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Heart Shock, another word for trauma, is a term first coined by Dr John Shen and refers to 'the *systematic instability* resulting from trauma and its sequela'. The term is used not because it only affects the heart organ, but rather because the heart, recognised as the supreme authority, 'the Emperor' within Chinese medical thinking, is the organ that holds and symbolises the sovereign nature of the person.

For Chinese medicine practitioners '[t]here is no difference between the heart which moves towards authenticity, while remaining more and more rooted, and the heart which spreads the blood into the limbs and pushes them to move spontaneously and appropriately. This visible continuity between the body (which has form) and the spirit (which is formless) is assured in and by the heart'2. From the perspective of Eastern medicine 'all these aspects of the heart inter-communicate, cross-refer and inter-relate. The psychological, physiological, intellectual, and spiritual interact'2.

Before we get to Shock though, what do we really know of the heart?

We know it in common parlance across cultures and language mostly through the power of symbolism, and in more mechanistic or linear ways. We use the concept of *the heart* to refer to things as varied as heartburn and cardiac problems, to be in love or to be in despair, to be exsanguinating ourselves for a cause or to feel there is no kindness and warmth, to be at the centre of things or to be uninterested and unmoved. When we know something by it, wear it on our sleeve, or have had it assaulted or temporarily stopped from fright or grief, it is the deep wellspring of our own experience that we are speaking of.

And even as we speak of the heart, we cannot help but also speak and consider the blood. Indeed, they go together as a bonded pair, (heart and blood, blood and qi), and like all successful love stories when we talk of one, we are also talking of and considering the other.

But the heart, what do we know of the heart?

From the classics, we are told that the heart contains and is the residence of the *Shen*, what we might call the spirit. The Shen is that aspect of our existence that captures the light of 'heaven', that internal sun of insight, clarity, and divinity which manifests as the best and highest in and of ourselves. It can be best expressed as coherence. The Taoist perspective reminds us that the heart as the most important organ of the body both expresses the shape of this energetic force (the Shen) and implements its frequencies and designs, together with the jing and the blood, to create the curriculum of our lives³. As sovereign ruler, the heart embodies the sacred dynamics of enriching the blood with this spirit, and then circulating it, through the networks of the vessels.

With modernity, we have simultaneously had our deeper visions clipped with the rejection of the metaphorical and poetic language of the classics by science and its exactness and been given by that same method and framework the capacity to test and validate the ancient wisdom.

With the embrace of Newtonian science, we have been led in medical learning to accept the reductionist and linear ways of thinking about the heart as merely a mechanical pump. It is often miscorrelated by instructors to a steam engine that provides motive force to water

which is then passively moved around the system by the engine's mechanism⁴. The heart is no steam engine and the blood no passive force.

'While the most powerful ventricle of the heart can shoot water six feet into the air, the amount of pressure actually needed to force the blood through the entire length of the body's blood vessels (some sixty thousand miles of it...yes that's correct, sixty thousand miles), it would have to be able to lift a one hundred pound weight one mile high.... it is simply incapable of producing the pressure [all by itself] to circulate the blood'⁴.

'In 1932, Bremer of Harvard filmed the blood in the very early embryo circulating in self-propelled mode in spiralling streams before the heart was functioning....so impressed with the spiralling nature of the blood flow pattern, ... he failed to realise that the phenomena before him had demolished the pressure propulsion principle's. In 1995 Ralph Marinelli and others5, evidenced the heart is not a pump and finally refuted the pressure propulsion principle that had been taught to so many. 'The blood is not propelled by pressure, but rather moves with its own biological momentum and with its own intrinsic flow pattern'5.



Further observations of animal embryos showed that 'blood begins to move in regular circulating patterns before the heart has developed sufficiently to begin pumping it'4. The flow of blood is composed of two or three streams, which spiral around each other in the direction of flow, creating as they go something a little like a double helix, and at the centre of these spiralling streams is nothing, or rather a vacuum⁴. 'The blood has its own form, the vortex, which determines rather than conforms to the shape of the vascular lumen and circulates in the embryo with its own inherent biological momentum...'5.

The murmurings of my questing mind reach for the ancient tongue of the classics; where does 'this inherent biological momentum'

come from if not 'heaven'?

It has its own momentum, and we now know the blood also carries pulse waves as well as electrical messages and impulses through the body. This moment of rhythm in the blood is the very beginnings of human life. The blood is the source of movement and '[t]he rhythm of the beating of the heart echoes, or rather expresses and implements, the primordial rhythm, the yin yang alternation which starts the process of giving life to each being'².

