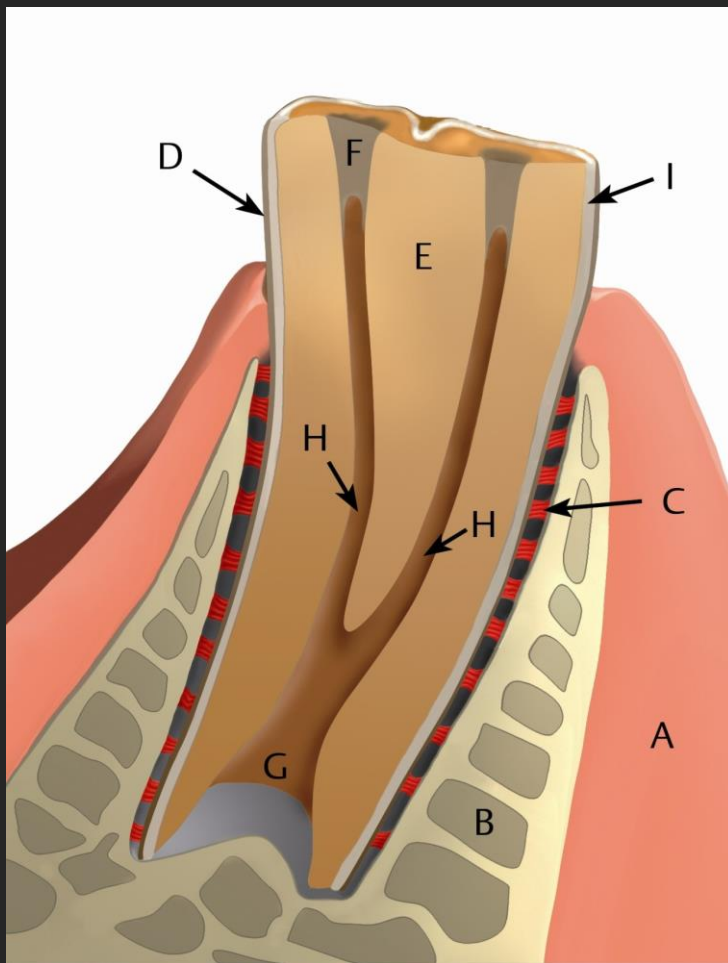
Tilman Simon  
Dr. med. vet.  
Cert. dent. vet.  
Equine veterinary dentist (SVA)

Buerg 27  
D - 83627 Warngau  
Germany

[www.pferdedental.de](http://www.pferdedental.de)



## Anatomy



Periodontal apparatus:

- A: Gingiva
- B: Alveolar bone
- C: Periodontal ligament
- D: Cementum

From: „Praxisleitfaden Zahn- und Kiefererkrankungen des Pferdes“  
by T. Simon, I. Herold and H.  
Schlemper. Parey Editions,  
Stuttgart 2009

## Indications for tooth extractions

- Apical abscess
- Advanced periodontal disease
- Incisors: EOTRH (Equine odontoclastic tooth resorption and hypercementosis)
- Loose tooth
- Dental fractures
- Pulpal necrosis
- Polyodontia
- Dental dislocation
- Persisting wolf teeth
- Patient not usable any more or painful





## Requirements for tooth extractions on the star horse

- Compliance of the owner
- Environmental conditions are given
- Patient is cooperative
- Post-op-care is possible
- Equipement
- Precise informations about the concerned tooth are given
- Enough time
- Surgeon has the physical ability to perform the extraction!

## **Anesthesia for incisor extraction**

- Spray the gingiva with 2% lidocaine
- Sub-gingival and supraperiosteal infiltration anesthesia
- Anesthesia into the interincisival channel
- Intralesional anesthesia into the traumatised pulp
- Intraalveolar anesthesia: Inject the periodontal ligament while the tooth is loosened
- Infraorbital nerve block for maxillary teeth
- Mental nerve block for mandibular teeth



Sub gingival and supraperiosteal  
infiltration anesthesia

Spray the gingiva with  
Xylocaine®



## Anesthesia into the interincisival channel



## Intralesional anesthesia into the traumatised pulp and Intraalveolar anesthesia





## Infraorbital nerve block for maxillary teeth

*To avoid violent reactions to needle contact, first give a depot of approx. 3 ml lidocaine at the entrance of the infraorbital foramen, then insert the needle into the canal and inject approx 5 to 10 ml of lidocaine (2%)*



*From: „Praxisleitfaden Zahn- und Kiefererkrankungen des Pferdes“ by T. Simon, I. Herold and H. Schlemper. Parey Editors, Stuttgart 2009*

## Mental nerve block for mandibular extractions:

*First a depot at the entrance of the foramen mentale, than insert the needle into the canal and inject lidocaine (2%)*



*From: „Praxisleitfaden Zahn- und Kiefererkrankungen des Pferdes“ by T. Simon, I. Herold and H. Schlemper. Parey Editors, Stuttgart 2009*

