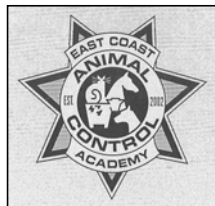


Investigating Animal Injuries



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Exam Handouts

- Intake Exam Form
- Body Scoring
 - Small animal
 - Horse
- Fecal Scoring
- Tufts Scales

Examination of the Abuse Victim

- Take Care – animals who have suffered neglect or hoarding are often unsocialized
- Ask a veterinarian for chemical restraint if needed
- Make sure animal is well enough to withstand the stress of exam (esp. cats)
- Assess and document dehydration prior to providing water or fluids
- Collect samples prior to intervention of any kind
 - Feces, urine, blood, vomitus, etc.
 - If hair is shaved from a wound, preserve it
 - Gunshot residue, weapon fragments, fibers

Examination of the Abuse Victim

- Take full body x-rays on all cases
- Recruit a photographer
- Add rulers in the photo when documenting injuries
- Identify (photo), remove and preserve any evidence that might be traced back to the perpetrator
 - Projectiles – arrows, bullets, etc.
 - Bindings – rope, duct tape, etc.
 - Hair, blood, glass, clothing fibers, etc.
 - Maggot analysis can provide a timeline for duration of wounds

Examination of the Abuse Victim

- Issue a series of preliminary reports until you are sure results are final
- Finalize the report as soon as is possible
 - Can convince a judge to sign a confiscation order for removal of additional victims
 - Can result in generation of warrant for arrest for suspect
- Using medical and industry specific terms in the report to make findings very specific is good
- But a final interpretation “in plain English” is a good idea, as this may be better understood in a court of law

Multiple Victim Cases

- May not have the resources to thoroughly examine every victim
- Every victim does get a cursory exam
- Examine thoroughly the animals in the worst condition, to document the abuse
- Examine thoroughly also animals in the best condition, to show level of care that could have been provided to all

Euthanasia

- Humane treatment of the victim may necessitate euthanasia prior to any animal cruelty hearing
- Complete and thorough necropsy should be performed by a veterinarian
 - By a board certified veterinary pathologist is even better
 - Or an expert in animal forensics
 - We send ours out to a diagnostic lab, and designate on the request that it is a cruelty case
- Cause of death should be listed as euthanasia

Death After Confiscation

- It is not unusual for victims to die after confiscation
 - Stress of confiscation can compound ongoing disease
- Be absolutely sure that excellent care during confiscation is carefully documented
 - When animal control provides questionable care, or can not prove excellent care, the case is weakened
 - Judge or jury must be sure the animal was better off for being confiscated

Behavioral Assessment

- If animal shows no aggression during handling by multiple people, this may refute allegations that abuse was in response to unprovoked aggressive behavior
- Evidence that animal can be easily groomed refutes claims that animals with severe matting or ingrown toenails were not due to owner's inability to restrain for grooming
- Standardized temperament testing can be used
 - SAFER
 - Assess-A-Pet
 - Temperament Testing – <http://www.atts.org>

Behavioral Assessment

- There is a strong tendency to assume that cowering is associated with history of abuse
 - Some animals are just timid
- Animal's friendly reception upon being reunited with the owner does not rule out abuse
- Fear of or aggression toward a particular person does not indicate history of traumatic encounter with that person

Hit By Car

- Common cause of trauma to dogs and cats
- Also used to explain other types of injuries
- Look for road debris on the coat
- Very unlikely but not impossible if animal found inside a building
- Look for injuries atypical of hit-by-car
 - Puncture wounds
 - Bullet entries

Fall From a Height

- Pets almost never fall down stairs unless they are blind
- High Rise Syndrome - pet leaps from a balcony or roof
 - Trauma to the chest, often with collapsed lungs
 - Fractured Mandible (lower jaw) and any other fractures

