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^w see images in the websupplement at www.zoosprint.org

Tusk Trimming in an Elephant under General Anaesthesia

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The tusks are modified incisors and are composed of dentine (ivory). Early in development, the tusks have enamel cap, but this is rapidly worn away, leaving only the dentine surrounding the pulp canal. The pulp canal extends upto 2/3rd of the length of the tusk. Because of the protruding nature, the trunk and the tusk are prone to injury. Trimming of the tusk is usually done in case of overgrown sharp ones and also to make a tusker docile under proper restraint. The present paper describes tusk trimming in a captive elephant of Nandan Kanan Zoo.

A bull elephant "Nandan" developed bilaterally overgrown sharp tusks (Image 1^w). Being a trained elephant it was commanded to lie down, but it did not cooperate for trimming of the tusk. Hence 1 ml of Immobilon LA (2.45 mg of Etorphine hydrochloride & 10 mg of Acepromazine maleate) was injected intramuscularly (Image 2^w). The elephant was recumbent and in deep sleep with snoring sound within 3 minutes. Then both the tusks were trimmed with a hawk saw by using a thumb rule practiced at the Zoo. The length of the tusk to be retained is equal to circumference of tusk at the level of lips converted to length plus 2 inches. Pouring of cold water was done at the cut edges. Continuous monitoring of body temperature showed elevation of 0.5 degree centigrade. Hence ice water pack was placed on the cranium to bring down the temperature. The animal was continued to be in sitting posture for more than 2 hours. Hence 2 ml of Revivon (Diprenorphine hydrochloride, 3mg/ml) was injected intravenously and the animal stood up immediately.

On 28.11.1997 the same "Nandan" killed its mahout by goring while the handler was standing without the "Ankush". Hence thereafter the animal was always kept chained. It again developed overgrown tusks. So it was decided to trim the tusk on 7.12.2004. in standing sedation using a mixture of 500mg of xylazine hydrochloride and 200 mg of ketamine hydrochloride administered intramuscularly. After 5 minutes the animal was in standing sedation with symptoms of drooping of eyes, supporting the trunk on the ground and reduced fanning of the ear. The tusks were trimmed using a hawk saw safely without

movement applying the same thumb rule (Image 3^w). It was revived with 70 mg of Yohimbine hydrochloride administered intravenously.

In the above case at first instance the animal was made to be in recumbency through command by the handler. One ml of Immobilon LA was injected with an apprehension of excitement, muscular tremor and rigidity before falling while using Immobilon as indicated in horses by Thurmon (1993). In the 2nd instance as the elephant is unpredictable in view of previous history of killing its mahout, it was decided to trim the tusks in standing sedation. Administration of xylazine and ketamine mixture provided excellent sedation. The elephant retained its standing posture by placing its hind limbs wide apart to maintain balance. Head was lowered with reduced flapping of ears which could be stopped by holding the lower portion of the fan of the ear (Image 4^w). Due to sedation movement of trunk and tail were absent. This facilitated easy trimming of the tusk and administration of Yohimbine reversed the sedation within 3 minutes as observed by Sarma (1994) while studying the effect of general anaesthesia using xylazine and ketamine mixture in elephants.

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