International Journal of Science, Environment and Technology, Vol. 8, No 5, 2019, 1040 – 1043
ISSN 2278-3687 (O)
2277-663X (P)

WING AMPUTATION IN A COCK PIGEON (*Columba livia domestica*)

C.L. Sunil[1*], G. Kamalakar[2], B.C. Ramakrishna[3], Thara Singh D. Lamani[2] and B.N. Nagaraja[4]

[1]PG scholar, Department of Veterinary Surgery and Radiology, Veterinary College, Hebbal, KVAFSU, Bangalore – 560024, Karnataka, [2]Ph. D. scholar, [3]Patron, Karuna Animal Shelter, Veterinary college campus, Hebbal, Bangalore – 560024, [4]Professor & Head
E-mail: 1243sunil1243@gmail.com (**Corresponding Author*)

Abstract: An adult cock pigeon presented to the Karuna animal shelter with a history of bird fallen from a height and not able to fly since 2 days. The pet bird was treated by a local Vet with no improvement. Clinical examination revealed dropped left wing, absence of withdrawal reflex with palpable distal humeral fracture and radial nerve paralysis. Wing amputation was performed under Xylazine and Ketamine anaesthesia to the level of proximal 1/3rd humerus with sufficient muscle opposition. Post-operatively antibiotic for 7 days and analgesic for 5 days was administered, surgical wound was dressed regularly and sutures were removed on 10th postoperative day.

Keywords: Cock Pigeon, humerus fracture, radial nerve paralysis, wing amputation.

INTRODUCTION

Traumatic wing injuries in birds were the common problem in clinics that treat wildlife. Avian bones are thin and brittle and tend to break into fragments upon a variety of natural events like midair collisions, fights with other birds or anthropogenic experiences like gunshot wounds, collisions with automobiles or fences, encounters with traps, attacks by dogs or cats (Kumar *et al*., 2012). None of the birds with reported cases of brachial plexus injury have improved. Because birds are rather poor patients for physical therapy and long-term maintenance can be difficult, a guarded to poor prognosis must be considered if brachial plexus injury is suspected. Dogs with radial nerve paralysis sometimes can be managed with physical therapy to allow the muscles to remain healthy until the nerve can regenerate (Gniffiths *et al*., 1974). Complete wing amputation procedures are indicated as the last surgical option when infectious disease, neoplastic disease, severe radial nerve paralysis, or when chronic malunion fractures compromise the systemic health of the patient (Latney *et al.,* 2018). This report discusses a case of unilateral amputation of wing in a cock pigeon for the management of humeral fracture associated radial nerve paralysis.

*Received Sep 4, 2019 * Published Oct 2, 2019 * www.ijset.net*

CASE HISTORY AND OBSERVATIONS

A 3 year old cock pigeon was presented to Karuna Animal Shelter, Bangalore with the history of bird fallen from a height and not able to fly since 2 days (Fig. 1). The pet bird was treated by a local Vet with no improvement. Clinical examination revealed dropped left wing, no withdrawal reflex indicating radial nerve paralysis with palpable distal humeral fracture. It is also associated with radial nerve paralysis. Hence it was decided to go for wing amputation to save the life of the bird and to prevent further suffering.

TREATMENT AND DISCUSSION

Under general anesthesia using Xylazine – Ketamine cocktail at 8 mg/kg + 30 mg/kg, respectively, the feathers were manually plucked from the shoulder joint up to the elbow of the affected thoracic limb. The patient was positioned in lateral recumbency with the affected wing suspended using the "hanging leg drape" technique. The surgical site was then scrubbed with 5% povidone iodine solution and aseptically prepared for surgery (Fig. 2). The skin was incised elliptically approximately 5 mm above the elbow joint. Using blunt dissection, the skin was carefully dissected and reflected circumferentially from the underlying musculature. The tri-osseum muscle was transected at the musculo-tendinous junction near the elbow (near the insertion). A transverse osteotomy was carried out at the proximal third of the humerus. The muscles were sutured using chromic catgut no.1-0 over the bone stump. The subcuticular tissue was then apposed in a continuous pattern using absorbable chromic catgut No 2-0. The skin was then closed using 2-0 polyamide by simple interrupted pattern (Fig. 3). The bird was maintained on meloxicam (0.2 mg/kg PO b.i.d for 5 days) to provide analgesia and cefpodoxime (10 mg/kg PO q.i.d for 7 days) to prevent post-operative skin infections. Alternative days wound dressing was performed and skin sutures were removed 10^{th} post operative day. Bird showed uneventful recovery and was able to balance and could walk comfortably (Fig. 4).

Acute peripheral nerve injury in birds most often occurs as a result of trauma, viz. automobile accidents, gunshots, bite wounds, lacerations and iatrogenic damage during surgical procedures, application of splints or casts and injection of therapeutic agents (Antolitou *et al*., 2012). The primary cause of the radial nerve paralysis, in this case reported appears to be trauma due to the fall from height. There is less soft tissue covering the bones, as a result blood and nerve supplies would have injured. Radial nerve injury in birds can be difficult to distinguish from muscle or tendon trauma. Such injuries have been reported in owls (*Bubo virginianus*, *Otus asio*), a gull (*Larus argentatus*), a crow (*Corvus*

brachyrhynchos), and a red-tailed hawk (Moore *et al*., 1989). Anesthesia with xylazine and ketamine is reported to be a safe in pigeons (Durrani *et al*., 2009) and the same combination was effective to perform the surgery. A number of standard orthopedic techniques have been used for fracture management in eagle by several scientific workers with variable results (Nanjappa *et al*., 2013). In the present case, humeral fracture complicated with radial nerve paralysis was seen on presentation of the bird. Therefore, amputation of the humerus at its proximal third was done in an attempt to save the life of the bird, prevent from suffering, to provide comfort and for aesthetic purpose.

