

Introduction



Having promoted and successfully organised the first series of Osteopathic Congress in Italy, the University Foundation L.U.Me.N.Oli.S and the School of Osteopathy C.R.O.M.O.N. of Rome are delighted to announce for the first time ever in the history of osteopathic development.

Finally, on Saturday afternoon there will be the possibility to attend six Workshops lead by some international guests and speakers of the congress.

The First International Congress of Osteopathy in Animal Practice

Through the gathering of the most representative associations and the most experienced osteopaths in this peculiar but fascinating field, this congress aims to propose the osteopathic practice as a Science, Art and Integrated Manual Medicine; applicable successfully to the majority of the animal kingdom; available to share a common language based on evidence and research, in open interaction and integration with veterinary surgeons.



The objective of the event will be to propose the evidence and the efficacy of osteopathy applied to most species of the animal kingdom, with all of its limits and results: from birds to equines, from reptiles to elephants, from the exotic animals to the domesticated ones.



Through a clinical and research-based language, Osteopathy will be offering its contribution to the assistance and health of many animal patients. Each session will explore multiple aspects of Osteopathic manipulation on different animals presenting various clinical conditions.

They will then be discussed in depth during the round table sessions that will gather numerous experts in the medical and osteopathic field. In addition, the objective of this congress will be addressed to the Osteopaths present, by inviting them to expand their knowledge and clinical experience to a world often underestimated, but yet so open and responsive to Osteopathic treatment, such as that one populated by animals...



During Friday 28th and the morning of Saturday 29th of September, the congress will be arranged into six sessions addressing different species of the animal kingdom (exotics, cats, dogs, birds, equines, wild), with national and international speakers, who will be presenting research based studies made in the light of an integration between veterinary and osteopathic medicine.



Program



Friday 28th September 2012

09:00 - 10:30 - FIRST SESSION: INTEGRATION OF VETERINARY AND OSTEOPATHIC MEDICINE IN ITALY AND INTERNATIONALLY
Chair: L. Zicarelli - Moderator: K. Friedrich

08:00 - 09:00 Registration

09:00 - 09:10 Opening (P. Tozzi - P. Zavarella CROMON / K. Friedrich - SIVAS-Zoo)

09:10 - 09:15 Contribution from the University of Naples (L. Zicarelli - UNINA)

09:15 - 09:30 Speech (D. Loni - OrdineVet)

09:30 - 09:45 Non Conventional Medicine in Animal Practice: where we are and where we are going (D. Bettio - UMNCV)

09:45 - 10:00 The Society of Osteopaths in Animal Practice (S.O.A.P.): a british associative model of Osteopathic synergy in Animal Practice (T. Nevin - SOAP)

10:00 - 10:15 Educational and Scientific considerations of Veterinary Osteopathy in French University (C. Douart - ONIRIS)

10:15 - 10:30 Overview of the legislative and educational Status of Osteopathy in Animal Practice in Italy (P. Tozzi - CROMON)

10:30 - 11:00 BREAK

11:00 - 13:00 SECOND SESSION: OSTEOPATHY ON EXOTIC ANIMALS AND BIRDS - Chair: P. Selleri - Moderator: T. Nevin

11:00 - 11:05 Introduction (T. Nevin)

11:05 - 11:25 Lymphatic pump treatment protects against solid tumor development in the lung (L. Hodge)

11:25 - 11:45 Osteopathy and Exotics - Thinking outside of the box (T. Nevin)

11:45 - 12:05 Osteopathy and Birds - A Global Approach (T. Nevin)

12:05 - 12:25 Articulation: a safe and effective technique for all species (C. Short)

12:25 - 13:00 ROUND TABLE SESSION AND DISCUSSION

13:00 - 14:15 LUNCH BREAK & POSTER PRESENTATION

14:15 - 17:45 THIRD SESSION: OSTEOPATHY AND MANUAL THERAPY FOR DOGS AND CATS - Chair: S. Hani - Moderator: N. Hobson

14:15 - 14:20 Introduction (N. Hobson)

14:20 - 14:35 A therapeutic approach to polyradicular neuritis as the basis to a standard rehabilitation programme for neurological diseases in dogs: a retrospective study (E. Canestrelli)

14:35 - 14:50 Manual therapies on dogs and cats: Shiatsu (R. Pozzi)

14:50 - 15:05 Posture and osteopathic considerations in the Obedience training (M. Mannino)

15:05 - 15:25 The tissue-oriented approach in Osteopathy (S. Cayre)

15:25 - 15:45 Proposal of a measurement method of tissues response following osteopathic treatment (P. Chêne)

15:45 - 16:15 BREAK

16:15 - 16:35 A retrospective study of forelimb lameness in canines from an osteopathic viewpoint (N. Hobson)

16:35 - 16:55 Case Reports on OMT effectiveness (A. Accorsi / C. Lucci)

16:55 - 17:15 The effect of repeated lymphatic pump treatment on the lymphatic system (L. Hodge)

17:15 - 17:45 ROUND TABLE SESSION AND DISCUSSION

17:45 - 18:00 Furaha Presentation

18:00 Closing Session

18:00 - 20:00 Light Dinner

Saturday 29th of September 2012

09:00 - 12:20 FORTH SESSION: OSTEOPATHY AND EQUINES
Chair: L. Tosti Croce - Moderator: J. Brooks

09:00 - 09:05 Opening and Introduction (J. Brooks)

09:05 - 09:25 Rehabilitation techniques as integration to osteopathic treatment (S. Molle)

09:25 - 09:45 Most common osteopathic lesions of cervical column and front limb in show jumping horses (V. Rocchelli)

09:45 - 10:05 The voice: an instrument at the service of equine osteopathy (A. Jourcin)

10:05 - 10:25 The lymphatic system of the horse: aim and approach of an osteopathic treatment (N. Berthon)

10:25 - 10:45 Osteopathy: efficacy or placebo effect? Survey on horses taking part in national and international horse shows (E. Deforest)

10:45 - 11:05 The role of Osteopathy in the treatment of musculoskeletal dysfunction in animals (J. Brooks)

11:05 - 11:25 Thermography as an aid to monitoring osteopathic cases: results of osteopathic treatment of 54 horses (C. Colles)

11:25 - 11:55 BREAK

11:55 - 12:20 ROUND TABLE SESSION AND DISCUSSION

12:20 - 13:20 FIFTH SESSION: OSTEOPATHY AND WILD ANIMALS
Chair: C. Colles - Moderator: L. Christodoularis

12:20 - 12:25 Introduction (L. Christodoularis)

12:25 - 12:45 Using infra red thermal imaging to assess osteopathic treatment of 2 asian elephants (T. Nevin)

12:45 - 13:05 Osteopathic contribution in the well-being of raptors (L. Christodoularis)

13:05 - 13:20 ROUND TABLE SESSION AND DISCUSSION

13:20 - 13:30 Closing session

13:30 - 14:30 LUNCH BREAK & POSTER PRESENTATION

14:30 - 18:30 WORKSHOPS

HALL A

14:30 - 16:30 WORKSHOP A:

Principles and Methods of Neurological Physical Therapy (E. Canestrelli)

16:30 - 18:30 WORKSHOP B:

Osteopathic treatment of the axial skeleton and soft tissues of small animals (T. Nevin)

HALL B

14:30 - 16:30 WORKSHOP C:

Medullary traction force and spiral functional torsion (P. Chêne)

16:30 - 18:30 WORKSHOP D:

Shiatsu treatment of dog's back (R. Pozzi) AVAILABLE IN ITALIAN LANGUAGE ONLY

HALL C

14:30 - 16:30 WORKSHOP E:

Osteopathic treatment of birds and small exotics (L. Christodoularis)

16:30 - 18:30 WORKSHOP F:

Neuro-physiological aspects of Osteopathic care of small animals (J. Brooks)

HALL D

14:30 - 16:30 WORKSHOP G:

Visceral aspects to Osteopathic care of cats and dogs (N. Hobson)

16:30 - 18:30 WORKSHOP H:

The 'tissue tension based approach' to small domesticated animals (S. Cayre / G. Urdich)