'Within a day of gastrulation, the embryonic heart begins to beat and creates blood flow in the developing cardiovascular system...the onset of blood flow is of primary importance to vascular development'⁶. 'Gastrulation is the process during embryonic development that changes the embryo from a blastula with a single layer of cells to a gastrula containing multiple layers of cells'⁷. Days before that there is the impetus of genes and cellular energy, the process that will coalesce into a being. This inherent biological momentum in the blood flow is life's yearning for itself. The poets always know and express more beautifully, more accessibly what science confirms for us:

'Your children are not your children. They are the sons and daughters of Life's longing for itself.

They come through you but not from you, And though they are with you yet they belong not to you'8.

With the bright light of modern science, we can know the realities that the post-natal 'heart constantly monitors the blood through sensitive receptors embedded throughout the heart and arterial tree, and alters its functioning constantly to make subtle, second-to-second shifts in the flow of blood'4. The heart generates pressure waves but also synchronises and stabilises the intricate pressure waves coming from the blood and the organs. It facilitates an exquisitely timed dialogue and facilitates the oxygen of the blood to affect and reach every cell in the body. It is a primary endocrine gland and 'the most powerful biological electromagnetic oscillator in the body'4. The other electromagnetic fields are created by the brain and the gastrointestinal tract.

As a receptor organ, the heart processes not only the information from within but also the impacts of the external environment upon the body. By constantly monitoring the flow of blood, synchronising its own rhythms, waves, pulsations, and electrical output, it shifts the temperature, hormonal functioning, and neurochemical output⁴. It's awe-inspiring to realise how subtle the role of the physiological heart is, how calibrated the heart and vessels are to each other, how everything is monitored moment by moment.

If we all had a greater sense of this, perhaps we might slow down or be more mindful, we might think twice before we uttered unkind words to ourselves or others. For all the emotions are felt by the heart, and as internally generated responses to our environment, they too are being calibrated and processed and monitored by the heart, moment by moment.

'Both the heart and arteries move spirally, actually twist, as they work to enhance this spiral motion of the blood... This kind of spiralling in the heart and vessel tissues enhances the flow'⁴. Once we recognise just how extraordinary the action of the heart is, but also how much the blood is a living, moving source that has a partnership and conversation with the vessels, there evolves within us a more embodied awareness of how the impacts of shock and trauma are rendered.

As the beautifully lyrical Phoebe Bridgers (2017)⁹ reminds us

'I have emotional motion sickness
Somebody roll the windows down
There are no words in the English language
I could scream to drown you out...
I have emotional motion sickness
I try to stay clean and live without
And I want to know what would happen
If I surrender to the sound'

Systemic instability is the impact that profound shock has on the body. It warps and turns that beautifully orchestrated movement and song of the ever-present, neutral surveillance of the conductor, our 'classical Emperor' into a discordant static, with the tension in the strings all wrong. What was once coherent begins to disassemble. And moving away from authenticity, from the original nature of the sovereign, dysregulation commences and life begins incrementally to unwind. The resources of the blood and oxygen get reallocated, eventually exhausted until the inherent biological momentum, the spirit of the blood is unable to bear the weight of memory and fades.

The reallocations show in the tensions of the pulse, the irregular or ectopic beating of the heart, the catch of the breath, the disorganisation of the hormones and neurotransmitters, the intensities of the emotions, or the forever shifting moods, the disordered sleep patterns, the driving, unrelenting aching of the hands or feet, head, back or neck, the tendency to obsessive thinking, becoming easily flustered, or fatigued.

We hardly need to ask what causes Heart Shock. Fright, fear, threat, stress, and emotional disconnection, whether it be low level chronic or acute and traumatic, and the compounding and compressing sequela of each.

Some are physical, like car accidents, surgeries or injuries. The physical trauma, of, say a car accident where there has been whiplash will produce physical symptoms in the soft tissue. It is very important to treat this in the first instance as shock. The scars of surgeries or sports injuries are also important to recognise as possible sites of not only latent infection at the deeper levels of the soft tissue

(especially if painful), but also sites where the meridians have been cut or interrupted and the flow without them changed.

We must remember that whiplash and the scars of injuries or surgeries don't only affect the physical body. Physically upsetting, or invasive events may also have a significant emotional impact.

