The Complex Patient - An Integrated Approach

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Mr. Gerry Gajadharsingh D.O. qualified from the British School of Osteopathy in 1987 receiving the Finals Prize for osteopathic technique.

He has taught osteopathic technique at the British School of Osteopathy (BSO and the European School of Osteopathy (ESO). Over a 27 year career he has lectured to osteopaths, physiotherapists, medical doctors, physical therapists, nutritionists, naturopaths and other therapists around the world and was a Privy Council appointee to the 1st General Osteopathic Council (UK).

He is one of two certified Metabolic Balance® teachers in the UK.

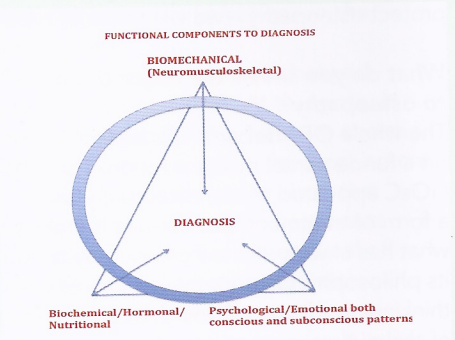
Gerry is the founder of The Health Equation, an integrated health clinic in central London where he has a dual role as Diagnostic Consultant- Complementary Medicine and Osteopath. His recently published enhanced iBook The Health Equation- A Way of Life, explains his integrated approach to medicine and includes 10HD videos demonstrating the preparation of recipes that follow the principles of Metabolic Balance®.

Osteopathy means different things to different people. To me osteopathy is simply an holistic philosophy of healthcare, which is patient centred and which seeks to explore the relationship between structure (anatomy) and function (physiology) in the human organism (mainly, although there are osteopaths who apply this philosophy to animals very successfully). Osteopathy is sometimes classified as "complementary therapy" a misnomer, as this title fails to recognize the importance of the diagnostic/evaluation process, which of course must help to direct "the correct application of the therapy" which the clinician then provides to the patient, taking into account their expectations, wishes and understanding of their problem and often their own belief systems.

Sometimes patients do have overt pathology, which may be responsible for their presenting symptoms (but remember even asymptomatic patients can also have significant pathology) where a competent medical history, clinical examination, imaging and lab tests (blood etc.) can give a "definitive medical diagnosis". These diagnostic labels are sometimes helpful to both patients and clinicians, however it doesn't give the whole story. Why has that patient developed those particular symptoms at that particular time? In my experience, and more often than not, a more comprehensive evaluation of the patient's problem, in particular the chronology of the development of the symptoms and a thorough appreciation of the impact of the change in function through different body systems is often much more helpful, leading to better patient outcomes.

Essentially the functional component of diagnosis tends to fall into three different categories.

1. Biomechanical/neuro musculoskeletal
2. Biochemical/nutritional/hormonal
3. Psychological/psychosocial factors/ behavioural factors including both conscious and subconscious patterns.



It is well documented that many patients with functional problems (sometimes even with recognized pathology) will get better (30% to 60% depending on the research you read) no matter who the clinician is or what their discipline is, the "placebo" effect. In medicine, 'placebo' used to be a dirty word, but more enlightened clinicians and researchers are realising that it may be possible to harness the best of what placebo has to offer and make it better, "placebo plus".

I have had the privilege to work with an amazing clinician Dr Brian Roet, MBBS. Brian qualified as a GP, then became a consultant anaesthetist, specialising in chronic pain management. After several years of giving patients the usual cocktail of drugs and injections, he decided that he wanted a better understanding of the mechanisms behind pain and decided to train as a hypnotherapist/ psychotherapist, something that he has practiced during the past 35 years. He often uses a very useful phrase

"Everything is always about something else"

Whilst it is usual that patients nearly always have a presenting symptom (although some asymptomatic patients are now presenting to clinicians in order to be more pro-active about their health), in my clinic patients present with multiple symptoms. This is because I primarily deal with complex patient problems with co-morbidity involving many different body systems, more often or not there is another story, with many patients' symptoms being interrelated. There is an important skill, to uncovering the whole story, it's called listening.

