COMMON DISEASES IN WILD ANIMALS, THEIR TREATMENT & WOUND MANAGEMENT

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Introduction:

Understanding the health as "a state of well being: free from diseases, soundness of body and mind, in harmony with the environment" where as of DISEASE is a condition resulted from the collision between a pathological agent and a susceptible individual. Hippocrate defined disease as a disharmony with in the body, between the body and mind, and between man/animal and the environment. By putting the narrow definition in our common use, we neglected the population and preventive medicine in human, domestic and zoo animal medicine. Wildlife medicine or zoological medicine of captive and free living animals is a relatively new field in India and we must be sure that our application of disease principles is based upon the broad definition of disease. General observation of animals:
Each animal should be carefully observed every day. Notice should be taken not only of its physical state, but whether or not it is eating, drinking, defecating and urinating normally and an assessment made of its activity. Slight changes in activity may be the only outward sign of systemic disease. Careful examination of an animal's enclosure or den can also be rewarding. There are occasions when direct observation of animals would involve too many disturbances - immediately before, during and after giving birth for example. Rather than trust that all is well in these circumstances, consideration should be given to the use of microphones or even video cameras with which animals may be monitored remotely.

Indication of illness:

The sick animals behaves sluggish in their activity, it looks dull and depressed. It restricts the movements of ear, trunk, tail and legs. The animal becomes partial or complete anorexic (less interest in feeding). The abdominal pain can be expressed by grunting or groaning

sound with restlessness, lying down and getting up, elephant can place the trunk in the mouth, biting the tip of the trunk or express the abnormal posture (Personnel observation). The urination, rumination, defecation and lacrymation are also demarcated (reduced or increased) in some condition.

Diseases of Wild Animals:

The diseases of captive/wild animals can be grouped broadly in to non-infectious one and infectious one. The major non-infectious diseases of captive animals are described as a common for all species where as infectious diseases has been described separately according to the major species wise.

Non Infectious Diseases:

Digestive system: Major disease problems of digestive system include tooth problem, tusk problem, choke, tympany, indigestion, constipation, intestinal obstruction, colic and enteritis.

Respiratory system: Major respiratory problems are rhinitis, cough, pharyngitis, pneumonia; tracheitis and bronchitis are common problems.

Nervous system: Heat (Sun) stroke due to high ambient temperature, poor ventilation, prolonged improper transportation and over crowding in small space can predispose to the condition leading to stress.

Musculo skeletal system: Wound, dislocation, fractures, sprains, degenerative joint disorders, rickets, capture myopathy and physical injuries (Cooper, 1968) are common problems in captive animals. Trunk injuries like crushing, laceration, penetration of foreign bodies and paralysis have been documented in elephants (Fowler, 1986).

Foot Injuries: Over grown sole, overworn sole, cracked sole and heel, over grown nails, split nails, ingrown nails, wound, abscess, laminitis on account of prolonged work, over feeding with rich food, interdigital fibroma, and uneven wear and tear of hooves have been reported. The removal of causal agents for such disorders, proper care and management of feet can mitigate the problem.

Poisoning: Accidental ingestion of toxic materials like plastic can cause choke, plants or plant material can lead to toxicity, licking of paints

leads to lead poisoning, pre flowering stage of sorghum feeding or ornamental plants of enclosures (Ratigan, 1921) can cause
cyanide poisoning in captive animals. Apart from this spray of insecticides, disinfectant or pesticides can also causes toxicity and mortality in captive animals of zoo.

Metabolic and nutritional disorders: Over use or deficient elements in food can lead to metabolic and deficiency disease in captive wild animals (Wallach and Boever, 1986).

Infectious Diseases:

Diseases, which are caused by infectious agents, like bacteria, virus, parasites or fungi are known as infectious one. The infectious diseases can be contagious in nature. All the contagious diseases are infectious one, but not all the infectious diseases are contagious in nature.

Clinico Preventive Approaches For Captive Animals:

1. Eliminating Stress: Stress of all kinds lowers an animal's ability to resist diseases. Stress can be minimised to a great extent if the enclosure is designed by taking into account the animals behavioural needs, and by putting animals of a species into an enclosure as per their natural social grouping behaviour.

2. Minimise the causes of Trauma: Trauma is an important cause of mortality in captive wild animals. Aggression by cage-mates, sudden dashing against enclosure walls drowning in wet moats, and even electrocution are some common causes of trauma and death among captive animals.

3. Feeding and Nutrition : Providing good quality of variety food, in adequate quantity and by adopting a feeding regime compatible with animals behaviour will go a long in keeping the animals healthy.

4. Maintaining Good Hygiene: An unclean enclosure is a good breeding ground for disease agents and vectors. A clean enclosure is not only appreciated by the visitors but it also keeps the animal healthy. Regular and through removal of waste material, hosing down the enclosure walls and floor with high- pressure jets of water, and application of disinfectants (5.25% sodium hypochlorite solution, or 4% Formalin soln, or 2% caustic soda soln) will keep pathogens at bay.

The design of the animal enclosure should also be such that it permits easy cleaning.

5. Proper stock selection: Zoos are becoming important centers for conservation breeding. It is therefore imperative to choose only healthy specimen as breeding stock. As per CZA mandate.

6. Quarantine Measures for New Arrivals: Quarantine, in the context of zoo management, means keeping newly received animals from coming in contact with those already in the zoo. Quarantine wards should not be built close to the zoos main exhibit area. To prevent cross-contamination, keepers working in quarantine facilities should not be allowed to attend animals in the resident collection. For most mammals, birds, and reptiles a minimum of 30 days is recommended, 45 days for psittacines (parrots and parakeets), and 90 days for primates.