The kinds of Heart Shock can be many and varied, and thankfully 'not all shocks are created equal'¹. How we determine which require more attention than others is partly led by the narrative of the patient themselves and partly from experience¹⁰. Clinical experience has at its heart the increasingly sophisticated ability to read the ways the body and spirit lose coherence with each other and to treat it accordingly.



Other kinds of traumas that impact the nervous system can be familial, intergenerational, cultural, religious, gendered, or national. (For a helpful discussion on meditation and trauma, see Rupert Spira, *Trauma is the Trace Left on the Bodymind*, 2019)¹¹. Of course, it is an individual's body-mind upon which these traces of shock are etched, so it is personal to a degree. But it doesn't have to have happened to us for the ripples to still be felt. There may be narrative memories continued through families, or suppression of narratives, a silence that creates another kind of dynamic or there may be no access to the memory of events.

The trauma of colonisation, of dispossession, and/or intergenerational disenfranchisement for example, all of these are within the psyche of an individual and their family who have experienced them. Their existence may be ubiquitous in our upbringing, or we are so normalised to their existence that we are unable to recognise them without particular challenges or perception shifts. The effects of these traumas may or may not be manifest in the social context but will be laid down in the jing of a person, deep in the yuan qi.

In my own family of origin, the remarkable but deeply traumatic story of one of my female ancestors, a woman who lived over 200 years ago is still current in the family narrative. As a child of two, she was witness not only to the massacre, mutilation, and cannibalism of more than 70 people, but the death of her own mother. She was one of only four people to survive the ordeal. It is in part because her survival, and later flourishing, as well as her being a person of means that my family knows anything of it, and with time and generations, the impact of that particular shock lessened. Of her 17 children, many died too young, her grandchildren too. Her great-grandchildren were more fortunate, and now among the later generations the impact is hardly visible. It is nevertheless a story around which our lives as even far-flung family members seem to subtly orbit. By knowing the story, we know something of ourselves and in the retelling, we reassert ourselves.

Perhaps too it is easier looking down the short end of the telescope, to feel like its impact has less effect on our individual personhood and familial fortunes. The less brutal but still relevant traumas of those closer in, my grandparents and parents are interestingly easier to recognise and acknowledge, but simultaneously harder to manage and cope with because they seem to form the matrix of personhood and relationship. If I pull this thread will the whole fabric tear? Closer in it feels less like narrative and more like the stuff of the everyday.

When the impact of certain violations is passed to the next generation, it might express as a genetic health issue, sometimes as a familial 'history' or lineage and sometimes we will only see the patterning in micro-expressions, or the vibrations of the nervous system.



Acupuncturists will often consider the impacts of Birth traumas, (and I would include circumcision under this term) as significant factors to be considered. And while the effects or impacts of these assaults to the nervous system are etched into the body, they may not be readily accessible from within the waking state memory.

Damage done during delivery can include what would be considered natural causes of 'prolonged labour, improper positioning of the fetus [including breech presentations]. excessively narrow outlet, deformation of the placenta, a weak uterus or a variety of problems with the umbilical cord'12. The result is respiration is affected by there being 'a delay in the onset of normal respiration while at the same time, an enormous circulatory distress in the placenta'12. From a Chinese Medicine perspective it is called 'gi is trapped in the Lungs' and this may lead to a range of respiratory or allergic disorders throughout life. 'Any impediment to the complete oxygenation of the blood will have its primary effect on the nervous system'12. '... iatrogenic factors, such as high forceps, excessive sedation, and premature induction also have profound effects on the nervous system for similar reasons as stated above'12.

Whether a birth trauma or a shock received later on in life, in our considerations around diagnosis and treatment, there are three main regions of impact seen through the Chinese medicine lens. And when we consider these three aspects, with the view to treat and evaluate, we need to keep in mind that it is less venn diagram and more like looking at a multiple exposure of different images on the same light-sensitive emulsion; a layering.

Firstly, and obviously, the Heart, its circulation of, and relationship to, the blood and therefore emotional stability¹. Because the Heart is said to control the mind, (well why wouldn't it, it has a supreme capacity to monitor the blood and its movement) this instability can often be expressed in a patient's (or one's own) lifestyle, in disordered or chaotic emotional and mental responses, a diminished ability to organise internal and external demands.