In 2013 new patients to The Health Equation, London were asked to complete an anonymous survey, some interesting results are highlighted below:

- 58% of patients said they had received an unclear or wrong diagnosis from their previous clinician (both orthodox and Complementary clinicians).
- 60% of patients had multiple symptoms
- 81% of patients paid their fees to The Health Equation themselves, i.e. they were self funding.
- 96.6% of patients rated the care they received from The Health Equation as being either excellent or very good.

Listening is a skill that often does not come easy to many people, but it's a skill worth learning especially for clinicians who are interested in improving their patient outcomes. All of my new patients (many who are referred by GPs and consultants) have an initial 60-minute diagnostic consultation. Invariably minimal treatment takes place during the first consultation. Whilst this may be strange to some clinicians my patients understand that they're coming in for a diagnostic consultation. I cannot emphasise how useful this ultimately proves to be, often leading to a much more structured and successful treatment intervention, rather than the usual 'let's try 4 -6 sessions and see how we get on'!

Osteopaths in the UK are in quite a privileged (but also responsible) position, in that they are often primary care clinicians. The passing of the Osteopaths Act 1993 has made us mainstream (almost). This requires them to have a working knowledge of pathology as well as functional medicine, know what they are competent to manage and also to refer when it is beyond their competence. Osteopaths also need to know how different systems interact together, in my opinion, not just focusing on the neuromuscular system. In theory this can work well, as long as other parts of the healthcare system and other clinicians are also doing their job. It's my experience (backed up by my patient survey) that unfortunately, this is sometimes not the case.

Modern imaging techniques, such as MRI, can be incredibly useful as part of the process of diagnosis, whilst initially being quite expensive with patients reluctant to undergo this sort of imaging, the costs have come down massively over the years and it's now quite possible to obtain a one region MRI for £250-£300 in London. However as with all diagnostic tests, they should be used with a clear rationale to help aid the diagnosis, not used just because you don't know what's wrong with the patient. It's important not only to reflect on the report from the consultant radiologist but also to actually view the images; radiologists (who are only human) can also sometimes miss things.

It is sometimes not straightforward to determine the region that actually needs to be imaged.

I had a very distressing case last year were a patient (mid 50's) presented to me with acute low back/hip pain, which developed whilst playing golf. The patient had limited funds, and also could not get an urgent appointment with his GP.

Because of his severe pain, history and clinical examination, I wrote a comprehensive report to an NHS walk-in centre, suggesting imaging of his pelvis and a series of blood tests. My suggestions were completely ignored by the GP; the patient was told they had mechanical back pain.

I then organised a private referral to a pain consultant who organised imaging of the lumbar spine who also thought the patient had a back problem. The results of the lumbar spine MRI were entirely normal. By this time I was challenging my own diagnostic skills but my gut feeling made me persuade the patient to have a private MRI of his pelvis, which revealed probable metastasis. I referred the patient back into the NHS, it took another three months for the patient to see an NHS consultant.

The patient sadly died two months later, the diagnosis was lung cancer with metastatic spread.

It's also quite common for patients to have had some blood tests organised by their GP's. Invariably patients have no idea which parameters have actually been tested, with many being told they are all "normal".

Interpretation of blood tests is fascinating, but remember that doctors are generally looking for overt pathology (assuming they've tested the right parameters, this can be very helpful), however there is often a "functional interpretation", which increasingly some clinicians are realising can be very helpful in patient management. A good example would be iron deficiency anaemia a common cause of fatigue. In this

case haematology would reveal, low haemoglobin, low haematocrit (percentage of red cells in the serum), low red blood cell count and low mean cell volume (the size of the red blood cell). This would usually be associated with low levels of ferritin (iron storage), ferritin is the gold standard for iron status, but is also increased in acute inflammation.