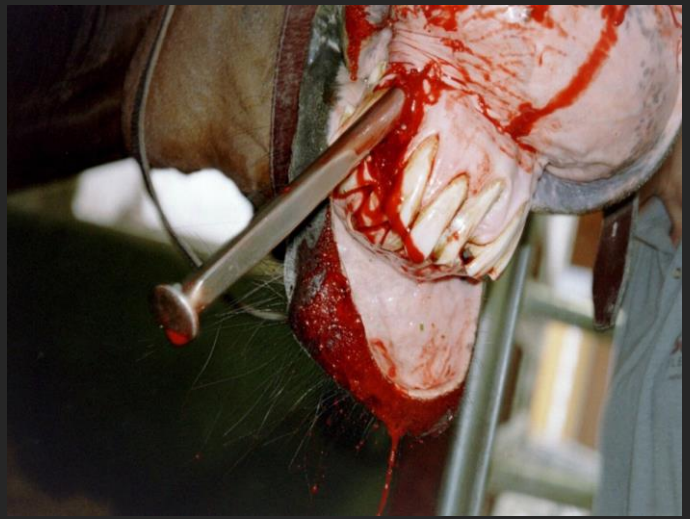
## Extraction of deciduous incisors



**Extraction of permanent incisors:**

**Gingiva is detached**

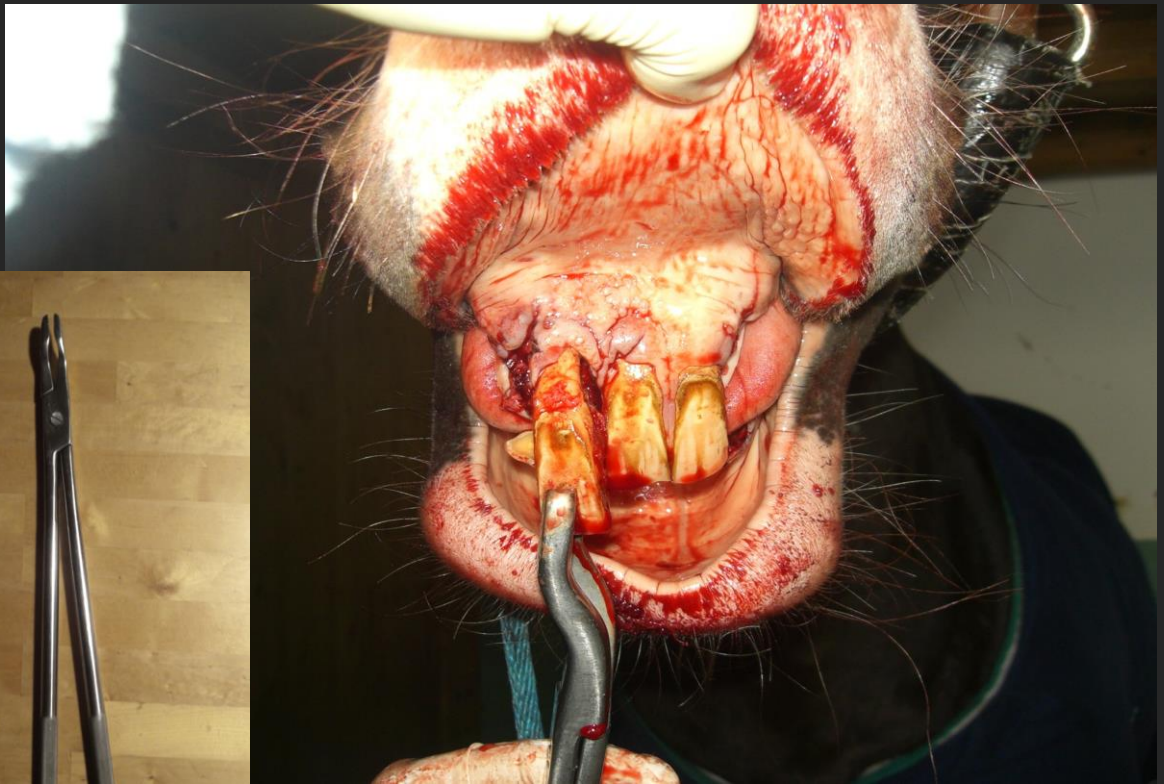




**Chiseling into the  
alveolus**

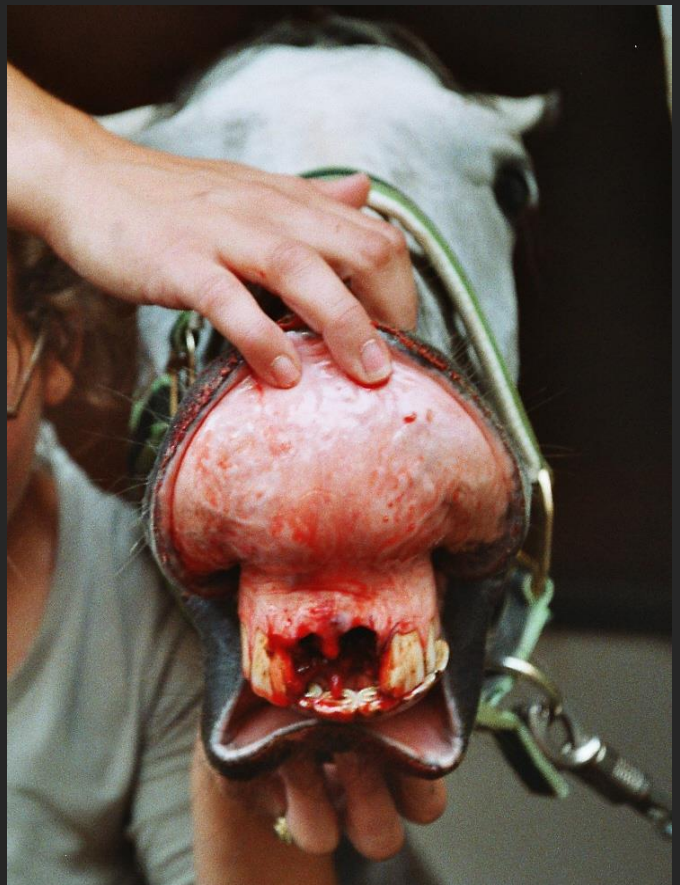


## Forceps extraction

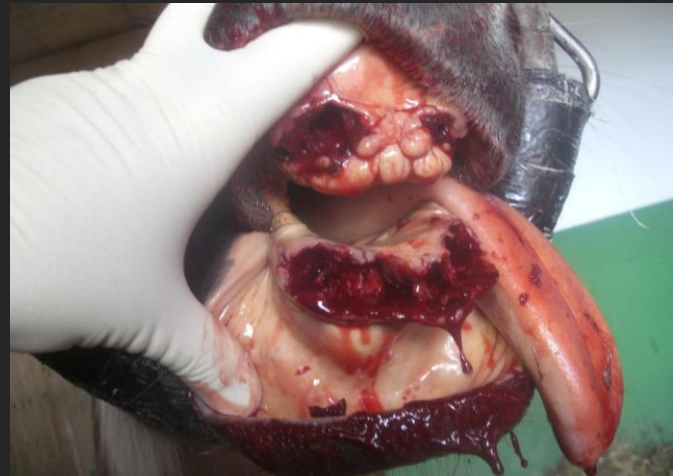


## Post op care

- Visual and digital control
- Instructions to the owner
- Antibiotics
- Curettage and flushing with chlorhexidine (0,1%- 0,2%)
- Analgesics for approx. one week (NSAID`s)