Abstract

INTEGRATION OF VETERINARY AND OSTEOPATHIC MEDICINE IN ITALY AND INTERNATIONALLY



State of art on VetCAMs in Italy

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Starting from the premise that the Veterinary Homeopathy is legitimately included not only as an alternative therapy but also for new veterinary emergencies such as food safety, drug resistance, animal welfare and environmental impact, we assess the state of the art and the regulatory path in health professional. This consensus process in the light of consistent research projects in veterinary homeopathy in line with the regulatory principles for health legislation in force (Dc. No. 193/2006) and in respect of its epistemological principles of homeopathy. Two of the most significant areas of application of Non Conventional Medicines in Veterinary Medicine (CamsVet) regard the clinical activity and training for appropriate expertise. Yet today a are emerging greater extent on food safety, drug resistance, environmental impact and animal welfare, in line with the priorities of veterinary medicine. With regard to the veterinary profession's ethical issues, research, preferred areas of application (organic farming) and specific (drug surveillance and pharmacovigilance), require an equally appropriate consideration. The work done over the years by the EU Veterinary Medicine Unconventional (UMNCV) and experience gained allows to establish that popular cultural events have not significantly changed the status (not knowledge, but the status of regulatory, the right of access to research funds, etc.. etc.) of CamsVet, or

made significant achievements with regard to scientific evidence. What is necessary and unavoidable at present is that resources are available and finalized as part of concerted research, with the aim to establish a real and significant role of Homoeopathy in Veterinary Medicine. After working documents drafted and endorsed by veterinary institutions (FNOVI-Amnvi), as adjustments of the medical ethics veterinarian (specifically, Art. Vet 30 of the Code of Ethics, and documents the health advertising on MNC - FNOVI guidelines on training), the need has arisen to work with the Ministerial Establishment of the problems used in homeopathic veterinary in order to see CamsVet treated with the same dignity as fundamental issues of the profession. In fact, the CamsVet, and in particular the homeopathic remedy, are part of the most relevant and current veterinary emergencies, and in the principles of veterinary drug regulatory legislation (Legislative Decree 193/2006):

1. Food Safety
2. drug resistance
3. animal welfare
4. environmental impact

The homeopathic medicines are not a concern for chemical residues in food of animal origin in this way ensuring absolute safety for human health (zero residue - zero-day withdrawal periods) which may be referred to as preferential treatment in EC law for organic products (Document 391R2092, 399R1804 Document, EC Regulation 2092/91, EC Regulation 1804/99, EC Regulation 834/2007).

The society of Osteopaths in animal practice, a british associative model of Osteopathic synergy in animal practice

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AUTHOR'S AFFILIATIONS: General Osteopathic Council (GOsC), Society of Osteopaths in Animal Practice (SOAP) was set up in 2004 to support the growing interest in animal treatment within the osteopathic profession in the UK (1).

Its aims were to bring together the wealth of individual experience that already existed to deliver first rate lectures and CPD rated seminars and short courses.

OBJECTIVE: Objectives were to encourage evidence based research at both under and post graduate levels, the formation of university validated post graduate courses up to and including Masters Level, and the improvement in inter professional communication and sharing of collective knowledge. Soap is now associated with the only university validated, and GOsC recognised post graduate training schemes.

We have successfully seen 7 graduates of the MSc Animal Manipulation – Osteopathic Pathway, and are enrolling our first cohort for the

P.G. Cert Animal Osteopathy course in conjunction with the British College of Osteopathic Medicine (BCOM). This latter course comprises 3 modules each delivered at Masters Level. Soap is now associated with the only university validated, and GOsC recognised post graduate training schemes.

CONCLUSION: SOAP offers members access to research material, CPD events, post graduate courses, and inter professional communication. It liaises closely with all of the main UK osteopathic undergraduate teaching centres.

It represents osteopaths at veterinary congresses, and offers support for overseas colleagues through associate membership. Its' members are recognised and respected by some of the leading British veterinary associations (2).

REFERENCES:

- (1) Minutes from an extra ordinary meeting held at the General Osteopathic Council headquarters, Tower Bridge Road, London. (2004). Available from <http://www.osteopathy.org.uk>
- (2) Henson F. British Equine Veterinary Association (BEVA) Congress (2011), Liverpool, UK. Available from <http://www.beva.org.uk>



Educational and Scientific considerations of Veterinary osteopathy in French University : ONIRIS

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INTRODUCTION: Ten years ago a project was started to teach osteopathy to veterinarians in one of our four French veterinary schools. The project was difficult to start, and was based on the school of Nantes (ONIRIS), in the department of anatomy. It now takes the form of an “inter-school Diploma” (DIE), involving all four schools. The initial difficulty was due to the lack of recognition of osteopathy by the academics. However, things are now changing.

OBJECTIVES: To teach a global osteopathic approach to veterinarians, through both evidence-based knowledge and practical experience.

METHODS: The teaching is a three year part time course (a few days of lectures each month) following the end of the course in veterinary medicine. There are approximately 800 hours of lectures with 21 days of clinical training (1).

The teaching team consists of anatomists, veterinarians who practice osteopathy. The course provides formal lectures, tutorial classes on various animals, anatomical dissections, and practical training courses (2).

RESULTS: Very few students resign from the program; At the end of the studies three quarters of students practise osteopathy regularly and successfully; some make an exclusive practice of manual therapy. With regards to the contents of the courses, we have maintained all the ideas of osteopathic education (MRP, palpatory skills in their complexity, etc.), despite widespread and strong opposition by the academics to these topics. The teaching is not restricted to what has been scientifically proven. In fact, it seems to us fundamental not to restrict the understanding of osteopathy to what has currently been accepted in human medicine.

Instead, we try to broaden the concepts to include osteopathy as currently practiced, and to encompass how it may develop in the future. Research in osteopathy remains in its infancy as any requests for funding are still declined.

CONCLUSION: A complete osteopathic program has been introduced to veterinarian schools, although the integration of osteopathy and veterinary medicine is not yet accepted at an institutional level.

REFERENCES:

- [1] Collective. *Référentiel d'ostéopathie vétérinaire. Conseil d'orientation et de formation en ostéopathie vétérinaire.*
[2] Chêne Patrick, *What have we to teach in osteopathy ?* <http://www.osteop4pattes.net/spip.php?article972>

Overview of the legislative and educational status of Osteopathy in animal practice in Italy

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The Consultancy for Non-Regulated Professions, founded from the National Council of Economy and Labour (CNEL) in Italy, has acknowledged the professional identity of Osteopathy since 1999. In 2002, the WHO included Osteopathy in the CAMs, considering its active role in the maintenance of good health. Since then, through the release of various documents, the WHO prompted political actions amongst different national communities to actually regulate and integrate CAM's within the respective National Health Services. However, in Italy, Osteopathy remains to this day a non-recognized and a non-regulated profession yet (therefore not included in the NHS), with different bills on the matter being still in pending approval by the Italian parliament.

The present legislative void on this topic has left the osteopathic training and practice merely self-regulated by independent associations, unions and registries, that in line with European standards, attempt to 1) establish specific requirements for access to the profession 2) indicate a rigorous educational model for schools that want to be recognized and accredited 3) work for the recognition and protection of the profession.

The Piedmont Region has been the first in Italy to set rules for the monitoring of osteopathic practice in its territory. Following its example, other Italian regions such as Tuscany have been active in organizing, in concert with the Department of Regional Authori-

ties, the enactment of stringent state laws. However, the tendency has been to include Osteopathy in the common box of “bio-natural disciplines”, primarily targeting the maintenance of well-being, excluding any reference to health.

The National Framework Law (Unconventional Medicine and Practices AC 137 - Rapporteur Paolo Lucchese) projected that the osteopathic profession could be practiced independently in its primary form after a five-year university course.

Recently, the Chamber of Deputies, in its meeting of April 17, 2012, approved the unified text on the regulation of non-regulated professions, including Osteopathy. The proposed law includes 11 articles, with the attempt to regulate the profession according to EU standards. This marks a step forward on the path of recognition for Osteopathy still in progress...

Specifically, with regards to Veterinary Osteopathy, The National Council of the National Federation of the Associations of Veterinarians (FNOVI), states in art. 35 of its Code of Professional Conduct “The practice of unconventional medicine in the veterinary field is the sole responsibility of the veterinarian.

This is...a non-delegable responsibility.” (2011). However, the Federation of Veterinarians of Europe (FVE), a representative body for 200.000 veterinarians in 37 European Countries, “accepts the delegation of certain tasks/interventions to veterinary paraprofessional who are technically and legally competent and subject to varying levels of veterinary supervision appropriate to the specific task.



Such delegation can be encouraged in the interests of the client...” (FVE/08/doc/009). According to such European view, a new model on training and practice of Veterinary Osteopathy in Italy, in

conjunction with the Università degli Studi di Napoli Federico II, will be proposed and discussed.

Abstract

OSTEOPATHY ON EXOTIC ANIMALS AND BIRDS

Lymphatic pump treatment projects against solid tumor development in the lung

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INTRODUCTION: The most common cause of death for women worldwide age 35 to 50 is breast cancer (1). Side effects of cancer treatment include lymphedema, an excess of lymph fluid in interstitial space most commonly located in the arm. Treatments of lymphedema include physical therapy, compression bandages, and pneumatic pumps.

Currently it is unknown if therapies that enhance the lymphatic system have an effect on tumor growth and metastasis. Lymphatic pump treatments (LPT) are used clinically by osteopathic physicians to treat edema and infection (2). In animals, LPT increases lymph flow, leukocyte numbers and the release of inflammatory mediators into lymphatic circulation (3,4), which may enhance protection against infection and cancer.