Burns

- Burn due to abuse much more rare than burn due to house fire
- Reports of other kinds of fires burning animals are suspect – animals run away from them
 - Stove or other appliance catching on fire
 - Fireplace or Barbecue
- Burn due to abuse can attempt to cover previous abuse
 - Beatings, strangling, or gunshot
 - Be careful no to focus only on the burns during exam

Burns

- Triad of juvenile symptoms persisting past the age of 5 years old that predict adult crime
 - Cruelty to animals
 - Firesetting
 - Enuresis (bed wetting)
- 45% of prisoners convicted of violent crimes displayed the juvenile triad
- 13% of prisoners convicted of nonviolent crimes displayed the juvenile triad
- Burning an animal may be only one aspect of a more widespread crime spree

Burns

- Estimate percentage body area of burns
 - Can measure a single burn, and then divide its area by the total body surface area
 - Or use the “Rule of Nines”
 - Head is 9% of body surface area
 - Each arm is 9% of body surface area
 - Torso front and back are each 18% of body surface area
 - Each leg is 18% BSA (9% front and 9% back)
 - Genitals are the remaining 1%
 - Babies have an adjusted formula
 - Head is 18% and each leg 13.5%
 - Use this for puppies, kittens and small breeds with large heads
 - Most burn victims have burns at least 25% of BSA

Burns

- Body Surface Area Chart

Wt (kg)	BSA (m ²)	Wt (kg)	BSA (m ²)	Wt (kg)	BSA (m ²)
1	0.10	11	0.49	21	0.76
2	0.15	12	0.52	22	0.78
3	0.20	13	0.55	23	0.80
4	0.25	14	0.58	24	0.83
5	0.29	15	0.60	25	0.85
6	0.33	16	0.63	26	0.87
7	0.36	17	0.66	27	0.90
8	0.40	18	0.68	28	0.92
9	0.43	19	0.71	29	0.94
10	0.46	20	0.73	30	0.96

Burns

- Body Surface Area Chart

Wt (kg)	BSA (m ²)	Wt (kg)	BSA (m ²)	Wt (kg)	BSA (m ²)
31	0.98	41	1.19	51	1.37
32	1.00	42	1.20	52	1.39
33	1.02	43	1.22	53	1.41
34	1.05	44	1.24	54	1.43
35	1.07	45	1.26	55	1.44
36	1.09	46	1.28	56	1.46
37	1.11	47	1.30	57	1.48
38	1.13	48	1.32	58	1.49
39	1.15	49	1.34	59	1.51
40	1.17	50	1.35	60	1.53

Burns

- Swab burns for accelerants
 - Not always an associated odor
 - Submit to forensic chemist for gas chromatography
 - Porous materials from the scene may have absorbed accelerant – cloth, paper, etc.
 - Place in metal cans and seal to prevent evaporation
- Burns to the perineum, face, ears and eyes are more painful and may cause loss of function
- Amputation of more than one leg due to severe burns causes severe mobility problems
- Eschar – coagulated surface tissue

Burns

- Thick haircoats can hide burn wounds from sight
- May not become apparent for several days, when skin begins to slough
- Color of smoke reported by witnesses can give clues as to accelerants used
- Color of flames reported by witnesses can give clues as to heat of fire generated

Burns

- Most burning victims have smoke inhalation
 - The leading cause of death in burn victims
- Signs of smoke inhalation
 - Coughing, gagging, difficulty breathing, open mouth breathing
 - Weakness or incoordination
 - Rubbing at the eyes
 - Bleeding from the nose
 - Mucopurulent nasal discharge
 - Spasm and edema of the voicebox (cats)

Burns

- Determining whether burning happened before or after death
 - Burning alive often carries stiffer sentence
 - Suspects may claim they burned the body after finding dead
 - Indicate exposure to fire prior to death
 - Carbon monoxide in blood, liver or spleen
 - Cyanide in blood
 - Smoke, soot or burned debris in airways
 - Foam in the airway
 - Telltale lesions on lung biopsies