- X ray only in the case of doubts



Equine odontoclastic  
tooth resorption and  
hypercementosis  
(EOTRH)





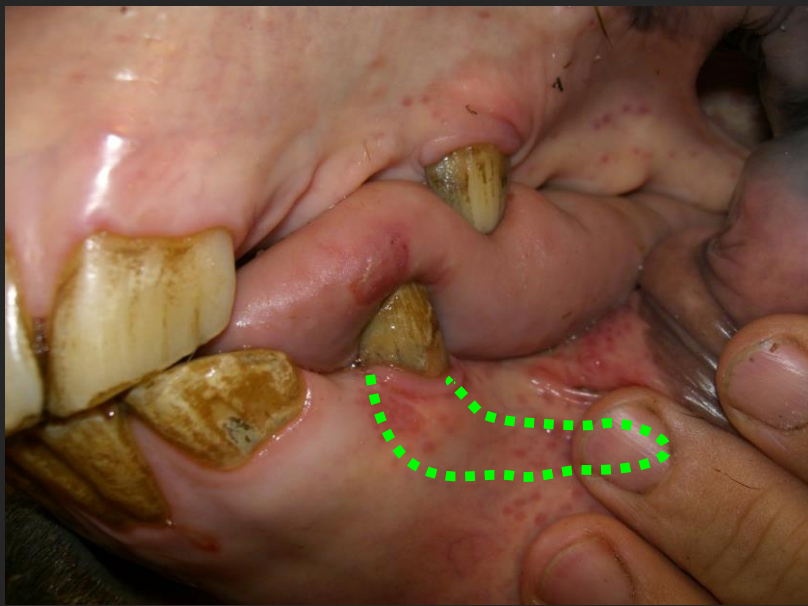
## Complication: Cementoma and tooth root fracture



## Complication: Iatrogenic fracture of the maxillary bone



## Canine extraction

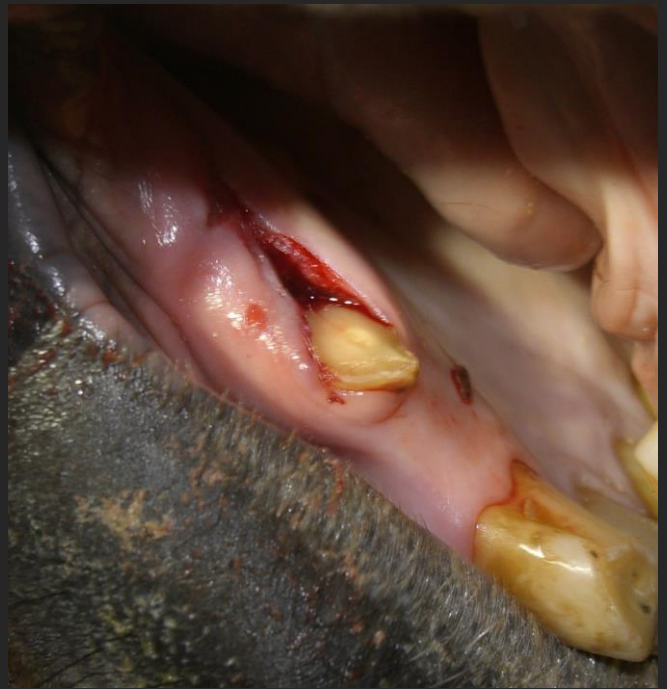


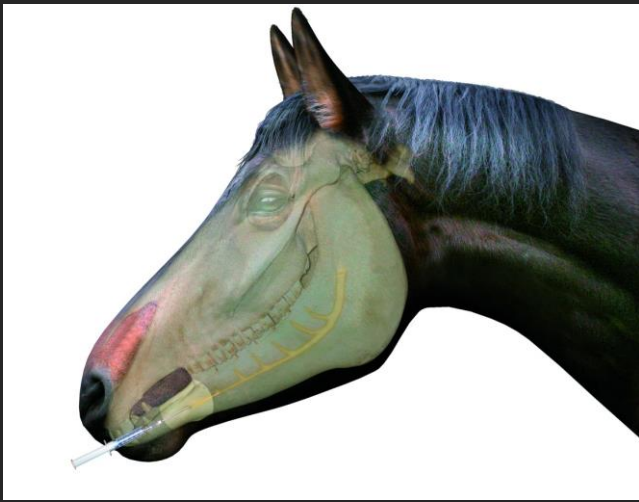
- Old fracture with pulpal necrosis
- Deep periodontitis
- Major annoyance such as rostral displacement

