International Journal of Science, Environment and Technology, Vol. 6, No 4, 2017, 2396 – 2399
ISSN 2278-3687 (O)
2277-663X (P)

SUCCESSFUL THERAPEUTIC MANAGEMENT OF COBRA ENVENOMATION IN A PIT BULL DOG

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Abstract: A Pitbull dog was diagnosed for Cobra snake bite based on the history and physical examination and successfully managed with anti-snake venom, fluid, corticosteroid and antibiotic with careful monitoring.
Keywords: Cobra, Dog, Management, snake bite.

Introduction

Snake bite is a routinely occurring life threatening emergency in tropical countries like India. So far 216 species of snakes have been identified in India, of which 52 are known to be poisonous (Bhardwaj 2011). Five most common poisonous snakes found are Cobra, King Cobra, Russell's Viper, Saw Scaled Viper and Krait. Snake bite in animals generally occurs during grazing, hunting or while playing in the garden. Cobra snakebite envenomation in animals is an emergency which requires immediate attention or otherwise delayed and inadequate treatment may prove fatal. The present clinical report describes successful therapeutic management of Cobra snake bite in a Pitbull dog.

Case history and observation: A one and half a year old Pit Bull dog was presented to the Small Animal Clinics of Teaching Veterinary Hospital of GADVASU, Ludhiana, with the history of fight with a snake, sudden swelling at the face, retching, vomiting, respiratory distress and stumbling gait. Owner reported that the dog has finally killed the snake (Fig. 1).Snake was identified as Cobra by experts (fig.2). Detailed clinical examination of dog revealed tachypnea (120/minute), fever (104^0F), hyperexcitation, frothy salivation, staggering gait, tempero-mandibular swelling (Fig. 3) and cyanotic tongue. The hematological parameters revealed neutrophlic leukocytosis (TLC- 32680 cu mm and DLC – Neutrophils 96% and lymphocytes 4%). Blood biochemistry showed elevated ALT (80 U/L) and normal renal function.

*Received June 25, 2017 * Published Aug 2, 2017 * www.ijset.net*

Treatment and Discussion

The dog was treated with one vials (10ml) of snake venom antiserum dissolved in 500 ml of normal saline slowly intravenously administered over a period of 6 hours, along with supportive therapy included Dexamethasone (Dexona, Cadila Pharma) @ 2mg/kg i/v, Atropine Sulphate (ATN-MB, Martin & Brown Bio Science) @ 0.04 mg/kg i/m, Chlorpheniramine malate (Avil) 2ml i/m, Tetanus Toxoid (Serum Institute of India) 2 ml i/m, Ranitidine (Aciloc) 2 ml i/m, B Complex (Polybion) @ 2ml i/m. In addition, Cefataxime @ 25mg/kg, i/m and Metronidazole @ 5mg/kg i/v were also given. The antibiotic therapy was continued for 5 days to the dog along with the liver tonic. Next day, the dog was recovered uneventfully (fig. 4).

Snakes are known to be the deadliest foes of both man and animals by virtue of being highly venomous. Snakebite most often occurs when animals graze, hunt or play in infested areas and is bitten around head and limbs (Kumar *et al*. 2016). In the present case, dog was also playing in the farm house and was bitten on face. Clinical signs such as salivation, muscular weakness with abnormal gait, respiratory distress observed in the present case have also been observed by Sooryadas (2011). These clinical signs can be attributed to the enzymatic and non enzymatic compounds in the snake venom. According to Klaassen (2008), hyalurinadase cleaves internal glycoside bonds in certain acid mucopolysaccharides resulting in decreased viscosity of connective tissues which allow other fractions of venom to penetrate the tissues. The swelling observed at the face may be attributed to enzyme hyaluronidase which acts as a spreading factor. Cobra toxin competitively binds to the nicotinic receptors in the post-synaptic membrane of skeletal muscles, preventing binding of acetylcholine resulting in dyspnea (Karalliedde, 1995). The increased leucocytes count is attributed to systemic infection as snake fangs and oral cavity has bacterial contaminants (Blaylock, 2001). The increased alanine aminotransferase might be due to the hepatotoxic effect of snake venom (O'Shea, 2005).