Burns

- Chemical burns
 - Drain cleaner = lye = sodium hydroxide
 - Also used to make crystal meth
 - Bleach sometimes also added
 - Mixed with a thickener agent so it sticks to fur and skin
 - Flour, cornstarch or pancake mix
- Analysis for skin and fur samples from burns can identify the chemical

Burns

- Microwave burns
 - Have a unique burn pattern that spares the SC fat
 - “relative layered tissue sparing”
 - Metal collar buckles cause burns due to arcing
 - At one time, microwave instruments designed specifically for rodent euthanasia were considered acceptable for euthanasia by the AVMA
 - Report made it clear that commercial microwaves for home uses were not acceptable
 - Defense might be mounted that microwaving animals is not cruelty because the AVMA accepts it as euth method
 - Understand the exact wording to combat this defense
- AVMA Panel on Euthanasia Report

Sharp Force Injuries

Stab Wounds

- Track left by the wound is deeper than the skin wound
- Powerful blow could leave a bruise at the knife hilt

Incised Wounds

- Tracks are shallower than the width

Chop Wounds – axes and rotating blades

Dicing injuries – dragging across rough surface

Puncture wounds – ice pick type tool

Bite wounds

Bite Wounds to Animals

Killing or wounding livestock

- Wildlife experts can interpret bite marks – most likely animal
- Saliva DNA is sometimes more helpful than impression smears for dogs who produce tearing injuries
- Sample any blood that does not seem appropriate to the wound – may belong to the attacker
- Use a forensic odontologist for bite mark analysis
- Check also the environment for evidence left behind:
 - Tracks
 - Scratch and scent marks
 - Scat
 - Traces of fur, blood, saliva

Projectile Injuries

- Investigation can be difficult, as there are circumstances where shooting animals is legal
 - Legal killing of meat animals
 - Hunting wildlife in season
 - euthanasia
- A common scenario in cases of domestic violence is for the abuser to kill a family pet in front of a spouse or child to demonstrate power and control
- If you cannot prove cruelty to animals, there may be other charges that will stick:
 - Discharging a firearm within city limits
 - Child endangerment
 - Domestic violence

Projectile Injuries

- Full body radiographs are essential
- Most are initially misdiagnosed as vehicular trauma
- Abdominal projectile wounds are more likely to have hidden life threatening complications – refer to a vet for exploratory surgery
- It's not unusual to find bullets or shot on an x-ray as an incidental finding – check previous records if they are available

Projectile Injuries

- Entry wound – often burned
- Exit wound – can be caused by tissue and bone in addition to the projectile
- Contact wound – ring shaped bruising caused by contact of the gun with the animal when it is fired
- Close range wound –
 - Singing of fur within 15 cm
 - Smoke fouling of the fur within 30 cm
 - “Tattooing” – embedding of gunpowder into the skin within 60 cm

Ligatures

- Outgrown collars embedded in skin are common, and can cause difficulty breathing
- If ligature not still attached, ask who, when and how it was removed

Claims of Care

- Tufts Scales can help objectively evaluate:
 - Weather exposure
 - Environmental Health
 - Physical Care
 - Body Condition (also Purina)
- Check Veterinary Records
 - No vet visits in the past year makes regular care less likely
 - Presence of parasites and disease testify to lack of adequate care
 - Vets may require owner permission to release records without a court order, except rabies vaccination

Be Specific

- Be very specific when recording information about animal and environment
- Water - how much, where, is it clean?
- Shade - percentage of enclosure
- Print out weather report from the day of investigation in that zip code
- Local climate information can be helpful
- Measure enclosure and square feet per animal
- Any information about food quality and air quality
- Animal's interest in environment

Keep Excellent Records

- Once the animal is in your care, you are obligated to document care that exceeds the situation the animal was removed from
- If it is not recorded, it did not happen
- Record daily
 - Food and water intake and eliminations
 - Notes on behavior and exercise
 - Every examination, test result, diagnosis, and treatment
- Weekly body weight