The Pulse, the Electronic Age and Radiation: Early Detection

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Abstract

“Over the years, our population has been affected by a marked and rapid increase in toxicity from ordinary sources (environmental inhalant and contact toxins) and now from extra-ordinary sources (hydrocarbon based plastics). With the use of Contemporary Chinese Pulse Diagnosis we see the increased incidence of the Choppy quality—once rare and now common. Recently we have observed the sudden increase of another quality—Leather, associated with electro-magnetic radiation, also once rare and now common. This paper discusses the etiology (cell phones and wireless devices, iPods etc.), pathogenesis, diagnostic pulse signs, pathology and management (treatment) of this subtle yet pervasive toxin and especially the role of the pulse in the early detection of what we predict will be a “radiation epidemic.”

Recent articles and publications (Chinese Pulse Diagnosis, 2005; The Liver in Chinese Medicine, 20058) have detailed the effect of toxicity in our time. In essence, in the past 10-15 years there has been a marked increase in the pulse findings of a Choppy quality over the entire pulse, as well as more significant findings in the Left Middle Position associated with the Liver organ system as well as the lower portions of the organ depths reflecting retained pathogens.

The Choppy quality49 has been traditionally viewed as a sign of blood stagnation. Having observed the enormous increase in the appearance of this quality on the pulse, Contemporary Chinese Pulse Diagnosis (CCPD) practitioners explored the possible relationship between blood stagnation (stasis) and toxicity with which it seemed associated. For example, it was found that “snake venom prothrombin activators induce blood clotting in its victims by specifically activating prothrombin to thrombin.” Blood clotting is analogous to the phenomenon of blood stagnation (stasis) in Chinese medicine, which is an obvious threat to health and life when the blood stagnates to the point of insufficient blood circulation.

The pathogenesis of blood stagnation from these toxins (hydrocarbon derivatives) associated with the Choppy quality is the failure of the attempt by “metabolic” heat to eliminate the toxin, usually from the Liver. This heat accumulates and becomes “excess” heat in the Liver that is dangerous to that organ. The Liver normally eliminates heat through the bile into the Gallbladder. When this system is overloaded the ‘excess’ heat is eliminated into the blood that it stores. This heat dries the vessel walls that gradually lose flexibility and coagulates the blood that slowly loses the yin component. The pulse sign of this loss of flexibility is the Ropy quality described below, while the Choppy quality is the one associated with the coagulated blood.

Of particular interest is the finding of the Choppy quality during the initial overall Uniform Impression that occurs while taking the pulse on both wrists simultaneously at the onset of the examination. The purpose is to get a sense of the qualities that are uniform over the entire pulse (all three positions on both sides) and on other large segments of the pulse, such as the Three Burners, and over each wrist. These qualities have special significance to the diagnosis and are interpreted differently than when the same qualities are found in only one position because they give us a picture of systemic rather than localized pathology. For example, Rough Vibration felt simultaneously with all six fingers indicates a previous shock to the Heart, whereas if found in any individual position it would mean tissue damage in the organ associated with that position. Likewise, the Choppy quality felt initially with all six fingers indicates a systemic toxicity, whereas in other positions it might indicate localized toxicity, blood stagnation or micro bleeding (gastro-intestinal system). In addition we are assessing a whole and universal picture of the person and his or her condition in terms of excess, deficiency, stability and capacity to function.

Whereas the Choppy quality was once found rarely on the initial impression of the above-described Uniform Qualities, in the past fifteen years it has become a common quality in both positions. These findings indicate systemic toxicity and retained pathogens, also known as “residual pathogenic factors.” If the retained factor is heat it is called Latent Heat or Lurking Heat. We have observed this on the pulse increasingly since the first Gulf War and coincidently with the Gulf War Syndrome, which a congressional research committee has now definitely linked to organophosphates. While exposure to toxins has been often documented since the beginning of the industrial revolution two hundred years ago, usually related to specific industries (welding) and inhalant solvents by artists, since WWII the proliferation of the use of oil-based hydrocarbons in the manufacture of plastics, pesticides, herbicides and fungicides has escalated by the thousands.

It has been estimated that compared to sixty years ago there are between 50 and 170 new “substances” in our blood; these are mostly long chain hydrocarbons resulting from oil compounds and plastics. What may not be so easily measurable, however, is the effect of a toxin that is increasing faster than any other—namely, radiation.