## Indication: Deep periodontitis



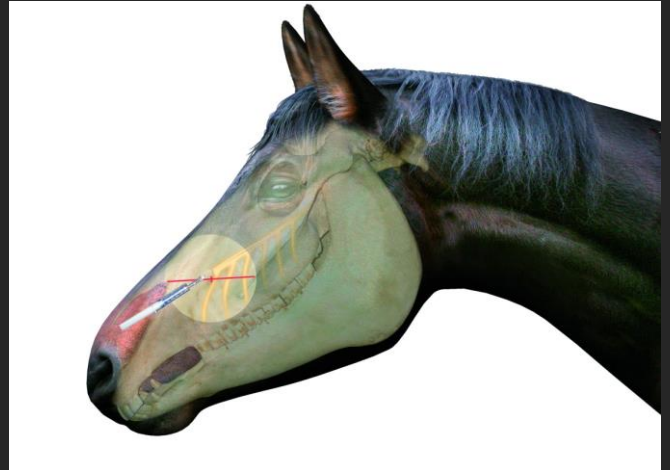
Indication: Rostral displacement and fracture



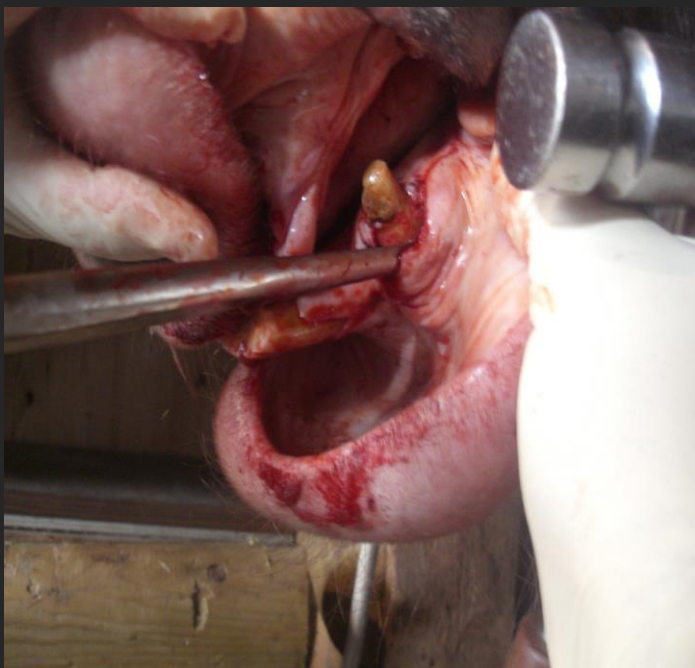


## Anesthesia of the canines:

Nerve block and  
suprapariosteal depot of  
lidocaine

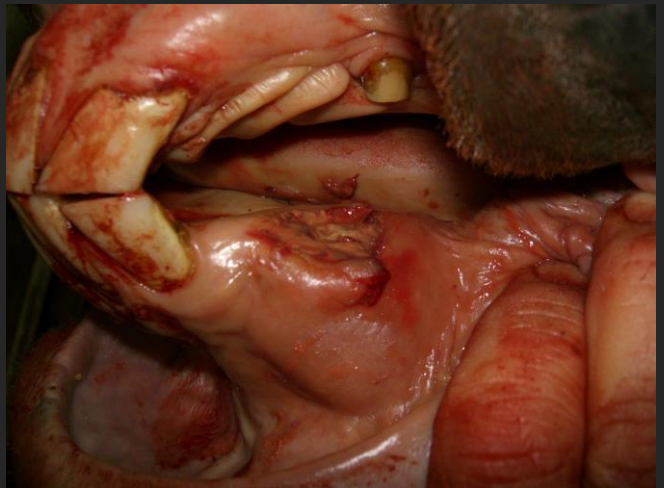
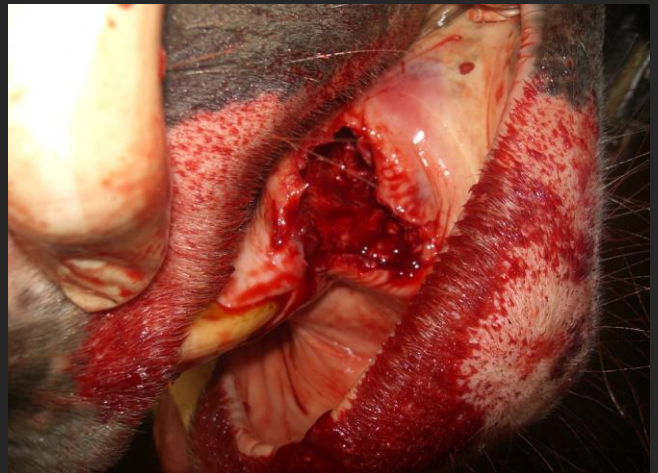