OBJECTIVES: To determine if LPT would enhance anti-tumor immunity and reduce tumor formation in the lungs.

METHODS: F344 rats were injected intravenously with MADB106, a breast cancer model used in rats. Rats received no treatment (control), 4 min of light touch under anesthesia (sham), or 4 min of LPT under anesthesia, for 7 consecutive days. Eight days following tumor injection, lungs and spleens were measured for number of solid tumors and leukocyte numbers/activities.

To determine if leukocytes from the lungs of LPT-treated rats possess more anti-tumor activities compared to control and sham treated rats, lung leukocytes were isolated and their functions were measured in vitro. To determine if LPT promotes the entry of gastrointestinal derived T cells into the lungs, pulmonary T cells were measured for the gastrointestinal-specific tissue marker, CCR9.

RESULTS: LPT significantly ($P < 0.05$) reduced the number of solid tumors in the lungs. This was accompanied by a significant ($P < 0.05$) increase in the pulmonary concentration of B cells, CD4+ T cells, CD8+ T cells, NK cells, and macrophages. Of interest, pulmonary leukocytes from LPT-treated rats secreted more IL-2, IL-10 and IFN- γ in vitro, when compared to control and sham treatment.

Previously we demonstrated LPT mobilizes gastrointestinal-derived lymphocytes into lymphatic circulation; therefore, to determine if LPT enhanced the redistribution of gastrointestinal derived T cell into the lungs, we stained pulmonary T cells for the gastrointestinal-tissue specific marker CCR9. In support of our hypothesis, LPT increased the percentage of CCR9+ T cells in the lungs. Fi-

nally, LPT increased the number of pulmonary IFN-gamma producing NK cells in the lungs.

CONCLUSION: LPT increased the percentage CCR9+ T-cells in the lungs with MADB106 tumors; therefore, we propose LPT enhances the lymphatic redistribution of gastrointestinal derived T cells into the lungs in response to tumor.

Furthermore, LPT increased the percentage of IFN- γ producing NK cells within the lungs. IFN- γ inhibits tumor cells by increasing their immunogenicity, inhibiting their proliferation, and increasing their apoptosis; however, whether these LPT-mobilized NK cells have enhanced anti-tumor effects is still unknown.

Collectively, our data suggest LPT protects against the development of solid lung tumors by enhancing pulmonary immunity. This is likely mediated via the lymphatic redistribution of leukocytes; however the specific mechanism is still under our investigation.

This research was supported by National Institutes of Health AT004361 (LMH) and the American Osteopathic Association AOA 08-11-573 (LMH).

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- (1) Rockson. *Am J Med.* 2001;110:288–295, 2001.
- (2) Moseley et al. *Annals of Oncology* 18: 639–646, 2007
- (3) Schander et al. *Journal of Experimental Biology and Medicine* 2012; 237(1):58-63
- (4) Hodge et al. *Lymphatic Research and Biology* 2010; 8(2): 103-10



Osteopathy and exotics - thinking outside of the box

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INTRODUCTION: I first applied osteopathic principles to exotics 22 years ago. My initial patients were injured and orphaned British wildlife, but within a year I had added many non native species including elephant, rhino, and several primates housed in collections in the UK.

Several aspects of this type of work presented me with unique clinical problems. These included vague anatomical, physiological, and neurological knowledge, coupled with the potential for zoonosis issues as well as a radically different approach to hands on administration of osteopathic techniques.

OBJECTIVES: To produce a clinically replicable system for successfully applying osteopathic principles to exotics to aid normal loco-motor function, and improve the health and welfare of these patients. For the purpose of this paper I have concentrated on the European Hedgehog, and Herman's Tortoise.

METHODS: Create protocols for applying osteopathic treatment that avoided triggering species defence mechanisms. Maximise the limited anatomical access points to apply valid treatment,

resulting in improved loco-motor function. Ensuring that these techniques were easily replicable by other similarly experienced practitioners.

RESULTS: 10 European hedgehogs with a single hind limb amputation all responded positively to an average of 3 osteopathic treatments administered at weekly intervals. 3 Herman's tortoises with asymmetric gait patterns each received 4 osteopathic treatments at 2 weekly intervals. 2 responded well and all sign of symptoms had disappeared by the end of the trial. 1 had improved but there was still a residual asymmetry to the gait.

CONCLUSION: Osteopathic principles can be successfully applied to exotic species that offer limited access to osteopaths from a treatment perspective. By using certain modalities it is possible to attain results similar to those for a cat or dog (1)

REFERENCES:

(1) Lockwood K. (2010) An over view of all of the under graduate studies in the osteopathic care of animals. Society of Osteopaths in Animal Practice. Available from <http://www.uksoap.org.uk>

Osteopathy and birds – a global approach

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INTRODUCTION: For 20 years the author has applied osteopathic treatment to injured wild birds as well as domestic pets and livestock species. This paper will concentrate on the global treatment of injured raptors that were rehabilitated back to the wild. The injuries have been categorised, along with species, age, sex, and success/failure. All cases were seen by the author, and all received the same application of osteopathic principles to best suit their particular state, and recovery (1).

OBJECTIVES: To assess the efficacy of using osteopathic intervention to aid with the rehabilitation of wild raptors back to the wild.

METHODS: This is a retrospective study of data taken from 48 cases of UK raptors that were all suffering from injuries that precluded their likelihood of surviving unaided in the wild (2). All were first assessed by a veterinary surgeon, and cared for by hospital staff at 2 UK wildlife hospitals (3). Although there were several different species, all received the same basic osteopathic treatment approach.

RESULTS: Of 48 cases treated, following veterinary screening, 42 were successfully released back into the wild and were independently monitored for a minimum of 3 weeks post release. 2 were re-admitted and subsequently released following a longer period of pre release fitness improvement in flight aviaries. Patient rehabilitation times were an average of 18 days shorter compared to data collected from centres that relied on cage rest and pre-release flight aviary fitness regimes (4).

CONCLUSION: The results show that with good veterinary

screening osteopathy has a great deal to offer in speeding up rehabilitation times when compared to legacy data from centres not using this branch of medicine.

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(1) Nevin A. (1998) Osteopathy on Wild Birds. British Wildlife Rehabilitation Council, Autumn 1998 symposium proceedings. Available from <http://www.bwrc.org.uk>
(2) RSPCA Guidelines on euthanasia. Available from <http://www.rspca.org.uk>
(3) Lower Moss Wood Wildlife Hospital, School Lane, Ollerton, Cheshire, UK; Wierfield Wildlife Hospital, Rookery Lane, Lincoln, UK.
(4) British Wildlife Rehabilitation Council data base from UK wildlife hospitals. Available from <http://www.bwrc.org.uk>



Articulation: a safe and effective technique for all species

Short Claire D.O.

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BACKGROUND: Osteopathic treatment, particularly high velocity thrusts (HVTs), can be difficult to perform on non-equine/non-canine animals, particularly the smaller, or more aggressive ones. HVTs are potentially more dangerous for tiny vertebrae and can cause fear and aggression in creatures unused to being handled, thus posing a risk to both animal and osteopath. An alternative to HVT is articulation of the involved joint.

OBJECTIVES: To assess whether articulation of the cervical vertebrae in a variety of species is effective in decreasing pain and improving range of movement, whilst maintaining the safety of the patient and the osteopath.

METHODS: A selection of animals of various species were assessed and treated. The animals ranged from small birds to turkeys, sheep, alpacas and cattle. None of the animals had a history of being handled on a regular basis. All animals presented with cervical spine restrictions, and were given a visual analogue scale (VAS) score for pain.

It was acknowledged that a VAS score for animals is the observer's impression of the intensity of pain, not the animal's perceived intensity of pain [1]. Following a single treatment, animals were re-assessed to see whether there was an increase in range of movement and a decrease in pain score. Behavioural changes were observed throughout treatment, and levels of aggression recorded

with an adapted brief agitation rating scale[2].

RESULTS: All the animals treated showed an improvement in range of movement of the cervical spine and a decrease in pain score. Only one of the animals displayed aggressive behaviour during treatment. An improvement in joint mobility was also recorded in the article 'Sylvester the Rabbit Goes to the Osteopath' [3] in which a rabbit recovered well from a shoulder injury with only soft tissue and articular techniques.

CONCLUSION: Articulation is an effective form of treatment for a wide range of species. It is particularly useful for very small animals and animals unused to human contact for which HVTs may be inappropriate. It is also safe for both the patient and the osteopath.

RECOMMENDATIONS: The application of articulation techniques be considered highly effective and safe for improving joint mobility in animals of all species, particularly for use on small animals and animals with limited human contact. More research be carried out to investigate how animals unused to human contact respond to HVT's.