In the classical texts and within the cultural ethos of Chinese medicine and acupuncture there is a theme that runs through everything about what makes a good practitioner a superior physician. 'The good practitioner guards the body, the great acupuncturist guards the spirits...that the superior physician guards the spirits, means that (s)he guards the blood and qi – which are nothing other than the expression of the spirits'².

The blood and qi are one of those bonded pair mentioned earlier, and while the heart and its relationship to blood is central, the role of the lung in oxygenation is also fundamental. For a fascinating and helpful understanding of how breathing techniques can be used to assist in the ongoing repair and healing of Post-Traumatic Stress Disorder (PTSD) and trauma states see the extended interview with Dr Pat Gerbarg and Dr Richard Brown (2020)¹³ on their explanation of the 'Coherent Breathing' technique.

Secondly, the nervous system has a complex set of relationships¹ expressed through the paradigm of the six divisions and the view it gives us of the yang, the functional aspect of the oxygenated blood through the

meridian systems is pretty spectacular. Of particular interest in shock states is the relationship between the Tai Yang, the Shao Yin, and the Tai Yin. Here we find the narratives of the personality, as well as what Hammer (2015)¹² calls 'the soft neurological problems', the moods and pain states.

I should briefly point out here what is understood from a Chinese medicine perspective when we talk about the nervous system. Dr Shen's elucidation is perhaps the best. 'The 'nervous system' is simply another name for what is generally considered Tai Yang, that is, the outermost energy of the body, which in some ways might also be equated with the wei qi...the outermost defensive layer of energy'¹². While this doesn't conflict with the understandings of Western biological views of nerve pathways, the complex communication network of brain, spine, and hormonal axes, or the Sympathetic and Parasympathetic system functioning, it is useful to remember that much of these aspects are left to the role of the kidneys, the curious fu (of the brain and the uterus for example), and the interplay of yin and yang.

The eight extraordinary meridians engage with the deeper sources of yuan qi, (the deep memories), while the primary and sinew channels express the wei and ying level of the qi, blood, and fluids, and give a snapshot of the organ system and its current state of health.

And thirdly the kidneys, and their relationship to the brain and the hormonal responses to stress, (adrenaline, cortisol), their relationship to the Triple Burner mechanism¹ (the hypothalamus and pituitary), as well as their relationship to the memory marrow holds, whether it be in the brain, the bones or DNA.

It is interesting to me that the ways we tend to speak of the Kidneys within Chinese medicine is usually without reference to the blood. If we discuss the Liver, Spleen, or Heart we are generally discussing the blood of each, in part because the relationship of those organs to the blood is more obvious. The red streams of life that hold oxygen, qi, electrical messages, and molecular information we call hormones, neurotransmitters, enzymes move with their own and the heart's energy, responsive to inner and outer worlds and create the interface of connection and feedback. In this straightforward way, blood connects the kidneys to the brain and the heart, it can't not.

But the role of kidneys, and particularly their management of the yuan qi and jing speak more to those aspects of being that are about survival, not only our own (which engages the nervous system) but the ability to reproduce and benefit the human species. The kidney's role is also about enabling us to regulate interaction with the external world, and in doing so we learn more about ourselves and perhaps become clearer about the purpose of our lives. Introspection but also the connection and interaction with others and the world is the way we truly understand ourselves, and this coherence is a gift of the kidneys¹⁴.

These days, (and perhaps in all days it was so), many people carry around and present in clinic with some degree of Heart Shock. Traumas can occur early or late in life, at any age and level of the individual's development. Although we do know through research around childhood traumas that the earlier the brain and the nervous system are exposed to profound stressors, the greater the impact is likely to be¹⁵. It is how those traumas are understood and recognised by the individual and society that may also determine the significance and burden of the impact¹.

Important and considerable variables in determining how fully we suffer, whether health can be recovered and how fully we heal, include the individual constitution and the personality, whether there has been a community who has nurtured us or a single extraordinary human who deeply loved and cared for us. The social aspect of medicine (put another way the medicine of social engagement and connection) is paramount, and we continue to fracture our communities and reduce our presence and engagement with each other, to our peril. It is one of the continuing traumas of our time.

Considerations for how to treat these various shocks, traumas and sequela within an acupuncture paradigm will form the basis of the next article. We will look at the use of the ion pumping cords and some treatments to use for whiplash and nervous system tension. We will cover some classical moxa techniques and how to apply them, we will look at the role of essential oils within an acupuncture practice and look at point combinations and balances within the channel system in more depth.

I look forward to having you with me for the next instalment.



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