7. Health Screening Programme: It is therefore advisable to institute a health screening programme to prevent diseases from striking or to detect them before they manifest clinically so that pre-emptive measures can be taken. A health screening programme will include the following procedures:

(a) Routine parasite screening, (b) T.B Testing , (c) Routine blood screening, (d) Dental Care, (e) Hoof Care .

8. Regular Vaccination: Vaccination is an effective method of protect captive animals against many infections diseases. Each zoo must draw up its own schedule of vaccination by first researching the types of disease prevalent and the kind of vaccines available.
Killed vaccines should preferably be used a wild animals. Antibody titre should be checked before and after vaccination to test effectiveness of vaccines.

Preventive Approaches For Free Living Wild Animals:
☐ Isolation or Quarantine of sick animals
☐ Urgent diagnosis and treatment
☐ Destruction of natural habitat of infection
☐ Ban on transportation of animals and man
☐ Hygiene, sanitation and management
☐ Preventive vaccination and chemoprophylaxis
☐ Control of diseases in domestic animals and birds
☐ People’s participation

☐ Monitoring and Investigation of success rate of result of control programme:

Wound Management:

Wild animals unlike domesticated ones are more prone to self-inflicted injury and may also inflict injury to fellow animals in the enclosure. The initial step of providing first aid and emergency treatment to wild animals is to capture and/or restrain the animal and if possible to transport it to separate ad hoc enclosures/cages where veterinary assistance can be provided. As such, there must be provision for such enclosures and/or cages where the animals requiring emergency veterinary care can be kept until complete recovery. Every possible precaution should be taken to minimize struggling of animals during restraint, capture and transport. The cages and/or enclosures should be spacious and comfortable. Wound is defined as any break in continuity of skin or tissue cause by injury or surgical intervention. Trauma also literally means physical injury. However trauma is more deeply distressing or disturbing condition resulting from any stressful event or physical injury. It may be associated with physical shock, sometimes to long-term neurosis. Wound can broadly be grouped as open or closed wound.

Open Wound, usually contaminated mixed with many objects.
Clean open wound or aseptic wound, which seems practically non-existing.
Contaminated wounds, which are inflicted by clean objects such as puncture1 wounds of compound fracture.
Infected wounds are most common form of wounds under field conditions. Presence of debris and exudates and poor blood perfusion due to infection, infected wounds are difficult to heal.
An abrasion is a wound in which the skin is not completely punctured and only outer border is lost. These wounds heal up rapidly after cleaning, as the epithelial layers are still fresh.

Protocol For Wound Management In Wild Anima1s:
Following general guidelines are recommended for management of wound:
☐ Always wear the protective clothing including head and face masks and gloves while handling an injured or wounded wild animal.
☐ The basic objective of all wound/trauma management is to clean the wound, so that it ran be closed and further bacterial invasion is prevented.

☐ Contaminated wound should never be closed. It may lead to abscess and latter septicemia.
☐ Carefully remove wound inflicting agents or contaminants like piece of wire, glass, pebble pieces, etc. by using clean/ sterilized forceps. This will help in better healing.
☐ Collect bacteriological swab for culture and antibiotic sensitivity test. This helps in deciding appropriate course of antibiotics.
☐ Clip the hair of the area surrounding the wound. In case of birds, pluck the feathers. Clean the surrounding areas with antiseptic like povidone iodine, cetrimide (1:1dilutions), chlorhexidine (1:1000 dilution), etc. Avoid contaminating wound during the process.
☐ After cleaning the surroundings, clean the wound. Mechanical cleaning of wounds with swabs or cotton wool will damage healthy tissues and may force debris further deep into the wound. Loose strands from swabs or cotton may also get deposited as additional debris.
☐ The safest way to clean the wound is to flush it with sterile saline. No antiseptic or disinfectants is required, as some of these may be cytotoxic and destroy healthy tissues except chlorhexidine 0.05% solution. Plain water can be used for flushing out bulk of the foreign matter in very dirty wound. But being isotonic, best option is saline.
☐ Chemical debriding agents such as mixture of benzoic and salicylic acids will facilitate removal of necrotic tissue from the wound. This is very useful in wild animals , as some times it is not easy to dress the wounds.
☐ Then apply antiseptic dressing. The aim of wound dressing is to keep the wound in moist condition, so that the necrotic tissue can be removed by animal defense mechanism. Use of silver ions and silver mixed with sulpha drugs is very effective in treatment of chronically infected wounds or heavily contaminated wounds.
☐ The wound should be packed with some antiseptic swab, to prevent the ingress of more debris during cleaning. This practice also continues to keep the wound moist, which is essential for good, rapid healing.
☐ If wound is assumed to be cleaned of contamination, apply antiseptic dressing at daily interval.
☐ Removing dressing may dislodge any clots that might have formed. Any resulting bleeding can be controlled with sterile pads of preferably haemostatic dressing.

Management Of Maggoted Wound:
Any wound during warm and moist period of the year is susceptible to invasion by flies and Maggot infestation. Animals with diarrhoea or faecal contamination around the hindquarters are at high risk. Flies lays

egg on these wound and they hatch quickly into tiny maggots that starts eating necrotic and healthy tissues. Removal of the maggots either mechanically (picking with forceps) or chemically (by applying turpentine oil or diluted cypermethrin solution) is the first step towards management of maggoted wound.

Injection of ivermectin can also be used to control maggots. Inject non-steroidal antiinflammatory agents such as flunixin or meloxicam to counteract inflammatory effects of toxin produced by the maggots.