It is important to determine the cause of the iron deficiency anaemia, which may be pathological or functional or dietary. The usual medical intervention is prescription of ferrous sulphate or ferrous gluconate. Sometimes this intervention is not tolerated well by the patient, usually because of gastric upset (iron is highly irritating to the gut). If one were to go a step further and realise that both magnesium and vitamin C, are required for iron absorption, it may be more important to correct these important mineral and vitamin levels in order to enhance iron absorption. Magnesium can be tested by blood (in the form of red-cell magnesium), and some researchers suggest that approximately 50% of UK women are deficient in magnesium. By the way, the stuff you would have learnt in clinical methods as an undergraduate student may not be that helpful, for example koilonychia will only occur with medium to long-term iron deficiency anaemia. Tachycardia may be present, as a compensatory reaction, as may an increased breathing rate.

Functional nutritional/hormonal testing, using saliva, blood, stool and urine can also be really helpful, again there are several labs in the UK offering these sorts of services. A very useful test is the comprehensive adrenal stress index. This salivary assay measures cortisol, DHEA and secretory IgA. Whilst blood tests are useful for most things, cortisol has a normal diurnal variation; so four salivary samples are necessary in a 24-hour period, to measure this normal variation. Cortisol is one of the body's main stress hormones (it's also our natural anti-inflammatory and of course used pharmacologically in the form of prednisolone, synthetic cortisol, in many inflammatory conditions). In an acute stress response it's normal for cortisol to be elevated (be aware that this can also occur in some pathological conditions of the adrenal glands).

The problem with modern life is that we are faced with multiple stressors, over prolonged periods of time, which can sometimes adversely affect the adrenals ability to produce cortisol, the so-called adrenal fatigue situation. Be aware that endocrinologists often take great issue with this term. They will often use a Synacthen test, giving the patient a dose of ACTH (adrenocorticotropic hormone) and then measuring, via blood tests, the ability of the adrenals to produce cortisol. If normal this leads them to conclude correctly that there cannot be primary adrenal insufficiency, but the problem is more likely to be upstream, in the HPA (hypothalamicpituitary adrenal axis). The Hypothalamus is surrounded by the Limbic system of the brain (the emotional brain), stress (emotional disturbance) can often lead to HPA dysfunction, think about all those autoimmune conditions.

DHEA is often termed a pre-hormone, helping to manufacture downstream hormones such as Oestrogen. For example in postmenopausal women, Oestrogen will primarily come from adipose tissue and DHEA. Secretory IgA is a gut peptide, which can be adversely affected by stress.

Support of adrenal function by diet, nutritional supplements, stress management, breathing re-education can be really helpful in many conditions. What about your manual techniques? Cranio-sacral to up-regulate parasympathetics, improvement in thoracic/rib mechanics to down regulate sympathetics, C3/4/5 to improve diaphragm function, direct work to the diaphragm especially to help exhalation (which up-regulates parasympathetics), techniques to Iliopsoas, visceral work to the kidneys/adrenals, improvement in thoraco-lumbar function, the lists goes on! Just remember your osteopathic principles.

I've always been fascinated by the autonomic nervous system and I believe a lot of our manual osteopath interventions are influencing this critically important part of the patient's neuro/immune system. We know that on average most of us use 10% of our brain on a conscious level, that means 90% of our brain is working subconsciously, that's a big number. So often in modern life there is a shift to sympathetic up regulation, as a consequence of our response to stress, targeting heart, lungs, muscles and liver. The parasympathetic nervous system (or relaxation nervous system), targets digestive and hormonal reproductive function. So for many of our patients, they have their autonomics skewed towards sympathetic up-regulation.

We can now measure this. An incredibly useful bit of technology is Capnography and heart rate variability (HRV) monitoring. This is a noninvasive investigation, which measures ETCO2 (end tidal CO2), breathing rate, pulse and heart rate variability.