REFERENCES:

- [1] Viñuela-Fernández I et al., Comparison of subjective scoring systems used to evaluate equine laminitis. *The Veterinary Journal*, 188 (2): 171-177, 2011
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- [3] Short C, Sylvester the Rabbit Goes to the Osteopath. *Veterinary Nursing Journal*, 26 (7): 246-247, 2011

Abstract

OSTEOPATHY AND MANUAL THERAPY FOR DOGS AND CATS

A therapeutic approach to poliradicular neuritis, as the basis to a standard rehabilitation program for neurological diseases in dogs: a retrospective study

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BACKGROUND: The acute canine idiopathic poliradicular neuritis syndrome (ACIP), known as "coonhound paralysis" is a PNS pathology of dogs and cats, comparable to the human Guillain-Barré syndrome. ACIP is reported in dogs from North America as well as from other areas populated by coonhounds, but the incidence is very low (1). The aetiology of ACIP is still unknown, but autoimmune reactions subsequent to viral or bacterial infections are considered to be the most likely cause. The clinical evidences of ACIP start in the pelvic limbs with progressive weakness and ataxia. This progresses to affect thoracic limbs until tetraparesis or tetraplegia results from lower motor neuron involvement. Inflammation spreads through axons and myelin sheaths, reaching maximal intensity in the ventral roots. Sometimes it affects diaphragmatic and intercostal muscles, compromising breathing and requiring intensive care with assisted ventilation and

fluid therapy (2).

INTRODUCTION: A retrospective study has examined the 0,5 % of patients, seen in seven years, since July 2005 to January 2012, reported by the veterinary rehabilitation center CRV libertà e movimento in Rome. The ACIP patients were diagnosed by specialists using neurological exams, CT scans and MRI when possible. Laboratory tests were performed routinely, such as biochemical profile, urinalysis, and electrophoresis, to exclude tick diseases or hormonal problems. Cerebrospinal fluid analysis was also carried out.

Patients either received medical treatment, or undertook specific physiotherapy treatment, with medical consent and under medical supervision. Physiotherapy was carried out using a protocol commonly applied to neurological patients.

OBJECTIVES: Evaluation of the effectiveness of the standard rehabilitation protocol for neurological patients applied on subjects affected by ACIP (4).



METHODS: A retrospective study of three dogs was carried out. These were affected by ACIP, and underwent standard daily physiotherapy treatments; - massage therapy (20-30 min according to sizes), reflex stimulation (3 x 10 for each limb), active and passive postural exercises for 10 minutes, therapeutic devices such as laser therapy, magnetic therapy, electrical stimulation and UWTM from 6' (2³+2³+2³) to 20' (10³+10³).

They also received assisted therapeutic walks, until complete recovery was reached. Data from functional exams, was collected after every session, and analyzed to evaluate time and degree of recovery of the subjects. The data used included measurement of muscle circumference; ability to achieve and maintain sternal and standing positions; ability to maintain assisted and autonomous ambulation. Data was compared with that collected from a control group of dogs affected by ACIP that did not receive any physiotherapy treatment.

RESULTS: The 3 patients undergoing the standard physiotherapy protocol in the rehabilitation centre, integrated with a standar-

dized home management, reached almost full recovery within 6 to 9 weeks, depending on pre-existing physical condition and age.

CONCLUSION: The standard rehabilitation protocol used in this study led to excellent outcomes for degree and time of recovery in patients affected by ACIP, compared with the control group. Further studies are needed to check whether these results are reproducible in a larger population, and whether positive long-term outcomes can be achieved in other neurological conditions.

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Manual Therapies on Dog and Cat: Shiatsu

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INTRODUCTION: Shiatsu (in Japanese shi = fingers,atsu = pressure) originated in Japan at the beginning of 20th Century as a direct descendant of a more ancient technique called Anma, which was probably derived from Anfa, a Traditional Chinese Massage techniques (TCM) (1,2,3).

Tuina is a branch of TCM, which dates back to 200 B.C. ca. Shiatsu practice is based on the use of 3 factors: The Heart, to allow contact with the animal in order to help it; The Body, by learning specific manual techniques; The Mind, to understand the nature of any disharmonies and to promote re-balancing their energies. Shiatsu is not a massage technique; instead it is defined as treatment. Shiatsu is the ability to help through physical contact between the shiatsuca and the patient, in order to let the spirits meet (Shen).

Shiatsu is an energetic treatment based on static pressures, kept steadily on specific points, called 'tsubo' (corresponding to acupuncture's points). It is performed with different parts of the body, like the palm of the hand, thumbs and fingers, elbows, and knees. What distinguishes Shiatsu from other manipulative disciplines, is that the pressure is applied according following 4 basic rules:

degree of pressure; persistence; Perpendicularity; Depth.

METHODS: The purpose of my report is to provide some basic information about Shiatsu. The principles and various techniques will be briefly illustrated, concluding with an explanatory clinical case. Baloo, a 12 year old Dalmatian, with ataxia, and generalized spondylosis confirmed by x-ray.

CONCLUSION: Shiatsu can be used with humans, or animals. It can be used as a combined therapy with acupuncture to complete an energetic treatment, or can be associated with traditional massage to enhance its therapeutic effects. Shiatsu is recommended for conditions that need relaxation, stimulation of blood flow, mechanical mobilisation, and analgesia.

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Posture and consequences Osteopathic obedience practice

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The incidence of dogs with muscular and/or joint problems in sport practice is very high, especially in young, large animals. Although not realised originally, current veterinary opinion is that many conditions are in fact work related. We therefore began a more systematic and methodological approach to assessing and treating these conditions. In obedience training, as well as in almost every sporting activity, speed and agility are required, although stiffness and functional impairment often results. This is usually the result of repetitive strain patterns commonly seen in disciplines such as obedience training, where the animals weight and size, are unde-

restimated since they are puppies (1-2). It is therefore essential for a clinician to perform a proper differential diagnosis, formulate the right diagnosis, and pursue the most relevant form of therapy for each case. Clinical information such as breed predisposition to develop certain conditions (hip/elbow dysplasia, spine injuries, respiratory disease) must be taken into account, together with the functional syndromes seen during different sports activities, where management of the condition falls within osteopathic competence (3-4). Obedience training is a sport that assesses the dog's qualities and ability to respond to commands, and give an outstanding performance assessed on:- speed, accuracy, enthusiasm, precision, attention to the instructor. Skill in identifying obstacles and objects is also taken into account. The dog must have a psychophysical



high because perfection of movement, harmony and balance is expected (5). The dog is trained to perform unnatural movements from an early age. Specific training conditions, stimulates and strengthens specific body functions, to the detriment of others. Following an empirical osteopathic model, we were able to detect the systematic recurrence of signs and symptoms, related to obedience training, that were causing functional and postural problems with the dog's health and growth. We identified most commonly stiff neck muscles, causing difficulties with swallowing, resulting in the dogs preferring soft food, or adopting an odd posture during swallowing. These signs may simulate a disease of the digestive system.

The aim of this study is to highlight the most frequent clinical findings that occur in obedience training, although the diagnostic classification is controversial at present. Further research is needed

in this field, involving an integrated veterinary and osteopathic assessment. Development of veterinary medicine in the concept of functionality is needed to encourage understanding of the osteopathic "theories of structure and functional interrelationship".

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The tissue-oriented approach in osteopathy

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Tissue-oriented osteopathy is a simple, efficient and practical approach to animal treatment. Modelled from Pierre Tricot's work, a French contemporary osteopath, this approach leads to an efficient methodology [1,2].

The objective of this presentation is to provide an outline of this modality of treatment. Its first aim is to determine exactly what is the goal that needs to be achieved. Then, a sequence-structured modus operandi proposed by Pierre Tricot to animals allows us to structure examinations, and organise consultations.

Good communication between the patient and the therapist is crucial and relies on six defined parameters. Three of these parameters depend on the therapist himself and can be defined as present-

ce, attention and intention. The others are the physical features of the osteopathic lesion itself: tension, density and movement. Each of these parameters will be presented and explained. Sometimes difficulties may occur while working on a dysfunction, but simple solutions are highlighted by this method.

The most common problem is the lost of one of the parameters by the practitioner, or too strong an intensity of a parameter like density, making treatment impracticable. By this modus operandi, a tissue-oriented approach of osteopathy in animals appears to be practicable, and it should be included amongst the therapeutic tools of each osteopath.

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A Measure proposed to objectivize the effect of Osteopathy

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INTRODUCTION: INTRODUCTION: The recently developed notions of Medullary Traction Force [1], of Physiological Torsion [2] and of tension of specific tissue [3] help the understanding of osteopathic practice. These important ideas allow us to understand the physical functioning of the body in a better way, e.g. cellular tension suggests that a cell in dysfunction is stiff while a cell functioning correctly is flexible.

OBJECTIVE: To propose a simple measurement [4] to estimate a dog's volume, and assess the overall flexibility of its tissues; This was then compared to measurements after osteopathic treatment.

