Veterinary Forensics

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WARNING.
This presentation may contain graphic photographs of injured, sick, and deceased animals.
Forensic Sciences (Forensics)

- History of Forensics
- Types of Forensics
- Definition: Veterinary Forensics
- Specific Veterinary Cases

Forensic Anthropologist
Discoveries of Forensic Scientist

- 287BC: Archimedes principle
- 250BC: First lie detector
- 1658: Fingerprinting
- 1828: Polarizing microscope
- 1889: Ballistics
- 1984: Identify criminals from DNA

Forensic Scientist

Joseph Bell (12/2/1837-10/4/1911)
Historic Forensic Television

Current Forensic Television
Significant Veterinary Forensics Case

Dr. Melinda Merck

Types of Forensic Sciences
Processing an Animal(s)
Veterinary Medicine

Weight: 28.9lbs
Emaciated v.s. Disease

Veterinary Medicine

Lameness
Soft tissue injuries
Veterinary Medicine

Severe dehydration
Electrolyte imbalances
Compensatory shock

Histopathology

Link between starvation and gastric ulcers
Histopathology

Clinical Pathology

Emaciation
Hair matting/soft tissue injury
Clinical Pathology
Findings consistent with emaciation

Blunt Force Trauma

• Usually multiple injuries
• Recent and healing injuries
• Presentation
  – Abrasions
  – Crushing injuries
  – Bruising
  – Contusions
  – Fractures
Histopathology/Imaging

Multiple BFT injuries
Lens luxation
Bilateral rib fractures

Blunt Force

• Sustained multiple BFT injuries
  – Head – torn frenulum
  – Chest – lung contusions
  – Abdomen – liver lacerations
• Injuries occurred at different times
  – Regenerative changes: torn frenulum, tongue, top of head (3-7 days)
  – Before death: liver and lung hemorrhage
Blunt Force

- Torn frenulum
- Femur fracture

Penetrating Injuries

- Laceration
- Incision
Incised Wounds

Dimensions of incisional skin wounds:
(2.54 cm = 1 inch)

Wound 1: Length: 12.7 cm  Depth: 1.5 cm
Wound 2: (This was the most severe wound)
  Length: 25.4 cm
  Width: 5.08 cm
  Depth: 3 cm
Wound 3: Length: 22.86 cm
  Width: 1.27 cm
  Depth: 2 cm
Wound 4: Length: 22.86 cm
  Width: 5.08 cm
  Depth: 1 cm
Wound 5: Length: 22.86 cm
  Depth: 2 cm

Diagnostic Imaging

BFT: Brain injury/Neurological effects
Diagnostic Imaging

Gun shot analysis
Diagnostic Imaging (plus)

Use of multiple modalities to document BFT:

DOA: Diagnostic imaging

Chronic changes + Non-ambulatory = Soft tissue changes

ARTHRITIC HIP WITH DEGENERATIVE JOINT DISEASE
DOA: Chronic Changes

Soft tissue changes

DNA Testing

Placed cat at scene
Identify heritage
Placed suspects dog at scene
Large Scale Case

- Defining large scale: puppy mills, hoarding, fighting
- Mass influx of animals at one time

Components of Veterinary Sheltering

**Medical Protocols**
- Intake
- Disease
- Critical
- Deceased

**Procedures**
- Medical boards
- Medical process

**Sheltering**
- Protocols
- Daily Care
Intake Medical Examination

Veterinarian  Handler  Scribe (Runner)

Treatment Drugs for the Field

**DEHYDRATION**
- IVC, IVF, needles
- Tape, scissors

**EYE CONDITIONS**
- Ophthalmoscope
- Topical anesthetic
- Antibiotic ointment

**EAR CONDITIONS**
- Infections, polyps, bleeding

**SEVERE URI**
- Saline
- Injectable antibiotics

**DIARRHEA**
- Dewormers
- PCR
Documentation for Veterinary Sheltering

- Medical records (intake examinations, medical discharges, diagnostics, offsite medical reviews)
- Treatment sheet, recheck sheets, referral sheets
- Daily observations
- Daily inventory
- Necropsy

Documentation on Individual Animal

There were seven red satin-like ribbons tied in a cluster around the left leg of the chicken. The number seven has gained the most worship and popularity in the history of Santeria (old world religion originating in what is now present day Nigeria) and is referred to as the seven African powers (aka Siete Potencias). These powers can be likened to modern day saints worshipped in Catholicism.
Relevance of Veterinary Forensics

- Future of Forensics
- Historical Forensics

- History/circumstances
- Abnormal Exam Findings
- Veterinary Statement
- CONCLUSION
- Diagnostics/Treatments
Animal Abuse: Domestic Violence

UPCOMING FIR WEBINAR SERIES

www.aspca.org/fir
1:00-2:30 pm EST, Tuesdays

• Field Sheltering and Temporary Shelters (9/18)

Past sessions have been recorded and posted on ASPCApro.org/fir:

1. ASPCA Field Investigations & Response (FIR) (6/19)
2. Joining the ASPCA FIR Team (6/26)
3. The ASPCA’s Disaster Response Program (7/10)
4. Large Scale Operations (7/24)
5. Animal Cruelty Investigations (8/07)