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Hemanta Baruah

Department of Animal
Husbandry and Veterinary,
Government of Assam, India

Bedanta Pathak

Krishi Vigyan Kendra,
Karimganj, Assam Agricultural
University, Jorhat, Assam, India

Himanta Gogoi

Department of Animal
Husbandry and Veterinary,
Government of Assam, India

Anurag Borthakur

College of Veterinary Science,
Assam Agricultural University,
Khanapara, Guwahati India

Madhurima Bhajoni

College of Veterinary Science,
Assam Agricultural University,
Khanapara, Guwahati India

N Manoranjan Singh

Krishi Vigyan Kendra, Dima
Hasao, ICAR-ATARI, Zone-VI,
Assam, India

Corresponding Author:**Bedanta Pathak**

Krishi Vigyan Kendra,
Karimganj, Assam Agricultural
University, Jorhat, Assam, India

Surgical removal of gunshots and wound management in dog

Hemanta Baruah, Bedanta Pathak, Himanta Gogoi, Anurag Borthakur, Madhurima Bhajoni and N Manoranjan Singh

Abstract

A four-year-old male non-descript dog, weighing 28 kg, was presented as an emergency case after it suffered a gunshot injury in the right forelimb and thorax position. Physical examination of the dog revealed that bleeding with an entry point of gunshots without exit wound results into restricted movement to walk and lift the body. There was no bone fracture and dislocation in the lower extremity examination. A bullet (diameter, 3-4mm) between the 11th and 12th thoracic position, right elbow and humerus joint, head of the fibula was observed on radiographic examination. The bullet was about 1 cm dimension, which stuck at different location and carefully removed. In the examination, the lacerative wound beneath the skin was observed relatively in some longitudinal strands, and no necrosis was present in the site. After the surgery and post-operative treatment, the dog was discharged with a good condition. Consequently, a precise evaluation of the gunshot injury to limb and thorax could not be achieved by easily palpable, which made a prediction of the prognosis difficult prior to surgery. Therefore, if radiography imaging tests provide evidence of a direct impact within the limb joints and thorax, surgery should be considered a primary method to prevent irreversible harm necrosis and specific treatment in small animal practiced.

Keywords: gunshots, atropine sulphate, xylazine, ketamine, non-descript dog

Introduction

In gunshot injuries or wound, most of the damage is not visible and considered to be contaminated and seen mostly unsupervised dogs or allowed to roam freely are at an increased risk in domestic dogs [1], military dogs [2] and wild animals from time to time [3-6]. A gunshot wound is very often rare in small domestic animals and generally comes with a problematic condition. A practitioner should have the adequate knowledge about the types of wounds produce by different firearms and a sound skill to remove it surgically. In small animals, the management of firearm wounds often problematic due to various factors such as type of wound, location of the bullet, type of weapon, is effective on prognosis the treatment and the exact nature of the wound inflicted, projectile type, velocity and the type of tissue affected through [7-9]. The entry wound made by gunshot is generally smaller than the exit wound with some exception cases and retains inside the tissues for a smaller or low velocity weapons. Therefore, the aim of this case report is to provide clinical information, radiological diagnostic imaging of finding, and screening of bullet, surgical approaches and the treatment of small domestic dogs depending upon the type of wound produce by gunshots.

Case history, description, observation, and Diagnosis

A four-year old male non-descript dog weighing 28 kg body weight was brought in state veterinary dispensary hospital with a case history of gunshots after one hours of the incident. On clinical examination, it was found that with severe bleeding with an entry point of gunshots without having the exit wound. Further physical examination of the gunshots revealed that the presence of bullets in the right elbow joint, humerus, tibia and thoracic T-12 and T-13 with easily palpable by the fingers from the outside. The dog was found barking frequently in pain with reluctant to move or lift the body weight. For further confirmation of the number and position of the bullets, radiographic examination with a current of 60 mA was used. The exact position of the bullets was clearly visible in the X-ray film (Fig: 3-5). Hence, it was decided for surgical removal of the bullets to avoid further complication.



Fig 1: Induction of general anesthesia



Fig 2: Surgical removal of bullets.



Fig 3: Bullet at elbow joint and humerus



Fig 4: Head of fibula in left leg.