MATERIAL: A tape measure, 2.5 meters long was used for the measurement, which was made by two operators. One operator held the zero of the measure at the origin of the dog's tail at the perineum. The second operator passed the measure, in a helical manner, under the left iliac bone, across the back (over T13), then continuing under the right shoulder, finally making a circle around

the neck from the left side, to stop at the angle of the jaw on the left side. Measurements were taken from the zero point at the tail to the angle of the jaw on the left side before and after osteopathic treatment.

RESULTS: More than 200 cases were measured pre and post osteopathic treatment. These showed significant differences (ranging from 2 to 20 cms [2-10 %] of the length measured). For 90% of the cases this was a significant change (the difference must be greater than 1.5 cm). Normally, an osteopathic intervention decreases this length, as it causes softening of tissues not only at the treated points of dysfunction, but also throughout the body. In some cases we had a marked increase in length, always coupled with a Medullary Traction Force [1].

CONCLUSION: The tissue changes in flexibility are very fast and measurable after a few minutes, although their exact significance still requires further investigation.

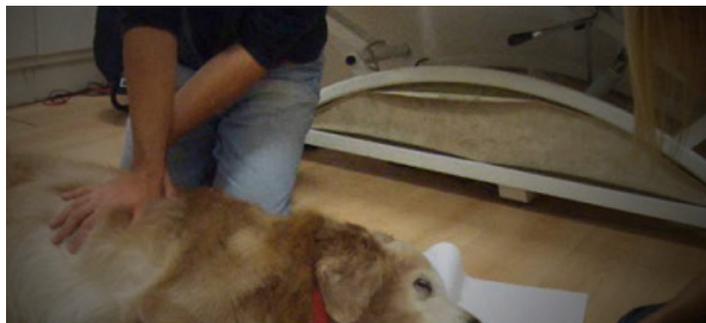
The minimum functional limit of the weight, together with the maximum flexibility achieved through mechanical facilitated transduction allow us to interpret the progress of chronic cases, and



aids formulating a prognosis. This measurement of the physical variation of global flexibility offers a measurement to aid our understanding of the response to osteopathic treatments.

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A retrospective study of forelimb lameness in canines from an Osteopathic viewpoint

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INTRODUCTION: This is a retrospective study over a 15 year period of forelimb lameness in canines that have received Osteopathic treatment at Hyde Park Veterinary Centre, 61 Connaught Street, London, W2 2AE. **OBJECTIVE:** The objective of the study is to document consistent findings and patterns of functional musculoskeletal change in these cases, which will illustrate how Osteopathy can contribute to their treatment and management.

METHODS: The methodology used was to compile a data sheet of more than 400 dogs seen and to extrapolate all the cases of forelimb lameness. There were over 73 presentations. This number was further analysed into breed category, primary symptomatic joint, Veterinary test results (where relevant) and Osteopathic findings.

RESULTS: The results are in three categories, all dependent on the pathology and owner compliance. 28 acute cases received between 1-3 treatments at weekly intervals: owners reporting a good resolution of symptoms. 29 chronic cases received on average 4-6 treatments over 2-6 months.

These showed some improved ease of mobility but still had a variable degree of altered gait. These cases require on-going management, both Veterinary and Osteopathic. 16 episodic/intermittent cases, which resolved after 1-3 treatments at weekly intervals but re-presented months or years later with the same or similar symptoms.

CONCLUSION: The conclusion drawn from the study is that whatever the injury or area of pathology causing the forelimb lameness, there are certain compensatory neuromusculoskeletal holding patterns which need to be resolved to encourage a normalising of function and reduction in pain.

Case-report: impact of OMT on biochemical mediators of inflammation

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Inflammatory process is characterized by a well specified self-body reaction, mainly based on the activity of immune system, in response to infective (bacteria, virus, fungi, parasites), chemical and physical agents or necrotic/tumor cells (1,2). Previous studies have shown the efficacy of osteopathic manipulative treatment (OMT), especially lymphatic pump techniques, in enhancing the lymphatic flow in the thoracic duct and increasing the concentration of inflammatory mediators in the lymphatic system. [3,4]. **OBJECTIVE:** The aim of this study is to test the immediate effect of OMT on inflammatory biomarkers in a single case of dog. The aim of this study is to verify the immediate effect of OMT on inflammation through the study of inflammatory biomarkers. [5,6].

METHODS: One dog, 7 years-old, Labrador breed, with hind legs non-erosive polyarthritis due to tick-borne disease, was evaluated and treated osteopathically. The indices of inflammation were examined immediately before and after the osteopathic treatment.

Primary outcome was the pre-post change in PCR values, whilst secondary endpoint was the pre-post haemochrome values variation. The osteopathic procedures was applied once combining ba-

lanced ligamentous tension techniques and myofascial releasing.

RESULTS: After the only OMT, the primary outcome has changed as follows: PCR (delta T1-T0: -0.35 mg / dl, 18.9%). The following secondary outcome values resulted changed: albumin (delta T1-T0: 0.10 g / dl, 2.8%), platelets counts (delta T1-T0 : 30, 19.1%), haematocrit (delta T1-T0: 4%, 10%).

CONCLUSION: This experimental study confirms the hypothesis that OMT has a immediate anti-inflammatory effect in dogs. These results provides baseline data for further studies to better explore the mechanism of action of OMT, its effect during inflammatory processes and its future applications in the field of veterinary medicine.

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Osteopathic manipulative treatment for knock knee: a case finding

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INTRODUCTION: Skeletal growth disease is very common in all breeds, especially large and giant ones. The main clinical consequences are irreversible joint damages that lead to osteoarthritis. The speed of joint impairment is directly related to the length and type of motor activity of animal. Early diagnosis by the veterinary physician is therefore essential to prevent and reduce the development of osteoarthritis. [1]. Treatment of orthopedic diseases is mainly based on physical therapies and rehabilitation [6]. During the last decade complementary medicines have found a room for improving veterinary services [2,3,4], however data on the effectiveness of osteopathic manipulative treatment (OMT) are lack and limited to Schander et al. study on the effects of osteopathic lymphatic pump techniques in dogs [5]. This case report documents the effects of OMT in improving muscle-skeletal parameters in a Great Dane puppy affected by knock knee.

METHODS: A male puppy, purebred harlequin Great Dane, was visited in a veterinary clinic at the age of 4 months.

The veterinary physician, using physical and X-ray examination, diagnosed a genu valgum deformity of the right knee. Associated morbidities were: coxo-femurs dysplasia, ligamentous laxity of both coxo-femoral joints and shortening of femurs heads. Therapies proposed were: drugs for joints protection, controlled diet to reduce dog's weight and osteopathic treatment. The physician also considers euthanasia as an hypothesis in case of severe further disability of the animal. After the first osteopathic structural evaluation, the osteopath decides to perform a cycle of 5 treat-

ments, 1 OMT per week. The osteopathic treatment used was on a black-box basis, therefore need-based treatment, using myofascial release and balanced ligamentous tension techniques

RESULTS: After the 5 OMT the dog was reevaluated from the veterinary physician. The latter documented a significant reduction of the genu valgus condition of the right limb. Functionally the dog walking was diagnosed fully recovered.

CONCLUSION: Osteopathic manipulative treatment can play a crucial role in rehabilitative treatment of musculoskeletal disorders in dog, purebred harlequin Great Dane, with knock knee. Further studies based on a stronger design and appropriate samples are needed to demonstrate the effectiveness of osteopathic treatment.

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The effect of repeated Lymphatic pump treatment on the Lymphatic System

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INTRODUCTION: Lymph stasis can result in edema and accumulation of particulate matter, exudates, toxins, and bacteria.

This can lead to inflammation, impaired immune cell trafficking, tissue hypoxia, tissue fibrosis, and a variety of diseases.

In earlier studies 1-3, we demonstrated that osteopathic lymphatic pump treatments (LPT) significantly increased lymph flow and the concentration of leukocytes in the lymph of both rats and dogs.

We also found that LPT significantly increased the flux of cytokines, chemokines and reactive oxygen and nitrogen species in lymph.

OBJECTIVE: The purpose of this study was to determine if repeated applications of LPT would continue to enhance lymph flow, leukocytes and inflammatory mediators in thoracic duct lymph.

METHODS: All experiments were approved by the Institutional Animal Care and Use Committee (IACUC) at the University of North Texas Health Science Center. Under anesthesia, the thoracic ducts of 6 dogs were cannulated, lymph flow was measured by timed collection and lymph samples was collected at 1) 30 min baseline (pre-LPT), 2) during 4 min of LPT, 3) continuously for 2 hours following LPT (resting), 4) during 4 min of a second application of LPT, and 5) for 30 min following the second application of LPT (resting). Leukocytes in samples of thoracic duct lymph were enumerated using the Hemavet 950 (Drew Scientific). Leukocyte flux in the thoracic duct was computed from the product of lymph flow and leukocyte concentration. The lymphatic con-



centrations of IL-4, IL-6, IL-8, IL-10, IL-15, MCP-1, TNF-alpha, INF-gamma, KC (CXCL1), MCP-1, and nitric oxide were also measured using commercially available kits.