Envenomation by the cobra is manifested clinically as neurotoxicity and if not attended immediately, it leads to respiratory failure and death. Polyvalent snake anti-venom was preferred in the present case as it provides protection against the venom of big four (Common Cobra, Common Krait, Saw Scaled Viper and Russell's Viper) species of the snakes. The use of steroids in snake bites is still debated. The sequence that occurs in any introduction of foreign material into the body is inflammation that is the release of cytokines and steroids reduce inflammatory process (Swaminathan, 2005). The use the corticosteroid prior to the

polyvalent snake anti-venom also inhibits serum sickness. The use of tetanus toxoid provides protection against the tetanus spore that might have entered animal body from contaminated snake mouth (Ananda *et al*., 2009). Atropine sulphate is given to prevent the undesirable muscarinic effects of acetylcholine such as increased secretions, bradycardia and colic. Although, antihistamines can at certain times potentiates the toxic action of the snake venom (Ananda *et al*., 2009), but in this case anti-histaminic was successfully used as it counteracts the severe side effects produced by histamine in snake venom. Broad spectrum antibiotics were administered to the dogs, as snake fangs are contaminated with different types of bacteria which are mainly gram negative enterobacteriacae (Blaylock, 2001). In the present case, adrenaline along with corticosteroids and antihistamine were used for managing the possible anaphylaxis.

References

[1] Ananda, K.J., Mohan, K., Kamran, A and Sharada, R. (2009). Snake bite in dogs and its successful treatment. *Vet World*, **2**: 66-67.

[2] Bhardwaj, R.K. (2011). Clinico-Haematobiochemical and Therapeutic Management of Snake bite in Canines. *Intas Polivet,* **12(2)**: 204-205

[3] Blaylock, R.S.M. (2001). Normal oral bacteria flora from some South African snakes. Onderstepoort *J Vet Res,* **68**: 175-182.

[4] Karalliedde, L. (1995). Animal Toxins. *Br. J. Anaes,* **74**:319-27.

[5] Klaassen, C.D. (2008). Properties and Toxicities of animal Venoms. In:Toxicology. 7th Edn, McGraw-Hill, New Delhi. pp: 1093-1098.

[6] Kumar, A., Rohi, R.R., Pawar, P., Yadav, R. and Yadav, P. (2016). Therapeutic Management of Snakebite in a Male Dog. *Sch J Agric Vet Sci*., **3(2)**:103-104.

[7] O'Shea, M. (2005). *Venomous Snakes of the World*. Princeton: Princeton University Press.

[8] Sooryadas, S. (2011). Neurotoxic Cobra Envenomation in a Dog and its treatment with Anticholinesterase and Artificial ventilation. *Intas Polivet,* **12 (2)**: 209-211

[9] Swaminathan, P.R. (2005). Corticosteroids and snake bite. *Brit Med. J*, **330**: 33.

Fig 1: Cobra snake killed by Pitbull dog

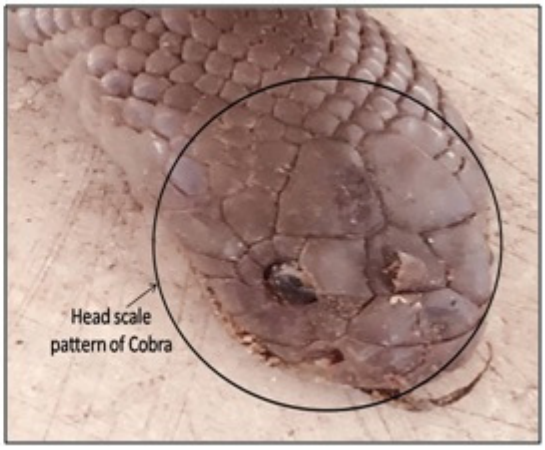

Fig. 2: Identification of cobra by head scale pattern

Fig 3: Pitbull dog with temparo-mandibular swelling

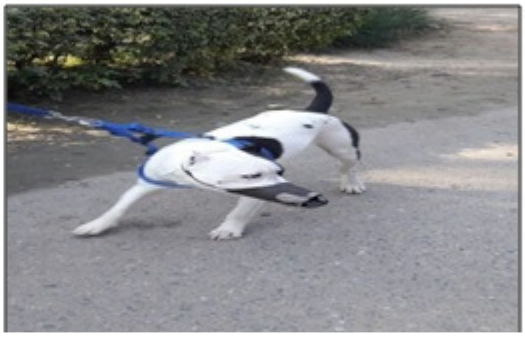

Fig 4: Recoverd Pitbull dog after treatment