**Canines:** Detachment of the gingiva and loosening of the periodontal ligament inside the alveolus



## Post- op care

- Curettage and flushing
- Plug it
- Analgesics (NSAID`s)
- Antibiotics





**Complication:**  
mandibular bone and / or mental nerve could  
be traumatised!



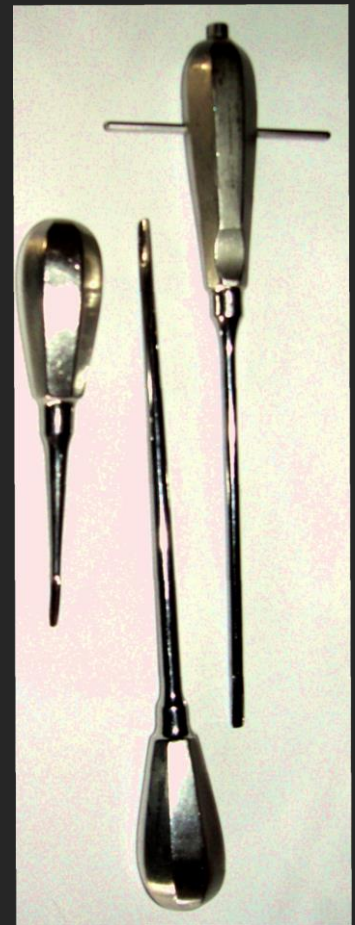
## The wolf tooth



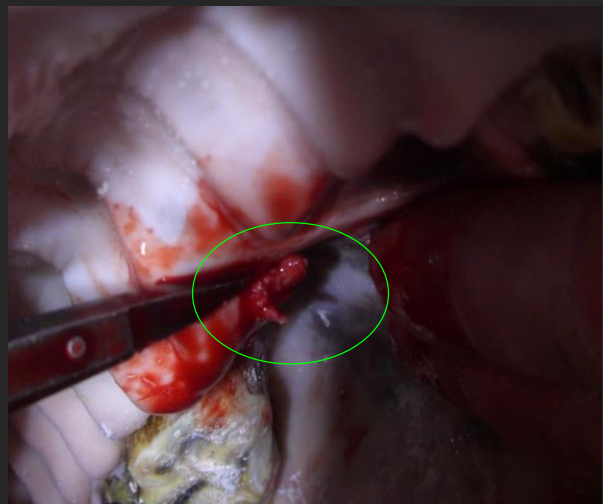
**Wolf tooth:**  
Subgingival and supraperiosteal infiltration  
anesthesia



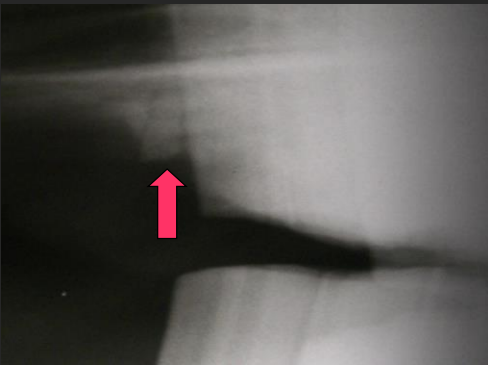
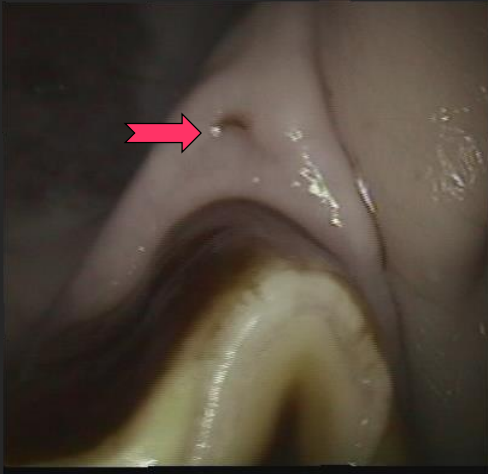
**Wolf tooth:**  
remove the gingiva and loosen the  
periodontal ligament



**Blind wolf tooth:**  
Circular incision of the gingiva and the  
periosteum!



Wolf tooth complication:  
Root fracture



## Complication: Rupture of the palatine artery

- Extend the sedation
- Ligation might be tried but they are often vain because of the sulcus
- Pressure bandage for at least 20 min.
- Hold the head high with the nostrils the deepest point to allow blood flow to the outside



## Extraction of premolars and molars: Indications

- ★ Tooth caps
- ★ Apical abscessation
- ★ Dental fractures
- ★ Periodontal diseases
- ★ Loose teeth
- ★ Infected pulp
- ★ Necrotic pulp
- ★ Polyodontia/malformations



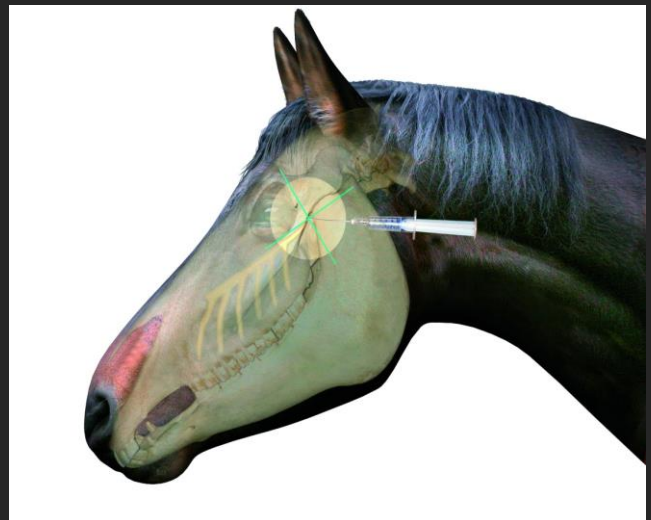


## Préparation of the patient

- Controlled environment
- Assistance
- Radiological informations
- Antibiotic coverage
- Veinous catheter
- Analgesia i.v. (NSAID`s)
- Deep sedation
- Suprapériostal depot of lidocaine
- Nerve block
- Spray the gingiva with lidocaine