RESULTS: Consistent with our previous studies, the baseline leukocyte flux in thoracic duct lymph was $4 \pm 1.5 \times 10^6$ cells/min and LPT significantly increased their concentration to $14 \pm 50 \times 10^6$ cells/min. During the 2-hour resting period between LPT treatments, leukocyte numbers were similar to baseline ($2.8 \pm 0.66 \times 10^6$ cells/min). A second application of LPT similarly increased thoracic duct leukocyte flux to $137 \pm 17 \times 10^6$ cells/min. During the 30 min following the second LPT, the thoracic duct leukocyte flux was $5.8 \pm 1.7 \times 10^6$ cells/min. In addition, LPT significantly increased the lymph flux of IL-4, IL-6, IL-8, IL-10, IL-15, MCP-1,

TNF-alpha, INF-gamma, KC (CXCL1), MCP-1, and nitric oxide during both treatments.

CONCLUSION: These results indicate that repeated application of LPT transiently enhances lymph flow, leukocyte and the flux of inflammatory mediators in thoracic duct lymph. The information gained from this study provides a rationale for the clinical use of LPT to enhance immunity and release inflammatory mediators into lymph circulation.

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Abstract

OSTEOPATHY AND EQUINES



Rehabilitation techniques as an integration of Osteopathic Treatment *Molle Sybille, DVM, CERT, CKTI*

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INTRODUCTION: During the rehabilitation process, the primary goal is the regeneration of the injured structure in the shortest time and with the lowest risk of re-injury. In order to reach these objectives it is of primary importance to bring back and maintain the body in a balanced condition to allow a quick and functional healing of the tissues both in quantity and quality and to correct and re-educate the altered function to prevent re-injury.

The aim of this review, without getting into the details of osteopathic treatment specific for each rehabilitation condition, is to consider the general situation where the integration of the osteopathic treatment with some rehabilitation techniques is able to improve animal's healing; In particular, reference can be made to Core Activation, proprioceptive facilitation techniques and Kinesio Taping®.

OBJECTIVES: Most of the conditions where rapid and qualitative rehabilitation is needed are of orthopaedic origin. Poor performance also needs to be included.

In cases of orthopaedic disease, pain and lameness are the principal symptoms leading to a modification of proprioception and a reorganization of locomotion. This results from changes in movement in order to avoid pain, either by limiting movement of the joint, or by compensating for it through using other muscles or a combination of the two[1].

The goal of rehabilitation, apart from promoting the appropriate healing of injured tissues, is to re-educate the movement; in order to achieve this, the subject needs to have correct joint motion. Hence the importance of osteopathic treatment. The objective of integration between osteopathy and other rehabilitation techniques is to obtain the best possible result in terms of neuromotor and postural re-education, movement rehabilitation and prevention of re-injury.

METHODS:

Core Activation

Core Activation refers to a system of exercises designed to mo-

bilize the intervertebral joints and strengthen the muscles of the neck, back, abdomen and pelvis that control the horse's posture and balance [2]. Strengthening the core stabilizing muscles enhances athletic performance and reduces injuries.

Proprioceptive facilitation techniques

Also defined as neuromuscular proprioceptive facilitation, enclose all the techniques used to initiate a determined proprioceptive response. Particularly used in the horse are: 1. stretching to prevent injuries to the distal limb[1,3]; 2. tactile stimulation of the coronet and pastern to improve propulsive muscle groups and increase the flight arc of the foot[3,4]; 3. Theraband® or the newly derived method Equiband™ to improve the use of some muscle groups and enhance the Core Activation exercises effect [3]; 4. Kinesio Taping® is also a facilitation technique described below.

The Kinesio Taping® method

This method was created in 1979 by Dr Kenzo Kase, a Japanese chiropractor and acupuncturist, who wanted something that could maintain the effect of his manual therapies. The application of the Kinesio Tex Tape is used to enhance the body's natural healing processes while allowing support and stability to muscles and joints without restricting the body's range of motion.

CONCLUSION: The integration of the rehabilitation techniques described with osteopathic treatment allows the enhancement of its efficacy, the lengthening of its effect and the improvement of the overall quality of the rehabilitation process[5].

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Most common osteopathic lesions of cervical column and front limb in show jumping horses

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INTRODUCTION: Normally when a horse is healthy, nobody asks the vet to check how it is. Usually the vet only examines patients with acute conditions [1]. Nowadays we have sophisticated and precise diagnostic instruments with which we can detect tiny lesion. In the same way the treatments we can use are continually developing, be it bio-technologies or the continuous pharmaceutical evolution. If we have obvious acute and clearly detectable lesions, e.g. of a tendon, ligament or bone, it is very difficult to identify, treat and solve concurrent chronic problems e.g. in a joint. Frequently problems are the result of irregular joint usage due to anatomical abnormality. During routine equine examinations, orthopaedic problems of the front limb are common, more than those of the hind legs. The front limb indeed carries 60% of the horses weight, carries much of the rider's weight, and indirectly absorbs the rider hand actions through the powerful neck muscles. Several factors interact in this fine equilibrium: the body-type, the sport activity, the saddle and its position, the bit and other harness used, the ground, the shoes... The osteopath has the difficult role of evaluating how the system is functioning, cooperating with the allopathic vet during the diagnosis, and trying to arrange a good treatment of the structural lesion and its functional effects whilst it is receiving veterinary treatment [2,3].

OBJECTIVES: This paper tries to explain the most common osteopathic problems seen on a daily basis, involving the cervical area and front limb; It discusses possible relationships with distal orthopaedic lesions, and tries to offer solutions.

METHODS: The paper reports on five typical clinic cases, with

radiographic and other examinations, and the six month follow up report. These cases represent the most common osteopathic problems we find on a daily basis with show jumping horses. It also offers a comparison with the common therapeutic protocols used.

RESULTS: The most common osteopathic lesions involves the occipito-atlantal joint, C2-C3, and C7-T1, which is often associated with a functional imbalance of the shoulder. Daily correct training, and a regular osteopathic check could be useful in managing this sport horse injury. On the other hand, when we have a clear orthopaedic problem, e.g. a lameness, osteopathy may find a complementary diagnostic and therapeutic role with other forms of therapies.

CONCLUSION: The variability of injuries in horses represents the big difficulty. All the professionals that play a role around horses need a common direction or at least a common language. To work on sport horses requires a long range vision of the problem and of the subject's management.

This is an essential step to a correct medical, ethical and professional approach. Osteopathic treatment plays an essential role in the sport horse's medical management, complementing the allopathic approach and helping rider and horse in their daily exercise, directly treating affected joints, and helping to establish a good rehabilitation exercise.

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The Voice: an instrument at the service of Equine Osteopathy

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INTRODUCTION: There is a part of osteopathy that can be observed with scientific methods; there is another part – not less important – not measurable, bound to the very behaviour of the osteopath. I would like to invite you to following me into this section through an important element in equine osteopathy: how to use your voice.

OBJECTIVES: The purpose will be working on the therapist's behaviour to create a "complicity" with the horse. It is necessary to create a common space, freely shared.

METHODS: This intimate exchange may be obtained in many ways: the osteopath's look, the horse's sense of smell...but today, the chosen material of my intervention will be the voice (1). The final result of this behavioural approach is to be accepted by the horse as its protector, the leader; this way the complicity is very intense without aggressiveness or violence, and you may obtain the trust of very excited horses (2).

CONCLUSION: My own experience led me to working in this direction as I realized it is much more reliable, and it offers another advantage: it leaves the horse a good memory, a memory that will allow future good quality work (3). My desire is not to

preach my method; it is to share this therapeutic first step. I remind you that, alas, this kind of work may not be verified in tangible ways.

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The lymphatic system of the horse

aim and approach of an Osteopathic treatment

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The lymphatic system concerns both lymph drainage and control of its constituents. This system ensures, in close conjunction with the bone marrow, thymus, spleen and lymphoid formations of the digestive system, the body's immune defence [1]. Knowledge of drainage areas of lymph nodes and their afferent vessels as well as the ways of lymph is of great importance. This knowledge can predict the path taken by the spread of infection and it helps prevention or treatment. Conversely, it allows for the finding of a lesion on a lymph node, to trace the diseased organ.

Approach of investigation: Whatever the process of investigation, the scheme that links inflammation to the lymphatic system remains the same: an inflammatory reaction leads to upstream downstream lymphatic, and whatever happens, a disorder of the lymphatic system is the result of failure of the immune system. Natural drainage of the body is done via the lymphatic circulation but assistance provided by the practitioner can complete this drainage, which is sometimes inadequate or faulty.

Why the interest in connective tissues [2, 3]?

