Osteopathic contribution in the well-being of raptors

By:
Leonidas Christodoularis
B.Sc.Ost.,P.G.Dip.An.Ost.

Profile

- Working voluntarily in Wild life hospitals from 1994.
- Graduated from the European School of Osteopathy in 2002 (U.K.)
- Post Graduate Diploma in Animal Osteopathy in 2003 (U.K.)
- Practice osteopathy in a private clinic in Thessaloníki, Greece.
- Working in Wild life clinics in Athens and Thessaloníki, Greece.
- Associate with '*Anima*' an organization 'for the protection and rehabilitation of wild life.
- Cooperating with the department of exotics and wild life in the Veterinarian School of the *Aristotelian* University of Thessaloníki.

Aims

- Find optimal health in animals.
- How can we assess in case of raptors?
- What disabling factors can reduce their well-being?
- How can osteopathy help in the rehabilitation process?

Optimal Heath in Animals

• The physical and psychological well-being of animals (also called animal welfare) {1}.

• Welfare, can be a *state* of an individual, in regard to its attempts to cope with the environment……where control over the environment is extremely important for welfare reasons {2}.

Vital Skills

- Vision
- Flying
- Hunting
- Fitness

(Osprey-fish eagle)

- Any factors impeding these skills would limit his well-being and his chance to survival.

Assessing Well-being

- Three concepts that can be use to judge the health of an individual bird:

1. *Wellness* in a biological functional perceptive (structural level).

2. *Positive feelings and emotions* (comfort, pleasure). Affective states such as suffering, pain, frustration must be reduce (psychological level) .

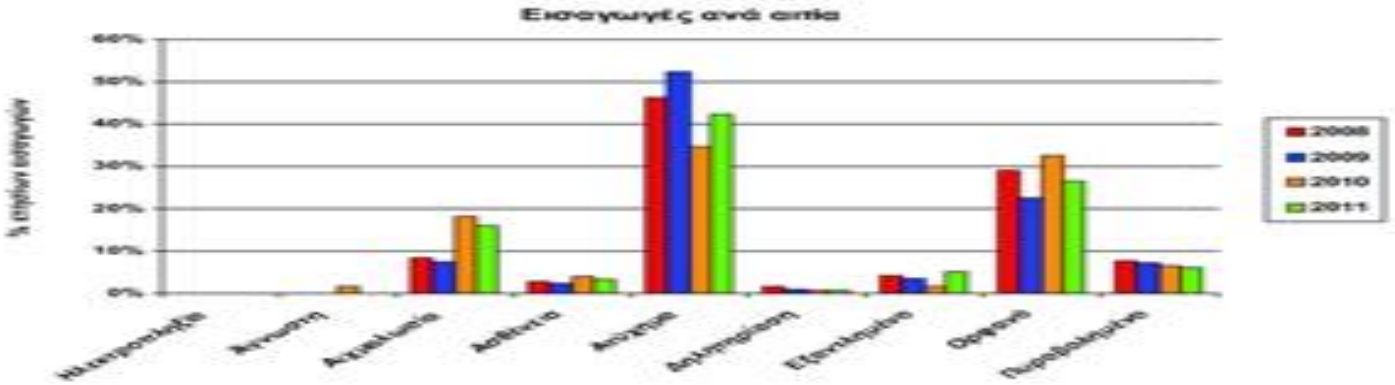
3. *The 'normal' or natural behaviors* of the individual must be expressed (social level).

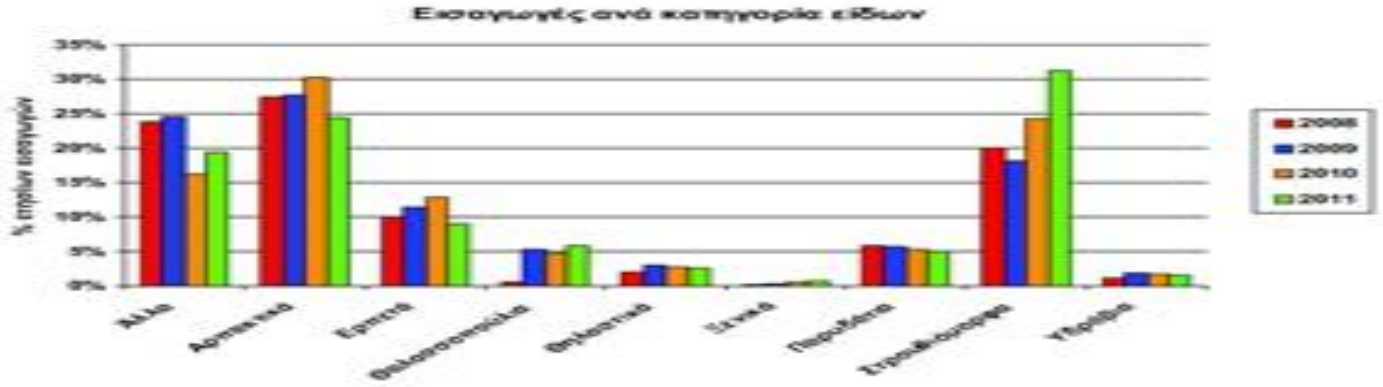
'*Anima*' wild life clinic admissions, 2008-2011

- 2000 casualties each year are treated
- 40% where due to **accidents** with birds of pray being the majority
- <10% due to shooting
- 25% orphanage (pessarines being the majority)
- Other causes around 10% : sickness, poisoning, exhaustion, captivity.