Fig 5: Views of bullets in T-12 position



Fig 6: Local made bullets of 1 cm size

Treatment: Before performing the surgical operation, dog was restraint with a mouth halter and the site of the bullet wound was washed to prevent infection with 5% povidone-iodine and then flood with normal saline sodium chloride 0.9% to remove the blood clots as well as the necrotic tissues presents inside. Pre-anesthetics medication was done by atropine sulfate @0.02mg/kg, sub cutaneously followed by combination of xylazine and ketamine with a dose rate of @1mg/kg and @5mg/kg body weight intramuscularly, respectively. Positioning the patient for the dorso- lateral approached and then sterna recumbency with the thoracic and pelvic limbs in a flexed position. The incision was made with a scalpel and removed it by using an artery forceps, there was no detectable rupture and vascular blood damage. A total of four number of local made bullets was removed through this surgical operation of bullet dimensions of about 1 cm in length in size and the surgical site was sutured (Fig 6). As a postoperative therapy Ceftriaxone @20 mg/kg intramuscularly for every 12 hourly for 5 days along with fluid therapy, Tribivet@1.5ml and NSAIDS (meloxicam at a dose of 0.5 mg/kg) continued for 3 days consecutive in every 24 hours interval. Wound was dressed regularly with 2% povidone iodine antiseptic solution properly by removing all debris and blood clots to heal completely. Dog was found recovered and able to move his legs within short period of time.

Discussion

Surgical removal of gunshot and wound management is mostly varied from case to case and often comes with a new challenge. Sometimes prognosis may not favourable even after successful removal of the bullets. This case of Gunshot injury is a complicated and rare with subcutaneous penetration of the bullets from the entry wound and lodged four number of bullets near the right elbow (medial), humerus (lateral), head of tibia and another was in the left ventral thorax (T-12) of the body. Fortunately, there was no more deep penetration inside the body cavity. Radiographic examination is extremely useful in determining the location of the bullets and surgical removal in patient with bullets, blood clots, necrotic tissues and the wound management was done as per the basic line of treatment for surgical cases. The use of broad-spectrum antibiotic with fluid therapy, Vitamin B-complex and NSAIDS (Non-Steroidal Anti-Inflammatory Drugs) were used for early recovery without any post-operative any complications. This case agreed with the case reports of Madhu *et al.* [7]. In support of present findings, shotgun pellet pattern is typically diffuse, especially when shot from a longer distance, and that often causes low-grade injuries [1,8,10]. However, gunshot is rare unaware and most of the case must treat in a different point for wound management which is determined by the types of arms, features of the

wound and the numbers of bullets hit in various parts of the body. Line of gunshot wound management is often vary from case to case and often comes with new challenges. For that, a Practioner requires a sound knowledge about the various wounds made by different firearms in a small animal like dog for successful recovery.

Conclusion

The case of gunshot is rare in veterinary practices and mostly encountered in wildlife management. It is a matter of illegal crime and often punishable by law. Here, this case was taking place unfortunately for mishandling by a licensed gun and immediate treatment was sought by the owner for further treatment. The case was treated locally by the Government veterinary officer after a written consent from the owner before referring it for a radiographic examination. It was good enough that the bullets did not penetrated to the visceral organ. It was within the muscle and subcutaneous layer. Therefore, the operation was quite easy for the surgeon and with not much complexity during the surgical operation. Radiographic examination is very much essential for the case like gunshot injury as it gives important clues for the methods to choose about the operation. Even, a single projectile could be foetal for the patient. The long-term effect of multiple projectiles and injury could be lead (Pb) poisoning and tumour around the invasion areas. Further, need of more and strict application of penal sanctions is required to prevent of firearm injuries in animals.

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References

1. Pavletic MM. Gunshot wound management. Compendium on Continuing Education for the practicing Veterinarian-North American edition 1996;18(12):1285-1299.
2. Baker JL, Truesdale CA, Schlanser JR. Overview of combat trauma in military working dogs in Iraq and Afghanistan. Journal of Special Operations Medicine 2009;9(2):105-108.
3. Fullington RJ, Otto CM. Characteristics and management of Gunshot wounds in dogs and cats: 84 Cases (1986-1995). Journal of the American Veterinary. Medical Association 1997;1:658-662.
4. Pavletic MM, Trout NJ. Bullet, bite and burn wounds in dogs and cats. Veterinary Clinics of North America: Small Anim. Practice 2006;36(4):873-893.
5. Nath I, Patnaik TK, Sahoo N, Bose VSC, Das JK *et al.* Management of gun-shot wounds in a sloth bear *Melursus Ursinus*. Zoos Print Journal 2007;22:27-34.
6. Shrivastava AB, Bhargava MK, Singh R, Shahi Apra. Gunshot wounds in a crocodile (*Crocodyluspalustris*) and its management. Intas Polivet 2011;12:170-171.
7. Madhu DN, Monsang SW, Singh J, Pawde AM, Amarpal P *et al.* Indian Journal of Canine Practice 2014;6(2):154-155.
8. Pavletic MM. A review of 121 gunshot wounds in the

9. Bonath KH, Vannini R, Koch H, Schnettler R. Gunshot wound- ballistics, physiopathology, surgical treatment. TierarztlPrax 1996;24:304-315.
10. Capak HNB, Bottegaro A, Manojlovic O, Smolec D Vnuk, Review of 166 gunshot injury cases in dogs. Topics in Companion An Med 2016, 1-2.