Connective tissue consists of cells and a variable contingent of fibers and ground substance. Some of the cells present in connective tissue cells correspond to free or transient reactive capacity. It indicates lesser or greater importance depending on the state of the tissue reaction (via inflammation). When a tissue is traumatized, it was due to a local reaction by activation of mast cells that release their mediators, increases cell permeability and chemotactic factors are released. Vessels dilate and blood flow decreases, allowing the exudation of extracellular liquid, resulting in observable edema.

Lymph and homeostasis [4, 5, 6]: because of the link between blood and lymph (with capillaries and interstitial fluids), a lymphatic treatment helps blood circulation, blood composition (with leucocytes for example), osmotic pressure, water balance... Helping fluid balance helps homeostasis and in consequence body health.

Lymph and osteoarthritis [7]: Because of arteries, veins, and lymphatics present in the synovial membrane, lymph drainage helps to decrease inflammatory and painful periods.

Lymph and visceral treatment: In link with an osteopathic visceral treatment, a lymphatic drainage helps to decrease inflammation, toxins, from organs. A lymphatic drainage finalizes the visceral treatment.

Edema [7]: An edema could interfere in an osteopathic treatment, local circulation (accumulation of toxins, decrease of O₂, nutrients), nerves activity: nerves could be compressed and their function could be changed (motor, sensitive and neurovegetative fibers)... To summarize, a local lymphatic drainage helps: the access to the zone, reducing paralysis (via motor fibers), reducing dysesthesia (via sensitive fibers), reducing vessels dysfunctions (via neurovegetative fibers), increased healing...

Example of indications and contraindications of

Manual Lymphatic Drainage [8]: Indications: Indications: edema, traumatic injuries, chronic inflammations, digestive system diseases, connective tissue diseases (arthritis, arthrosis), dermatological and immunological problems, some rashes, congestion, improving wound healing and absorption of the hematoma, myositis, myoglobinuria, burn, pre/postoperative... Absolute contraindications: acute infections, suspected malignancies (treatment with a prescription). Relative contraindications (the demand on some organs during drainage could be too great): cardiac / hepatic / respiratory / thyroïdal / renal failure, asthma, synovial effusion, gestation, nursing.

Conclusion: Here are a few e.g.s of the aims of MLD in action: to help mares, stallions, geldings, elderly horses... in each step of their lives. Osteopathic lymphatic drainage remains necessary for the treatment to be holistic and durable. "We strike at the source of life and death when we go to the lymphatics", A.T.Still [9].

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Osteopathy. Efficacy or placebo effect?

Survey on horses taking part in national and international horseshows

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INTRODUCTION: Our survey aims to test the efficacy and/or the placebo effect of osteopathic techniques (direct thrust techniques) on horses. The study started in 1987 on a sample of 5896 horses selected from those taking part in national and international horseshows.

Selection allowed work on a homogeneous sample as these competition rules and strategies are uniform: same obstacles, same number, same heights, and the same horsemen. These horses need an efficient lumbar column to jump, in order to allow correct hind limb propulsion, and to maintain the airborne phase prior to landing. In case of acute lumbar dysfunction (group dysfunction: L4 L5 L6) these horses often refuse to jump, or jump with a rotation of the pelvis over the obstacle (1,2,3).

OBJECTIVES: To Check the effectiveness of osteopathy (direct Thrust technique) immediately after treatment, after a period of time, and to compare this with placebo treatment.

METHODS: The selected horses were 8/10 years old. They were lame in the hind legs with pain and dysfunction in L5 L6. To assess response to treatment, they initially underwent a “Five jump test” over 1m40 jumps. Three groups were formed. G1(n= 1800) was a control group, receiving no treatment, one half had the usual rider, the other half a different rider; G2: (n=2048); group with usual rider; G3 (n= 2048): horse with different rider.

After “treatment” all groups underwent a “Ten jump control test

over 1m40”. G1: The control group received no treatment, but had 6 days of rest, then underwent the test. Again half had the habitual horseman, the other half had a different rider; G2 horses were all treated by the same Osteopath and ridden by the horse’s habitual rider; G3 horses were treated by different Osteopaths and had different riders. They had 2 treatment sessions with 3 day OMT intervals (L5 L6 group direct Thrust), followed by 2 days of rest; six days later they underwent the 10 jump test.

RESULTS: The percentage of G1 group horses to pass the test strongly diminishes after the fourth jump (from 96,88% to 84,44%). In comparison groups G2 and G3 showed a change of (100% dropping to 93,79% and from 100% dropping to 93,84% respectively). We concluded that as the horses of G1 group were not treated, pain recurred as they returned to jumping. It was interesting that G2 group remains the one with a highest percentage up to the ninth jump. That may be the result of the presence of the usual horseman (technical effect).

CONCLUSION: The results table is significant. It confirms that the method and strategy of treatment used were valid, and eliminates the suggestion of a placebo effect.

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The role of Osteopathy in the treatment of musculoskeletal dysfunction in animals

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INTRODUCTION: Physical treatments for musculoskeletal disorders have existed for many centuries and have developed into formal systems of training such as osteopathy, chiropractic and physiotherapy. Criticisms of these disciplines have in the past been on the basis of lack of research, and the contribution of the placebo effect in patient perceived outcomes. In the human field, the effectiveness of these treatments has been established with the results of large, multicentre trials such as BEAM, (1) and ROMANS (2). The placebo explanation is less sustainable when applied to the treatment of animals and there is a growing body of research exploring the role of osteopathy in this field.

OBJECTIVES: To review the characteristics of animals and nature of complaints presenting to an osteopathic clinic. To identify neurophysiological markers to aid diagnosis, prognosis and outcome of treatment.

METHODS: Retrospective studies were examined to establish the characteristics of animals and the nature of complaints presenting to an osteopathic clinic in a veterinary environment. The neurophysiological basis of musculoskeletal dysfunction was

explored and quantitative markers identified to aid in diagnosis, prognosis and effectiveness of treatment.

RESULTS: A retrospective study in dogs identified a wide range of ages and breeds presenting to an osteopathic clinic (3). This was reflected in a study of 127 horses presenting principally with back pain, non specific and shifting lameness and back stiffness which were unable to perform the work expected of them (4). These problems had been present for over two years in 30% and over six months in 71% of cases. A follow up at least 12 months after the last osteopathic treatment showed that 95 (75%) had maintained improvement and were working at the expected level or above according to owners and veterinary surgeons report. A recurring theme with all these cases was that although the owners reported problems, and static and active examination showed dysfunction, there was often no identifiable pathology on standard veterinary screening. These problems could be explained using the osteopathic model of “somatic dysfunction”, which, to use computer analogy, it is more an aberration in the function of the neurological software in response to a painful stimulus, rather than a hardware problem presenting as tissue pathology (5). The next step was to consider physiological markers that could identify somatic dysfunction and quantify changes resulting from osteopathic treatment. One response to injury and pain is muscle hypertonia



(6) and this may be expressed as shortened stride length (7). A pilot study showed that horses presenting to the clinic had a significantly reduced stride length ($p < 0.001$) in trot compared with controls (8). After osteopathic treatment, there was a significant increase ($p < 0.05$) in stride length in the clinical cases. Another physiological marker is the change in sympathetic nervous system activity in response to a painful stimulus (9). This may be manifested by alterations in surface temperature, which can be detected by infra-red thermography.

There is general agreement on normal patterns of cutaneous heat distribution (10). Long-term dysfunction was found to result in cooling of surface temperatures which resolved following osteopathic treatment (11). A study of 46 horses looked at thermal patterns in the gluteal regions.

These were found to be significantly cooler ($p < 0.02$) than expected in cases presenting to the osteopathic clinic. These regions showed a significant increase in temperature following treatment (12).

CONCLUSION: On the basis of owner reports, osteopathy appears to be effective in treating animals with musculoskeletal problems where no pathological cause can be identified. A number of physiological markers may be used as diagnostic indicators and outcome measures, to show the potential for osteopathy in a complementary role alongside veterinary science.

Thermography as an aid to monitoring osteopathic cases

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INTRODUCTION: The Avonvale Veterinary Practice has used thermography as an aid to lameness diagnosis for over 20 years. It is particularly suitable for assessing whether cases of back pain in horses are suitable for osteopathic treatment, and for monitoring their progress during treatment. In addition, we have limited experience of its use in elephants, camel, giraffe, and other "exotic" species.

OBJECTIVES: This paper gives information on the protocol for acquiring diagnostic thermal images of patients with possible spinal problems. It also gives information on the relevance of abnormal findings on thermal images, and distinguishing between artefacts and clinically relevant abnormalities.

METHODS: The paper gives information on how to obtain satisfactory images, based on adaptation of techniques from human medicine, and our experience of their use in approximately 4,000 equine cases with spinal dysfunction (1,2). A detailed analysis of the results from the first 200 equine cases seen in 2001 has been made, and the interpretation of the thermographic images has been compared statistically to the clinical and osteopathic findings.