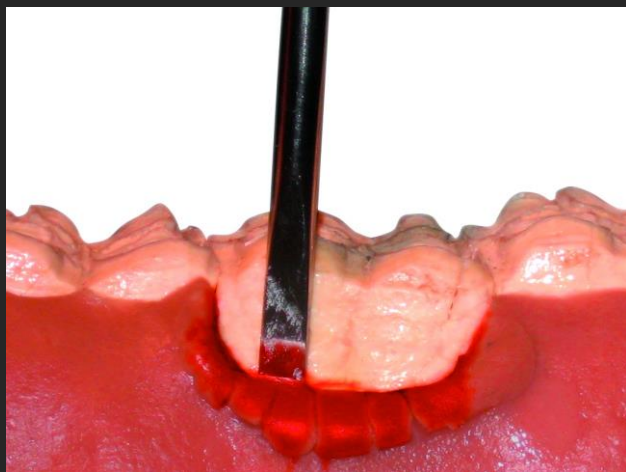


## Mandibular / maxillar nerve block

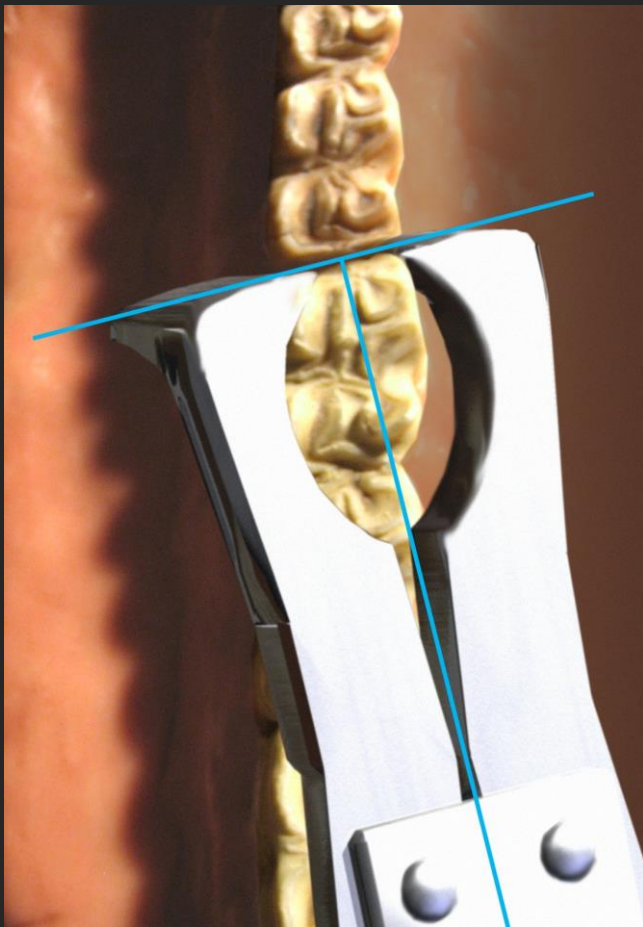


*From: "Praxisleitfaden Zahn- und Kiefererkrankungen des Pferdes" by T. Simon, I. Herold and H. Schlemper. Parey Editors Stuttgart, 2009*

## Detach the gingiva with dental pics



*From: "Praxisleitfaden Zahn- und Kiefererkrankungen des Pferdes" by T. Simon, I. Herold and H. Schlemper. Parey Editors Stuttgart, 2009*

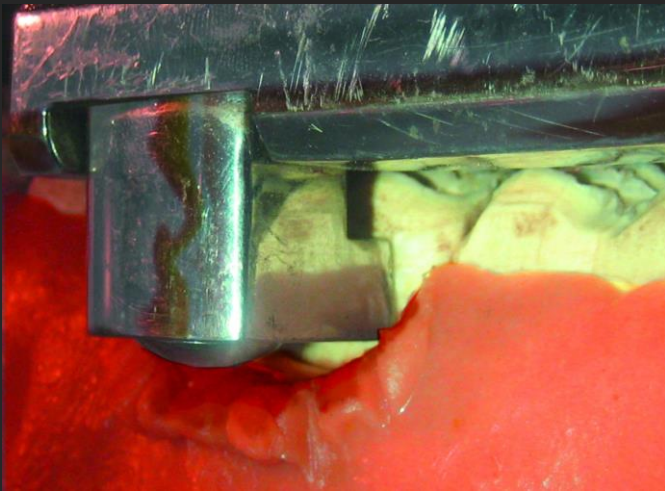


## Dental spreader and elevators

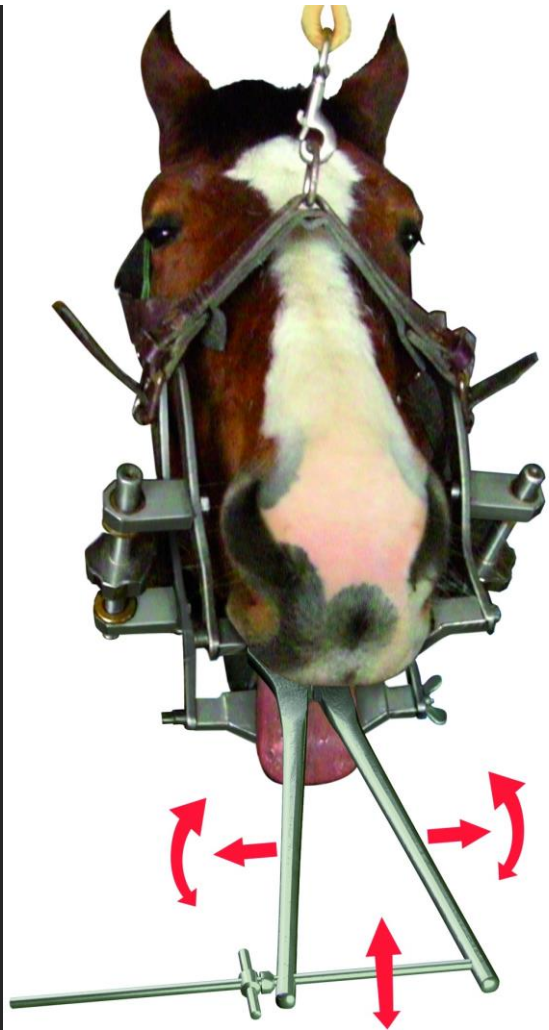


*From: "Praxisleitfaden Zahn- und Kiefererkrankungen des Pferdes" by T. Simon, I. Herold and H. Schlemper. Parey Editors Stuttgart, 2009*