One of our primary metabolic fuels is of course oxygen (O2), which is the reason why we breathe. However delivery of O2 on a cellular level is dependent on our ability to retain CO2. 70% of the patients I examine are found to have breathing pattern disorder (BPD). This can be biomechanical, psychological, behavioural, compensation to metabolic problems and sometimes a combination of all of these things. Heart rate variability (HRV) or

Breathing Heart Wave (BHW) measures the difference in the pulse when we breathe in, compared to when we breathe out. Breathing in causes an increase in our pulse (sympathetic) and breathing out causes a decrease (parasympathetic). The difference between these two measurements, the variability, is an excellent measurement of autonomic nervous system function. It varies from zero (not good) to about 40 (excellent autonomic balance). It does decrease with age; my average middle-aged office worker is about 5!

If you wish to find out more you can view a video on the Breathing Page of my website www.thehealthequation.co.uk

You can also download my enhanced iBook from iTunes, which contains 30,000 words of text and 10HD videos.

The Health Equation-A Way of Life

So much of the pain that our patients present to us with, as osteopaths, is mediated by the muscular and fascial systems. The question is what drives this. Historically we have focused so much on improving mechanics and neuromuscular function (and of course this continues to be very important), perhaps much of this muscular and fascial tonicity is provoked by autonomic imbalance. Improving the breathing behaviour of patients and teaching techniques such as meditation and mindfulness, can dramatically improve their clinical problems. Have you noticed that if you use a CV4 (cranio-sacral technique) successfully on patients, their breathing pattern changes? Wouldn't it be good to maintain that change by teaching the patient improved breathing behaviour?

We must also try to understand a bit more about our patient's lifestyle, a big part of which are their habits of eating, drinking caffeine, alcohol, general hydration, drug use (pharmacological or otherwise), exercise and stress management strategies and of course their own paradigms of health.

Another important metabolic fuel is glucose. All carbohydrates, fruit, vegetables and starch are essentially absorbed into the body as glucose. The problem with modern life, especially over the past 20 to 30 years, is that we have had a massive increase in the amount of carbohydrates we consume. One could argue, as a consequence of inappropriate medical advice to reduce fats in our diet! Eating too frequently (and by that I mean more than three times a day, especially the snacking/grazing that's endemic in the Western world) and consuming high glycaemic load carbohydrates are playing havoc with our physiology. Glucose dysregulation causes major problems both with our physical body and our emotional state. Many patients also consume inadequate dietary protein.

If I take two, sometimes related conditions, depression and hypothyroidism. Modern antidepressants tend to be SSRI's, essentially to regulate serotonin (our happy brain hormone, which happens to be a protein), the substrate of serotonin is tryptophan (an important protein). Levothyroxine, given to people suffering from hypothyroidism, is a synthetic product mimicking T4 (Thyroxine), another peptide hormone (protein). It is probably not a coincidence that if you can improve these conditions by chemically manipulating with pharmacology, that you can also do it by changing a patient's diet (in conjunction with other treatment modalities).

Let's have a look at a real patient case history:

Patient A is female and is in her mid-40s, she is unmarried with one child. She has a high stress job as a company director and previously has been very sports orientated and a ballet dancer.

She complains of intermittent severe pain affecting the right hip, right SIJ with referral to the right lower extremity occasionally the right calf, often causing her to limp with pain.

Her symptoms started after the birth of her daughter, she says it was very traumatic and had a 48-hour labour, had a terrible epidural and the child developed an infection and was in ICU for a while.

She has had a lot of "manual therapy", with ongoing physiotherapy and has seen a "cranial osteopath" with minimal impact. She is currently taking naproxen and occasional codeine, also taking the natural anti-inflammatory turmeric.

She is a habitual grazer, eating too frequently, she says she needs to eat every two to three hours otherwise she is very hungry, suggestive of glucose dysregulation.

