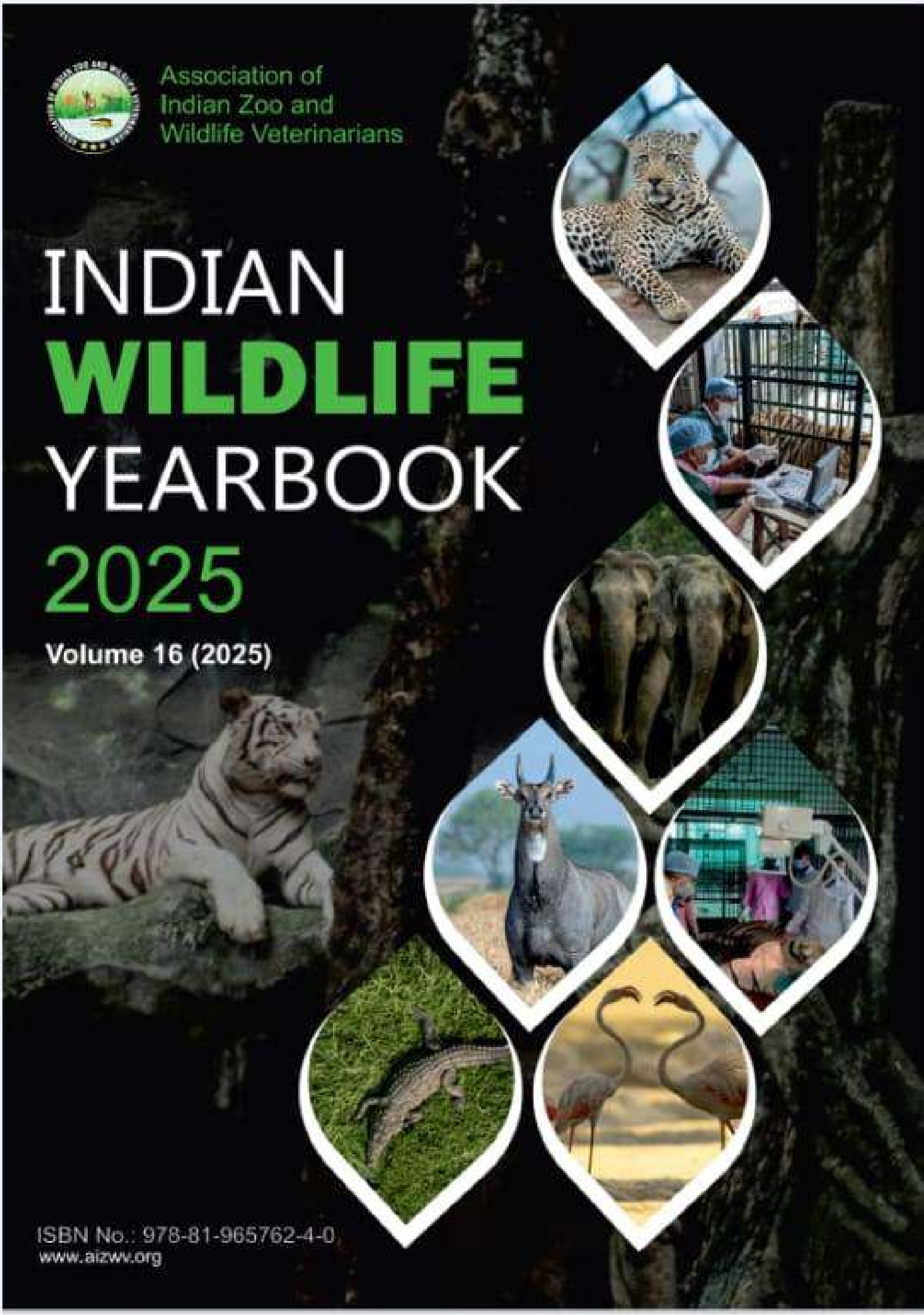

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Degenerative Cervical spondylosis in a hand reared Nubian giraffe calf

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Introduction

Non-infectious problems are probably more prevalent than infectious disease in captive giraffes (Bertelsen, 2015). Hand-rearing giraffe calves is challenging, time consuming and labour intensive, especially during the early stages of the process. The most critical time appears to be the first month, until the calf adapts to the feeding schedule and the milk substitute offered. There are limited literature is available regarding cervical disorder in hand reared giraffe calf. Cervical spondylosis is a degenerative condition characterised by wear and tear of cervical spine affecting stability of normal cervical anatomy especially in elongated neck animals. Wessem (2017) documented a case of discospondylitis of a three month old baringo giraffe calf. Metabolic bone disease is particularly devastating for growing animals since this is the time in their lives when they are most actively forming their skeletal structure (Kumar *et al*., 2018). Alipore zoo is maintaining Nubian giraffe stock since long with regular successful captive breeding without any mortality of neonate or sub-adult giraffe during last ten years.