## Forceps



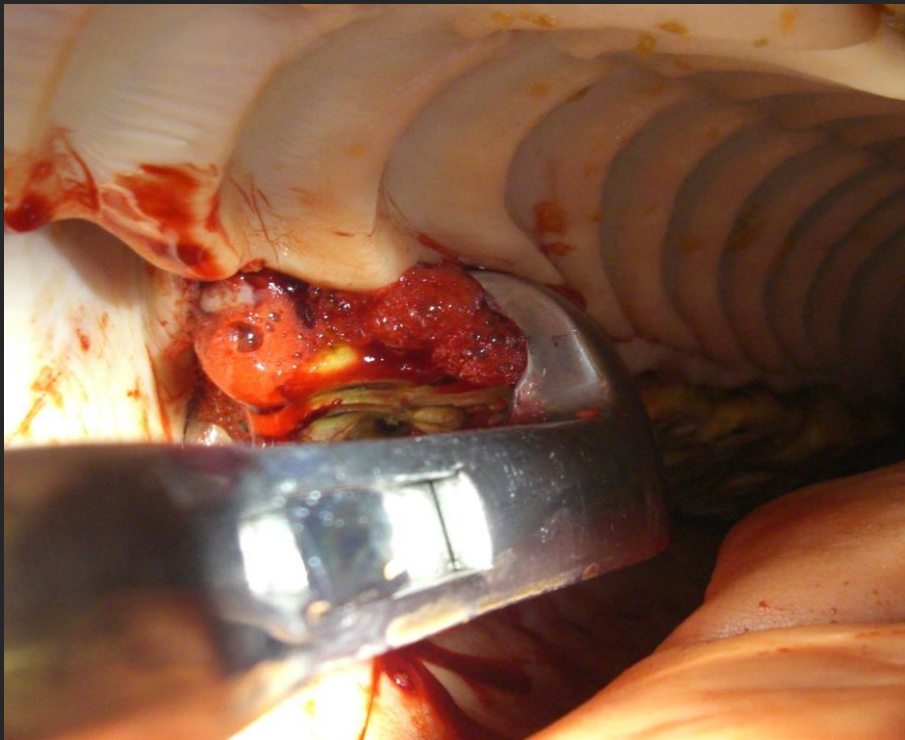
*From: "Praxisleitfaden Zahn- und  
Kiefererkrankungen des Pferdes" by T. Simon, I.  
Herold and H. Schlemper. Parey Editors  
Stuttgart, 2009*



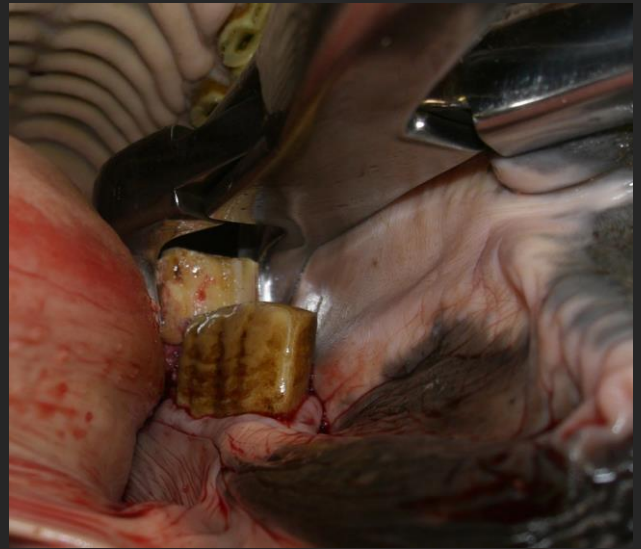
# Talking about forceps...