REFERENCES

[1] Antolitou A, Kazakos G and Prasinos NN. (2012). Peripheral nerve damage in companion animals Hellenic. J. Companion Animal. Med. 1(2):12-19.

[2] Durrani UF, Ashraf M and Khan MA. (2009). A comparison of the clinical effects associated with xylazine, ketamine, and a xylazine-ketamine cocktail in pigeons (Columba livia). Turk. J. Vet. Anim. Sci. 33(5): 413-417.

[3] Griffiths IR. (1974). Avulsion of the brachial plexus-i. Neuropathology of the spinal cord and peripheral nerves. J. Small Anim. Pract. 15: 165-176.

[4] Kumar V, Mathew DD, Pathak R, Ahmad RA and Zama MMS. (2012). Surgical management of an indian spotted eagle with compound fracture of humerus. J. Adv. Vet. Anim. Res. 2: 301-302.

[5] Latney L, Runge J, Wyre N, Larenza-Menzies MP, Neville C and Briscoe J. (2018). Novel Technique for Scapulohumeral Amputations in Avian Species: A Case Series. Israel J. Vet. Med. 73(1):35-45.

[6] Moore MP, Stauber E and Thomas N. (1989). Avulsion of the brachial plexus in a great horned owl (Bubo virginianus). J. Raptor Res. 23: 3-9.

[7] Nanjappa MD, Monsang SW, Aithal HP, Amarpal, Pawde AM, Kinjavedkar P and Zama MMS. (2013). Unilateral wing amputation for the management of humerus fracture in a black kite (milvus migrans). Adv. Anim. Vet. Sci. 1(2S): 24–25.

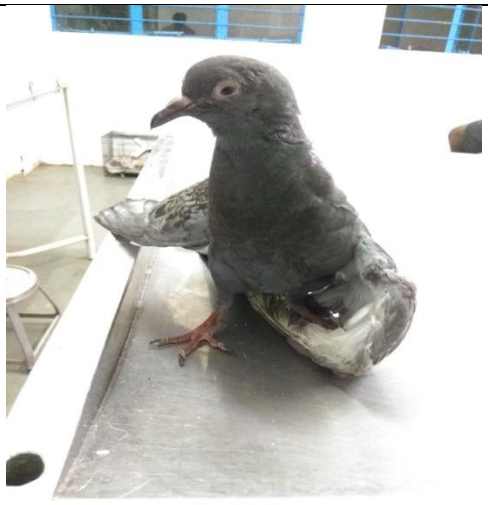

Fig 1. Bird with distal left humeral fracture associated with radial nerve paralysis.

Fig 2. Preparation of surgical site for aseptic surgery.

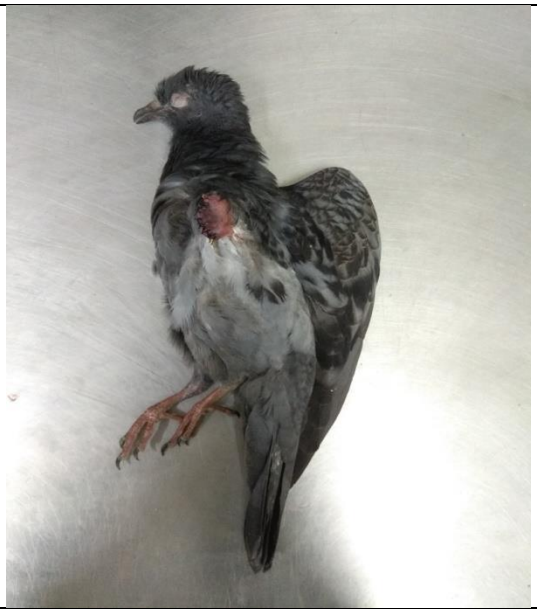

Fig 3. Bird after wing amputation.

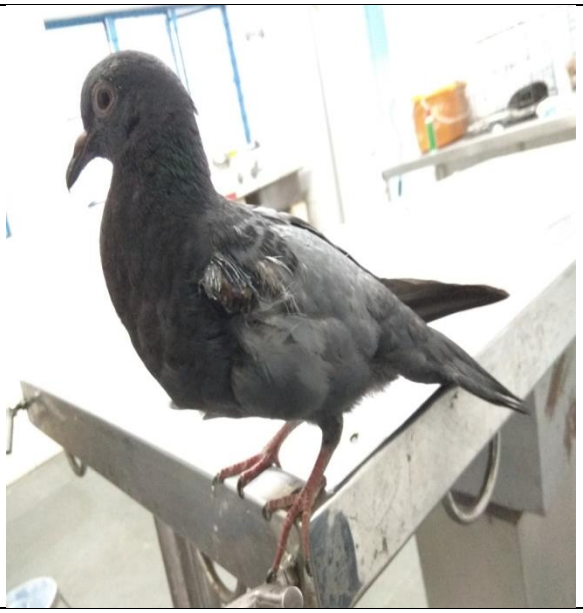

Fig 4. Bird 10 days after surgery.