In 2009 after limping for four months, she saw an orthopaedic surgeon who diagnosed degenerative changes of the right hip. The patient was very upset with this diagnosis and didn't follow up on her suggestions.

Whilst exercise had helped in the past to reduce some of her symptoms now they seem to be aggravating things.

In summer 2013 with mostly right-sided SI J pain, she started training in the gym twice a day, she says her personal trainer may have pushed too hard and she overdid things. She then began to once again develop episodic right-sided hip pain.

She saw a sports consultant who organised an MRI of the pelvis and diagnosed a severely damaged right hip and referred her to see another orthopaedic consultant. She had an intra-articular injection to the right hip in January 2014, which definitely

helped however her symptoms have got worse again. She is lined up for hip replacement in October 2014 but came to see me for another opinion.

Examination

I had a look at her breathing behaviour: ETCO2 varies between 26- 32 mmHg (optimum is greater than 35) breathing rate varies between 14 and 20 cycles per minute (optimum is between six and eight cycles), she has a very high pulse averaging 100bpm, O2 saturation is normal at 99%.Heart rate variability averaged 16.

When I asked her (with eyes closed) to think back to the onset of symptoms in relation to giving birth to a daughter she suddenly cried and was very surprised by this release of emotion, with her ETCO2, dropping, breathing rate increasing, heart rate increasing and heart rate reliability degreasing, suggestive of autonomic dysregulation.

There were, of course, a number of relevant mechanical factors, including increased lumbar lordosis, probably secondary to her ballet career, decreased range of movement of the right hip especially in medial rotation, with both a muscular and mechanical block to motion, shortening of her Iliopsoas muscles bilaterally, reactivity and trigger points within her right hip flexors especially Iliopsoas, decreased function of the right SIJ, upper rib cage breathing, poor use of a diaphragm especially into exhalation, poor function of her mid-thorax and rib cage, localised kyphosis probably in compensation to her extended lumbar lordosis, tightness through her right quadriceps (esp. Rectus Femoris), gluteus medius and piriformis especially on the right. Decreased function of her mid lumbar facets, no neurological deficit. Tension in her iliocaecal value.

Capnometry Results
Green Bar Chart shows average ETCO2. Purple Bar Chart shows average breathing rate. Red Bar Chart shows average pulse. Pink Chart shows average HRV.

Evaluation

Early-onset O/A changes to the right hip, predisposed by postural/ mechanical factors as above, precipitated by the traumatic birth of her daughter, maintained by chronic anxiety/over breathing pattern, glucose dysregulation caused by over regular eating pattern and

consumption of high glycaemic load carbohydrates predisposed to increased inflammation.

I saw the patient on five occasions treating her using a variety of osteopathic manual interventions, including cranio-sacral, fascial, visceral, soft tissue articular and specific HVT techniques. Combined with breathing re-education (which she felt made a significant impact) and dietary support with view to improved glucose regulation. We changed her to the natural anti-inflammatory to Celedrin (my favourite natural anti-inflammatory).

She is now in much better place, emotionally and physically, although it is possible she will need an orthopaedic procedure on the right hip in the future.

For those clinicians wishing to learn more about this integrated approach to medicine they may wish to know that in September 2015, in conjunction with Munch Naturheilkunde, based in Munich, Germany, we will be running an extraordinary seminar on the Caribbean island of Tobago, in the West Indies.

The provisional dates are **Monday 31st August 2015 - Friday 4th September 2015**

The Complex Patient - An Integrated Approach

We have a provisional programme of lectures and workshops, which are open to all clinicians from different backgrounds not just osteopaths, and presented by:

Mr. Gerry Gajadharsingh DO UK
Mr. Michael Munch Germany
Prof Laurie Hartman DO PhD UK
Dr Brian Roet MBBS UK & Australia
The course will be in English with German translation

To register your interest and to receive the course information please email:

info@thehealthequation.co.uk UK and international cliniciansor

info@muench-naturheilkunde.de German speaking clinicians (German, Austrian and Swiss clinicians)