To tusk fractures

Case report

Tusk fracture repair in a 4 yr-old African elephant bull

Date: 17.04.1996
Location: Zoo Basel
Data provided by: Dr. Christian Wenker, Dr. Jürg Völlm

History:

Fracture of right tusk on the 16.04.1996 at around 1.00 pm while playing with a steel-object on the outdoor exhibit. The tusk fractured at 6-8 cm from the tip. Approximately 6 cm of pulp tissue was exposed. Initially, bleeding was intense but ceased within one hour. The exposed pulp tissue was treated with policresoles and povidone-iodine for hemostasis and disinfection. In the morning of the 17.04 the exposed part of the pulp had fallen off.

Treatment:

Partial pulpotomy and temporary closure of the pulp cavity on the 17.04.1996 at 4.30pm.

Anesthesia & analgesia: Xylazine, etorphine, lidocaine
Positioning: Left lateral recumbency
Duration of treatment: 140 minutes

Method of treatment: Mechanical debridement of the broken tusk and pulp cavity, disinfection of pulp cavity with neomycin, bacitracin and hydrogen peroxide 3%. Pulpectomy up to about 1cm into the pulp cavity. Hemostasis through a thrombin tamponade. Filling of the pulp cavity with a mixture of Ledermix® (Demeclocyclin-Calcium, Triamcinolonacetonid) (1 part), Calxyl® (Calciumhydroxid, Bariumsulfat) (4 parts) in two layers. Closing of the pulp opening with dentsply, Dyract Compules® (glass ionomer cement + composite) and Dyract-PSA® in multiple layers. Subsequently hardening through Translux® halogen lamp. The tusk tip was covered with a protective steel cap, fixed with two hose clamps.
Diagnostic notes: No radiographs were taken during the treatment.

4 yr-old Asian elephant bull, 1,000 kg BW under general anesthesia for tusk fracture repair. (©Pictures Zoo Basel)

Treatment results:

Uneventful, though rapid recovery from anesthesia. The protective steel cap was maintained during the entire following year. It fell off several times but was always replaced. The right tusk continued to grow in a similar shape, circumference and size as the left one, until the death of this male in 2013. In the pathology report no alterations of the tusk were mentioned. However, there is no mentioning that the tusks were cut in a longitudinal section during necropsy.

General notes:

During the debridement the pulp canal as well as the pulp tissue seemed extremely sensitive, despite anesthesia with lateral recumbency and absence of the corneal reflex. Local analgesia was intended through the topical administration of lidocaine on the pulp tissue, but did not seem to have any analgetic effect.

Picture taken 1 year after the treatment of the fractured tusk by Christian Schiffmann