Academy of PHYSICAL MEDICINE

Draft Summary

Treating the Elite

With David Vaux

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David Vaux

- Background (before osteopathy) in the emergency services.
- Has an MSc in paediatric osteopathy.
- Has a particular interest in the nervous system and its development.
- Has worked at national level with rugby players, rowers and with the English Youth Orchestra.
- Author of a recent article in *Osteopathy Today* on Focal Dystonia.

Musician's Dystonia

- Dystonia is described generally as:
  - Uncontrollable and sometimes painful muscle spasms caused by incorrect signals from the brain.
  - A neurological movement disorder. Faulty signals from the brain cause muscles to spasm and pull on the body incorrectly.
  - This forces the body into twisting, repetitive movements or abnormal postures.
  - Sometimes the symptoms are accompanied by dystonic tremor.
- Affects around 2% of all musicians.
- Manifests as:
  - Lack of fine control (e.g. string musician cannot exercise precise finger control).
  - Wind musician might suffer a reflex movement of cervical spine, making it impossible to bring the mouthpiece to the lips.
  - The combination of movements becomes dis-coordinated.
- Possibly due to:
  - An (unhelpful) adaptation in the sensory cortex, causing the "map" of the affected area (hand/lips...) to become blurred
  - Stress/sympathetic arousal (good evidence suggests that the descending pathways, which modulate pain, are adversely affected by stress). Stress is particularly acute in elite musicians.

- Can cause secondary problems, such as muscle shortening, but the main problem is in the brain. Often gives rise to depression
- Possibly affected by excessive practice, or concurrent stress or illness- hence the need for a holistic approach.
- Focal dystonia was a career-ending condition
- Current options include:
  - Botox, to paralyse the dysfunctional muscles.
  - Medication, but there are inevitably side effects.
  - Physical therapies.
  - Psychotherapy/talking therapies.
- Often our response will include a talking therapy aspect, albeit unwittingly.
- In terms of pre-emption, the ENYO now incorporate stretching, warming up/down, and staff are being trained to recognise signs of emotional fatigue/anxiety.

Case History: "Mike" - Approach Taken

- Need to determine requirement for education and/or sensory approach
- Conventional osteopathic approach concurrent with these
- An evident psychological component – possibly arising subsequent to dystonia. Nature of problem had never been explained. Mike had given up hope of playing again.
- Also important for practitioner to learn the language of the patient's professional world
- Began with a simple sensory diet – simple movements to increase the neural "chatter".
- Tried to identify why the abnormal neural circuit was firing
  - Check myotomes/dermatomes
  - Track it back to somato-sensory origins
- Increase the neural chatter, without triggering the abnormal response (including pain)- may then be able to de-facilitate the neural pathway.
- Needed to turn the dystonic from colour to B&W, then to off – calm everything down
- Need to work with patient on a level he understands.
- Build up levels of complexity – using movements, which represent final movement.
  - Brushing teeth, while focusing on time of life when he could play (visualisation).
  - Combined motor pathways.
  - Needs thorough understanding of mechanics and neurology.
  - Can then be applied to complex cases.

Case History: "Sue" – Approach Taken

- Elite golfer suffering from dystonia.
- Use of water-based movements: straightforward with simple flexion. Experimental to get movement without triggering the response that was found on-land. This included a mimic of a golf swing.
- Transition between non-weight-bearing back to dry land was steady. Continued experiment to test Sue, without reaching the trigger point for pain that had previously been seen before treatment.
- Pain was still present but was much more manageable.
- Placebo effect is open to discussion. However, approach still brings effect.
- Dual-approach to treatment: complimentary services such as counselling and psychotherapy useful.
  - Structural therapy improves the function but these treatments can help 'fix'.
- Sue is now back playing. It remains to be seen whether she will return to the top level.

- Future treatment may be needed to combat regression.

- Work both mimics and varies from that of Eyal Lederman.
- Core stability (whilst 'dismissed' by Eyal): Not to be ignored but broken-down functional movements focused on goal can be more useful (e.g. to aid standing-up, it is less useful to practise sit-ups on a swiss-ball)
  - Training over the years has come full circle. Originally, functional training was important -> later, replaced by hi-tech equipment -> and now, returned to functional training.
  - Passive treatment can be one-dimensional, but engagement to movement leads to further gains.
  - When returning to movements, which cause pain, the steady transition back means that the confidence of the patient (the biggest risk is losing this) is not affected.

  - Approach is less applicable to a case like frozen shoulder as we know there is a neurological component. Visualisation of the arm's movement from an early stage could reduce length of time until full function is recovered.
  - Background of strengthening and conditioning from emergency services allows David to enter the grey area between those working in clinic and those who work in sport.
  - Balance exercises are an example of 'pre-hab': even the elderly have the plasticity to make use of these exercises to reduce risk of falling.
  - Take time to review case history (e.g. blood-pressure issues)
  - Breaking down of movement and perfecting the different levels.
  - The approach can be applied to all age groups. However, plasticity is still present in all ages.
    - Certain patients expect the practitioner or society to completely aid them. Patients should be more pro-active and take 'advice' on outside clinic.

  - With immobilised athletes,

Has had success with children with dyslexia and dyspraxia

- Use of sensory tricking, such as K-tape, can be used.
  - Easy to use. Functional, waterproof. Raises dermatomal awareness.
  - Can act as an 'emotional crutch' to establish confidence.
- Fine control of movement can lead to control when the movement is speeded up- an idea witnessed in a range of martial arts.

<u>Barriers into Elite Sport for Osteopaths</u>

- Jobs often advertised to Physiotherapists and Sports Therapists.
- The language between osteopaths and physiotherapists can be a stopping point in sport as the industries tends to understand physiotherapeutic terms. When this barrier is broken, there are a number of crossovers.
- An osteopath should have a place in a multi-disciplinary team pitch side. Learned a lot from physiotherapists in such a team during England Touch Rugby.
- The important thing is to gain a mutual trust in each other's treatments.
- A 'Level System' like the one used by physiotherapists may help gain the understanding from those in sport to aid osteopaths in gaining a foothold in the industry.
- The iO are ultimately aiming for a Royal Chartership which would entail a recognition of certain expertise within the industry: specialist cranial osteopaths etc.?

To develop David's approach

- Reading and returning to undergraduate notes. Medical journals and recommended books: 'The Talent Code', Daniel Coyle and 'The Brain that Changes Itself', Norman Doinge (works in neuro-plasticity). These are all good starting points.