RESULTS: Back pain in the horse is a commonly diagnosed condition in veterinary practice, but the precise causes are frequently unknown, no bony or soft tissue pathology being detectable in approximately 80% of cases (3). The use of thermography allows a clinical diagnosis of somatic dysfunction to be confirmed objectively. Thermographic examinations of horse should be made in an ambient temperature of 20° C. If the ambient temperature is below 15° C, circulation may be reduced to the lower limb, to maintain core temperature. The limbs below the knee and hock will then appear cold. Above 25° C, the horse cannot lose heat fast

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enough, and the thermographs become universally warm and even in temperature. When examining backs we use a window of 6°C, setting the upper limit to the eye temperature, whilst keeping the muscles over the shoulder within the temperature range. Areas of the back and neck where temperature is lowered in excess of 1.5°C are considered clinically significant. Temperatures raised in excess of 1.5°C may also be significant, but require careful assessment.

Coat length, and hence insulation, varies between animals, and between times of the year. The coat does not always moult evenly over the whole body, and coloured horses may have different densities of hairs in different coloured areas, and may moult different colours at different times. Aberrant results are also seen in damp or sweaty horses. The practice of clipping parts of the coat can be overcome, unless the horse has a clipper rash! Problems also arise if horses have been stood in the sun, or where rugs have rubbed, or have been removed only shortly before thermographs are made.

Elephants are best examined at a higher ambient temperature (30°C), the ears appearing cold below this temperature. We have inadequate experience to comment on other species, but assume animals from hotter parts of the world will be adapted to higher temperatures and should accordingly be imaged in higher ambient temperatures.

CONCLUSION: Thermal imaging has given us a useful objective method to diagnose somatic dysfunction in horses and elephants, and to assess their response to osteopathic treatment. Thermography is best suited to assessment of animals with a relatively large body mass, and an even or absent hair coat.

It is therefore well suited to animals such as elephant zebra and giraffe. It is not so easy to use in camels where coat is often lost in irregular "chunks", or lions where areas of the body are hidden by the mane. Small animals with relatively thick or uneven coats such as many dogs, do not lend themselves to this diagnostic technique.



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Results of osteopathic treatment of 54 horses

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INTRODUCTION: This paper reports the results of a retrospective analysis of a series of 54 horses seen as third opinions. All horses had failed to respond to treatment by their own veterinary surgeon, and to an acknowledged equine veterinary referral centres before referral to this centre. All the selected cases were considered to show signs of somatic dysfunction, with reduced spinal movement.

OBJECTIVES: To assess the value of osteopathy in the treatment of a selected group of lame horses which had previously failed to respond to conventional veterinary treatment.

METHODS: Fifty four horses showing signs of neck or back dysfunction (1) were included this study. All had previously been referred by their veterinary surgeons to one of 12 referral centres, all employing a recognised veterinary specialist in equine orthopaedics. In all cases the horses failed to respond to conventional treatment.

The cases were subsequently referred to the authors. Full referral notes and history were available from the referring vets and referral centres. Case histories were re-assessed in detail, and all cases underwent a further veterinary lameness examination, using standard veterinary techniques where appropriate to eliminate tissue pathology. Further radiographs were obtained of the neck and occasionally back (2). The diagnosis of somatic dysfunction was made clinically, and confirmed using infrared thermography (3).

Once the diagnosis of somatic dysfunction had been made, the horses were examined by a registered osteopath, who confirmed the diagnosis, and undertook osteopathic treatment (4). The response to treatment was followed up initially at monthly intervals throughout treatment and initial return to work. Subsequently a written survey was made at least one year and up to 9 years after the final treatment.

RESULTS: After diagnosis 1 case opted not to undergo treatment, and two cases responded well to treatment but were then retired from ridden work, so these three cases have been excluded from follow up information. Six-12 weeks after the end of treatment, 36 cases (70.6% of the remaining 51 cases) returned to work (in 10 cases (19.6%) they were performing better than ever before).

Nine horses (17.6%) responded to treatment, but could only work at a lower level than previously (one worked for 3 years, and four for 2 years, but all required ongoing manipulative therapy). One horse worked intermittently for two years before being destroyed with laminitis. Six horses (11.8%) failed to respond adequately to treatment – three of these although improved could not be ridden, and were humanely destroyed.

Three did not finish treatment, and the outcome of treatment is not known, but for the purposes of this paper we have assumed they were not able to work. 12 months after the end of treatment, we were unable to obtain satisfactory long term follow up information in 19 cases. 10 cases showed enhanced short term performance short term, and two were sold a year la-

ter. The remaining eight have continued to work for at least one year, and up to 4 years after treatment. 7 horses returned to previous levels of performance, one competed at the Olympics and international competitions for 7 years, before retiring from top level competition. Of the remaining 6, two were treated as foals, and are still unbroken, and two have started normal work, but have not yet completed a year since the end of treatment. If the cases lost to follow up are excluded, this means that 53.1% of cases treated have maintained normal work for at least 12 months. 28.1% have returned to work at a lower level than previously, and 18.8% have shown an unsatisfactory long term response.

CONCLUSION: with careful case selection, osteopathy can be a useful treatment for chronic lameness in horses. The collaboration between veterinary and osteopathic practitioners plays a vital roll in the successful selection and treatment of cases.

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Abstract

OSTEOPATHY AND WILD ANIMALS



Using infra red thermal imaging to assess osteopathic treatment of 2 Asian Elephants

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INTRODUCTION: 2 Asian elephants with known musculo-skeletal problems were each subjected to a lengthy programme of osteopathic treatment.

Prior to each treatment the elephants had infra red thermal images (IRTI) taken, under strict controls (1), to record their body surface temperatures.

This technique has been used in human and equine medicine for several decades to assess sympathetic nervous (SNS) output within the central nervous system (CNS) (2).

OBJECTIVES: The objectives of this study were to provide solid evidence that osteopathic treatment can create lasting changes to the overall functioning of the musculo-skeletal system of elephants.

METHODS: Each elephant was treated fully conscious in a full contact environment, having first been conditioned to squat, and lay on each side. Small amounts of food were offered during osteopathic treatment to further reinforce the positive nature to the experience. Treatment and IRTI were undertaken at 4 weekly intervals over a 21 month continuous period.

RESULTS: Both elephants showed progressive improvements in overall SNS output, and from osteopathic observation and palpatory findings over the trial period (3)

CONCLUSION: Osteopathy and IRTI have their parts to play in the overall care of captive and wild elephant management/ welfare.

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Osteopathic contribution in the well-being of raptors

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INTRODUCTION: An Osteopathic perspective of optimal health is related to welfare, a state of well being. Broom [1] defines welfare as the state of an individual as regards its attempts to cope with the environment and implies that control over the environment is extremely important for welfare reasons.

Wild birds of prey learn from very young vital skills that optimize their vision, fitness, flying and hunting techniques. Factors that impede these skills, would limit greatly their ability for optimal movement and survival. The majority of wild birds rescued are injured (collisions, shots), only 10% are actually ill [2]. Traumas are factors that can limit greatly the incongruity of the musculoskeletal system with long-term disabilities.

Post-traumatic arthritis likely results from irreversible cartilage dama-

ge sustained at the time of injury and chronic cartilage overloading resulting from articular incongruity and instability [3]. Osteopathy could help the rehabilitation of birds by reducing specific long term affects of traumas, that can result in arthritic changes.

OBJECTIVE: To describe how Osteopathy can contribute in raptor rehabilitation and wellbeing.

METHODS: Provide an approach of how Osteopathy can relieve strain that can contribute to long-term disabilities.

RESULTS: In raptor rehabilitation accurate diagnosis is essential to ensure injuries can be treated correctly with the most favourable outcome. After veterinary attention, wildlife carers often recondition birds to fly in long enclosures until they are fit enough for release.



One of the major criteria that should be met is that the bird's illness or injury must be resolved completely, and pose no sign of long-term physical threats (such as arthritis, a growing cataract, etc) [4]. In this stage osteopathic examination could reveal existing somatic dysfunctions from the traumatic process.

Palpatory characteristics include sensitivity to measured palpation, tissue texture changes, asymmetry and restricted motion [5]. Somatic dysfunction according to Van Burskirk [6] 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 the abnormal position [7].

Given that solidification relates to structural changes, prolonged guarding position could lead to arthritic changes. Osteopathic techniques can be used in raptors, to reduce somatic dysfunctions, that in the long run may lead in such detrimental changes.

CONCLUSIONS: The model of Van Burskirk needs further investigation but it is commonly observed, in the osteopathic profession, how pain causes protective contractures and if prolonged structural changes can follow.

Though it is extremely challenging to study how animals perceive pain, it may have similar affects as in humans. Removal of myofascial somatic dysfunction has been shown to be extremely effective in reducing and eliminating persistent LBP[8] in humans.

Further research must be done, on how much benefit would, the removal of somatic dysfunctions have in raptor rehabilitation.

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