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Popular Article

Unraveling the Clues: Diagnosis of Blunt Force Trauma in Veterolegal Cases

Rajaram H. Patel
M.V.Sc. Scholar Department of Veterinary Pathology
College of Veterinary Science & Animal Husbandry Kamdhenu University,
Navsari – 396 450, Gujarat, India
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Abstract

Animals with blunt force trauma frequently provide a difficult case for veterinary forensics, requiring exact diagnosis and interpretation. The knowledge of good diagnostic techniques are essential in diagnosis of blunt force trauma in veterinary legal matters. Veterinarians are able to provide vital evidence for legal procedures when they have a thorough understanding of the mechanics and indications of blunt force injuries.

Introduction

Blunt force trauma is a common source of harm in animals and is frequently seen in maltreatment, car crashes, and falls. Experts in veterinary forensics are essential in identifying and recording these wounds, as well as offering vital proof for court cases. So the etiology, methods of diagnosis, and legal ramifications of blunt force injuries are very important in veterolegal cases.

Pathophysiology

By means of compression, shearing, and deformation mechanisms, blunt force trauma causes tissue damage. This trauma can cause internal bleeding, organ damage, fractures, lacerations and contusions in animals. The force used, the damaged anatomical site, and species-specific vulnerabilities are some of the variables that determine the degree and severity of injuries. Veterinarians can identify the various ways that blunt force trauma manifests and determine the precise effect it has on an animal's health by knowing the pathophysiology of the injury.

Diagnosis

Forensic necropsy, imaging tests, and clinical examination are all necessary in the comprehensive approach to diagnosing blunt force trauma in animals. Clinical indicators that point

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to trauma include lameness, bruises, and unusual behaviour. Computed tomography (CT) scans, radiography, and ultrasound provide important information about soft tissue and skeletal damage. Verifiable proof of trauma is provided by forensic necropsy, which reveals fractures, bleeding, and tissue damage. Furthermore, histological analysis helps to detect mild damage and assess how long-lasting they are. Multiple small pinpoint (1 to 3 mm) haemorrhages (petechiae) may result from trauma where friction causes mechanical stretching and rupture of capillaries (Figure 1). Histologically, a bruise presents as an accumulation of extravasated erythrocytes within the different sub-epidermal soft-tissue layers. Such haemorrhages can occur at all levels of the dermis (Figure 2).

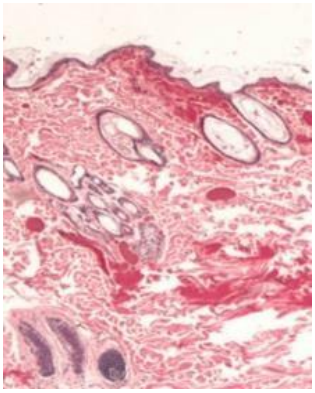


Figure 1 (Histology of Fascia, Dog). **Figure 2 (Gross appearance of fascia, Dog).**

Lacerated wounds of trauma must be distinguished from incised wounds caused by sharp force trauma during diagnosis.

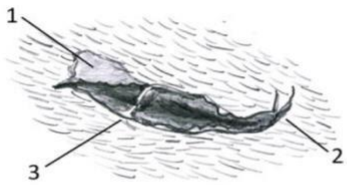
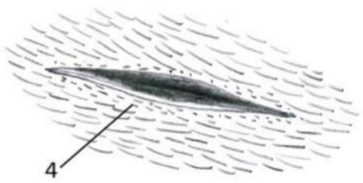
Criteria	Laceration	Incised Wound
		
Margins	Irregular	Regular
Associated lesion	Abrasion (1) or contusion frequently present	None
Extremities	Possibly divergent ("swallow tails") (2)	In line with the axis of the lesion
Tissue bridges	Frequently present (3)	Absent
Hair	Crushed or intact	Cut (4)

Figure 3 (Diagnostic criteria for blunt-force lacerations and incised wounds).

Conclusion

Veterinary forensic investigations involving blunt force trauma face numerous difficulties, requiring a deep comprehension of the pathophysiology and diagnostic guidelines associated with this condition. Precise diagnosis and recording of wounds are essential for ensuring animal care and advancing justice in court. Veterinarians need to be on the lookout for instances of blunt force

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trauma and report them promptly. They should also speak out against animal abuse and neglect.

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