## Extraction of cheek teeth

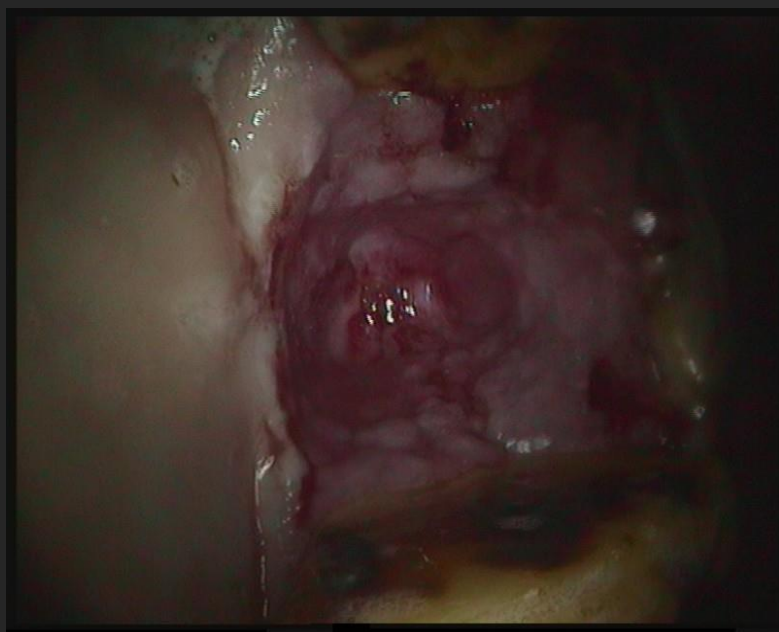


# Fulcrums

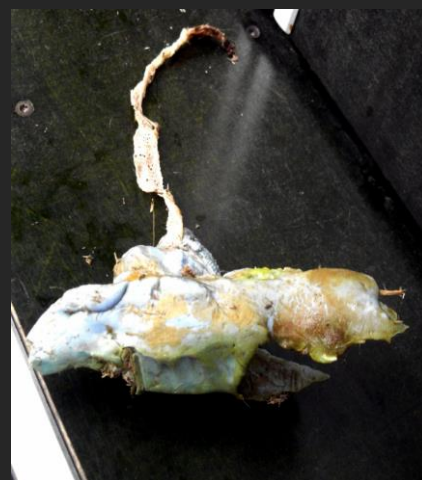




## Post extraction treatment



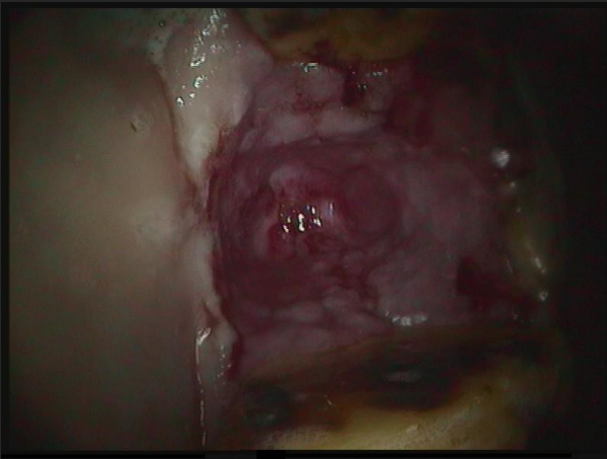
Vinyl polysiloxane impression material  
Putty



## Post extraction treatment



## Post extraction complication



Dry socket: Alveolitis sicca

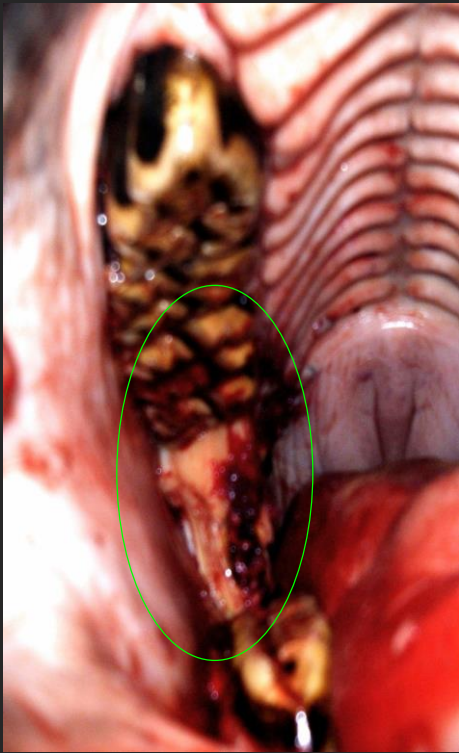


## Particular case: First premolars (# 06)

- ◆ Dental spreading is not fully possible
- ◆ Higher risk of root fracture
- ◆ Fulcrums can't be used

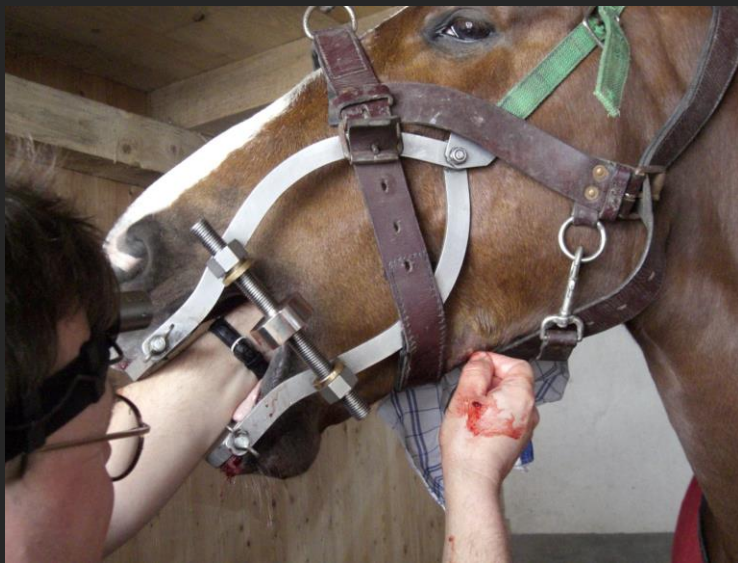


Particular case:  
Tooth to be extracted is too long!



Particular case:  
Root fracture and spreaded roots





## Particular case: Fistulous tract

- ★ Detach the epithelial coating of the fistula
- ★ Extract the whole tooth!
- ★ Antibiotic plugging
- ★ Frequent flushing

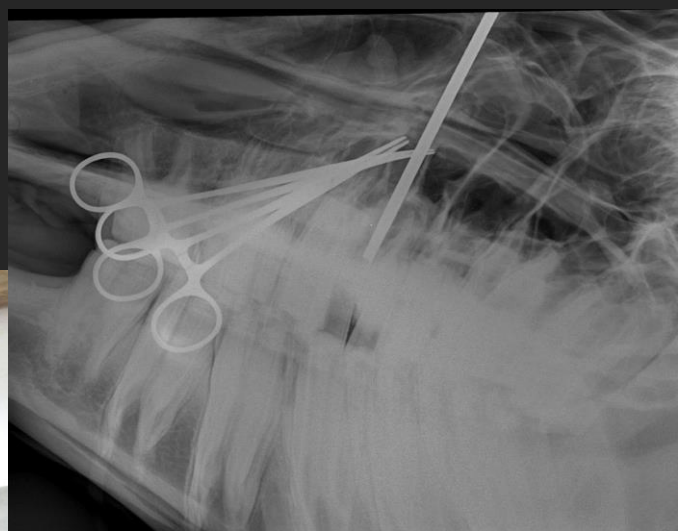


**Particular case:**  
**Absence of clinical crown**





# Steinmann - pin extraction



Obrigado!