Case Presentation, Diagnosis and Management

A primiparous giraffe gave birth of a female calf born on 07.04.23. The Mother didn't show any maternal care towards its calf hence opted for hand rearing of the calf (Fig:1). Body weight at birth was 47 kg. Initially subcutaneous Inj DNS (Jedux parenteral pvt ltd) @ 5 ml/kg was administered to prevent dehydration with other supportive medications. Then buffalo milk was opted for bottle feeding but diarrhea occurred and treated with intravenous colloid (Inj Haemaccel 200 ml IV) (Abbott) and isotonic fluids (Inj RL 200 ml IV) (Jedux parenteral pvt ltd) without any antibiotics. Then cow milk was chosen for feeding @ 10% of body weight in divided in five times per day. Probiotic (Immunogut powder, Assurem health care pvt ltd) 5 gm was added twice daily with milk. Standard hygienic and bio-security measures adopted for hand rearing. After hand feeding each time the calf was released to open area with its mother for roaming and exercise though there was no maternal care shown by its mother. At 1month of age the calf was weighted 54 kg (fig:2). The calf showed occasional teeth grinding, stargazing appearance from 3rd week of age. Inj Vit A D3 E (inj Mota-H, Relife Pharmaceutical pvt ltd) 2 ml and Inj catosal (butaphosphan & cyanocoblamin) (Elanco India pvt ld) 3ml once in week was started and continued for 4 week. From two month of age animal started some quantities of fruit, vegetable and concentrate from feeding trough. Oral calcium supplementation also started with feed. Rearing was continued with milk, self feeding of small quantities of solid food and oral supplementations though occasional stargazing and teeth grinding continued. On 26.07.23 morning the calf was observed with ataxia, after sudden fall animal showed cervical instability in lateral recumbency with mild soft tissue swelling in proximal neck and unable to wake up. Symptomatic treatment with injectible Vitamin B-complex (Inj Tribvet, Intas phrama)-4 ml IM, Inj Methylprednisolone (40 mg/ml) (Inj Premaxo, Neon laboratories limited)- 2 ml IM, Inj Methylcobalamin 500 mcg/ml (Inj Methycobal, Wockhardt)- 2 ml IV, Inj N. S. (Jedux parenteral pvt ltd) 500 ml IV, Inj Rintose (Multi Electrolyte with 20% dextrose, Vetoquinol Animal Health) 250 ml IV and prophylactic antibiotic of Inj Amoxycilin with Sulbactum @ 10 mg/kg BD (Inj Moxikind SB 4.5 gm, Vet Mankind) was extended. Cervical DR X-ray with orthogonal views were taken and showed degenerative changes with a modified facet of proximal part of 3rd cervical vertebrae, Sclerosis in cranial metaphysis of C3. Degenerative changes are also marked in proximal part of body of C2 and incomplete pathological fracture of the midpoint of C2 vertebral body is evident. Soft tissue inflammation and mild scoliosis is also evident in region of C2-C3 joint. Low bone density of all cervical vertebrae is evident in respect of surrounding soft tissue density. X-ray findings were suggestive of degenerative cervical spondylosis. (Fig:3-6)

There was no improvement after above mentioned medications. Due to prolong lateral recumbency the calf developed bloat in afternoon hours. Symptomatic oral and parenteral treatment continued but the calf died at midnight of same day.

Fig 1: Hand feeding of day old giraffe calf

Fig 2 : Weighing of the calf during hand feeding

Fig 3: X-ray of recembent calf

Fig 6: Lateral skiagram of cervical area

Fig 5: Lateral skiagram of cervical area

Fig 6: Lateral skiagram of cervical area

Conclusion

Degenerative changes in cervical vertebrae of giraffe calf are a rare condition and not reported previously in the zoo. In captive giraffes, cervical injuries and muscle spasms occur in young animals from unknown causes and may be due to traumatic injuries as reported by Dadone *et al.* (2013). Whereas Waseem (2017) suggested that immature immune response of young giraffe and traumatic injury may be causative agent for discospondylitis and opted for euthanasia of the affected giraffe calf due to poor prognosis. In present case there was no history of injury, thus etiology of the present case is unknown. Due to acute onset of cervical instability and lateral recumbency symptomatic treatment was refractory.

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References

1. Bertelsen M (2015). Giraffidae (Chapter 61). In: Fowler ME and Miller RE (Eds.), *Fowler's Zoo and Wild Animal Medicine*, Volume 8. Elsevier, Missouri, pp. 607.
2. Dadone L, Haussler K, Brown G, Marsden M, Gaynor J, Johnston M and Garelle D (2013). Successful management of acute-onset torticollis in a giraffe (*Giraffa camelopardalis reticulata*). *Journal of Zoo and Wildlife Medicine*, 44(1): 181–185.
3. Kumar R, Tiwari RK, Asthana RK, Kumar P, Shahi B and Saha SK (2018). Metabolic bone diseases of captive mammals. *Approaches in Poultry, Dairy & Veterinary Sciences*, 3(3): 235–238.
4. Wessem C (2017). Discospondylitis in a three-month-old Baringo giraffe (*Giraffa camelopardalis rothschildi*). In: Proceedings of BVZS, London, pp. 108.