ΕΙΣΑΓΩΓΕΣ ΑΝΑ ΕΤΟΣ

από 2008 έως 2011





Injuries of Raptors due to Accidents

- Concussions
- eye injuries
- air sac injuries of the respiratory system
- Injuries in the skin, muscles, tendons
- Nerve injuries
- Fractures
- Dislocations
- Ruptured organs (liver, spleen)

Complications of injuries

- Joint laxity
- Joint incongruity
- Arthritic changes
- Muscle weakness (disuse, pain, nerve injury)
- Tendon contractures and entrapment
- Herniation of internal organs
- Infection (Osteomyelitis, bumblefoot)
- Intra-peritoneal hemorrhages
- Death

Osteopathy is part of a multidisciplinary approach in a wild a life clinic.

- Veterinarians
- Technicians
- Biologists
- Rehabilitators and wild life carers

❑ To ensure that injuries, can be treated with the most favorable outcome, in the least time possible.

Problems in captivity

- Stress
- Chronic low level of physical trauma particularly to feet from inappropriate flooring.
- Infections
- Long acquaintance to humans
- Damaged feathers
- Loss of stamina

Approach to injuries in raptor rehabilitation

1. *Biological stabilization* with or without surgical means.
2. *Removal* of somatic dysfunctions in the soft tissue.
3. *Exercise* fitness regimen, prior to release.

How Osteopathy can contributes to Raptor's welfare

- Osteopathic principles and techniques can be applied to aid the biological function of animals in the same way as they are applied to humans.

❑ One of the major criteria that should be met is that the bird's illness or injury must be resolved completely and pose to sign of long term physical threats like arthritis or cataract {3}. Otherwise the bird is not releasable.

Somatic Dysfunction and functional disturbances

• According to VanBurskirk {4} S.D. Can be triggered and maintained by a continuation loop of noxious stimuli. This would maintain muscles, joints and related tissue in an abnormal guarding position and cause changes in the connective tissues, solidifying abnormal position.

• Louisa Burns D.O. had created S.D. in rabbits and later demonstrated the long term pathological changes in various organ systems, affected by this functional change{5}.

Osteopathic evaluation for somatic dysfunction

- Palpatory characteristics of somatic dysfunctions (S.D.){6}.

- Sensitivity to palpation
- Asymmetry
- Restricted motion
- Tissue texture changes

Applying Osteopathic treatment for rehabilitation of raptors

- Application of manual techniques to restore optimal motion in joints, muscles, tendons, nerves, circulation of blood and lymph.

Effects of Osteopathic Treatment

- Reduction of strain in the neuromusculoskeletal system.
- Help in the reduction of pain and in central desensitization of afferent input.
- Reduce the rehabilitation period and limit so complications of captivity (muscle wasting, human contact, e.t.c.).

Osteopathic cases in Raptor rehabilitation

Injuries

- Mobilization of skeletal structures after fracture has healed.
- Brachial plexus trauma with wing paresis
- Mild concussions
- Torticolis
- Contractures/adhesions of tendons

Bonelie's eagle

- Loosening soft tissue in stable fractures.

Peregrine falcon

Eagle Owl

Common Buzzard

- Orphan with tendon/fascia adhesions possibly caused inappropriate diet. Couldn't stand on his toes from the contracted tendons.

Torticollis

Limitations

- Arthritic changes in joints or close to joints, limiting range of physical movement.
- Joint instability (ex. ruptured ligaments)
- Moderate neurological damage.
- Great limitations if there is no multidisciplinary team cooperation.

- Arthritic changes

close or into joint areas.

Peregrine falcon

Multidisciplinary team cooperation

- Veterinary broad examination and diagnosis. Use of x-ray, blood tests, scans.

Conclusion

- Welfare, is the state of physical and emotional wellbeing {1}.
- … poor welfare equates to biological dysfunction {7}.
- The majority of biological dysfunctions in raptors come from injuries (human related : RTA, power lines, glass windows, loss of vital space).
- Osteopathy can possibly reduce pain in animals by removing somatic dysfunctions (S.D.) like it has been found to do in humans. This is difficult to prove cause it is extremely challenging to study how animals perceive pain.
- S.D. can potentially lead to solidification of abnormal position{4} . Their removal has shown to speed recovery in raptor rehabilitation and possibly reduce long term disabling consequences.
- More research is needed.

For a good release!

Long Legged Buzzard

References

1. Hewson, Caroline J. *"What is animal welfare? Common definitions and their practical consequences"*. The Canadian Veterinary Journal 44 (6): 496–9, 2003.
2. Broom DM. *"The scientific assessment of animal welfare"*. Applied Animal Behavior Science, 20:5-19, 1988.
3. Arent L. "*Reconditioning raptors. A training manual for the creance technique*." The Raptor Center, College of Veterinary Medicine, University of Minnesota, Minneapolis MN USA., 2001.
4. Van Buskirk RL. "*Nociceptive reflexes and the somatic dysfunction: A model*". J Am Osteopath Assoc., Sept;(90): 792-809, 1990.
5. Kuchera WA. "*Osteopathic Principles in Practice*", p.31-32, 1994
6. Kuchera ML. "*Osteopathic manipulative medicine consideration in patients with chronic pain*". J Am Osteopath Assoc., Sept;(105): S29-S36, 2005.
7. Hemsworth, P.H., and Coleman, G.J. Human- *"Livestock Interactions: The Stockperson and the Productivity and Welfare of Intensively-farmed Animals"*. CAB International, Oxon UK; 1998.