Ronald B. Herberman, MD, of the University of Pittsburgh Cancer Institute, states on the UOP website and recently before the U.S. Congress that “An international expert panel of pathologists, oncologists, and public health specialists recently declared that electromagnetic fields emitted by cell phones should be considered a potential human health risk. To date, a number of countries including France, Germany, and India have issued recommendations that exposure to electromagnetic fields should be limited.” The Toronto Department of Public Health has stated this as well. Similar testimony to the U.S. Congress was submitted by Dr. David Carpenter of the University of Albany, NY, and by the World Health Organization’s International Agency for Research on Cancer. Electromagnetic radiation is produced not just from cell phones, but also from Bluetooth devices, computers, iPods, microwave ovens, wireless internets, and electric guitars and pianos at the very least, to say nothing of all the electric wires indoors and out that have been radiating the public for the last 100 years.

In the groundbreaking “Bio-Initiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF),” Dr. David Carpenter and Cindy Sage reveal some of the hazards of electro-magnetic fields (EMF). These include childhood cancers, especially leukemia and brain cancers, adult cancers, including breast cancer, genetic damage (DNA), including Alzheimer’s, an effect on stress proteins, damage to the immune system, and chronic inflammatory diseases to name a few. In addition, the radiation of electromagnetic fields passes the blood brain barrier and alters the biochemistry of the brain, hence it will also affect the Shen and one’s mental-emotional-psychological-behavioral state. Studies have shown that EMF from cell phones effect the electrical activity of the brain.

This article proposes a new finding on the pulse that reflects the significant damage accrued from sustained and prolonged exposure to radiation—the Leather quality. CCPD practitioners have consistently found the Leather quality in people exposed to known...
radiation, especially in patients who have undergone radiation as a cancer treatment. It is from the pulse findings from this population that we have extrapolated the association to the growing Leather qualities in the general population.

The Leather Quality

The Leather quality is a variation of the Tense quality with a very different interpretation. The term Leather is inherently confusing because there are three known variants that feel similar at the Qi Depth,\textsuperscript{xxiv} the most superficial part of the pulse below Floating (just under the skin),\textsuperscript{xxv} and vary considerably at other depths. They are the Leather quality described herein, the Leather-Empty quality associated with a Qi Wild condition,\textsuperscript{xxvi} and the Leather-Hollow quality associated with severe hemorrhage. The Leather quality (neither Hollow nor Empty) is a sign of extreme deficiency of yin, blood and, perhaps most importantly, essence.

Li Shi Zhen\textsuperscript{xxxiv} (1518-1593), one of the greatest physicians in Chinese history, places the Leather quality in the Floating category as more Wiry and Rapid than a Hollow pulse (Li Shi Zhen 13\textsuperscript{xxvii}). He states: the Leather pulse occurs from cold and deficiency or when perverse qi moves internally; the Leather pulse results after severe damage to the jing-essence of men; in women, after severe blood loss (Li Shi Zhen 25\textsuperscript{xxviii}).

The distinguishing aspect of the Leather quality is its extreme hardness, especially at the Qi Depth, with the same relative width as the Tense quality, less width than the Taut quality, and greater than Tight.\textsuperscript{xxviii} The other depths are equally hard, whereas with the Leather-Empty the Blood and Organ depths are diminished and with the Leather-Hollow, the Blood Depth is absent.

An associated quality in the continuity of the hardening of the vessel walls is the Ropy quality. The Ropy quality (cord-like, big, hard, and round and distinct from the surrounding anatomical structures) is specifically a sign of chronic heat from excess or deficiency in the blood that has depleted the fluid (yin and blood) of the muscular walls of the vessels such that they have lost significant flexibility and elasticity. With regard to its sensation (hardness) and interpretation (depletion of yin and blood), the Ropy pulse is usually regarded as an indication of a widespread, general arteriosclerotic process and is sometimes accompanied by hypertension. It is distinguished here from the vessel hardening Leather quality by the source of the heat and by the consequential Chinese medical condition. The source of the loss of elasticity of vessel walls with the Ropy quality is excess heat from the attempt of the body to overcome stagnation and the consequence is extreme yin and blood deficiency. The source of the loss of elasticity of vessel walls with the Leather quality is electromagnetic radiation and the consequence is extreme essence, as well as yin and blood deficiency.

The Leather quality has heretofore been a very rare pulse to encounter, and rightly so, as it reflects such extreme deficiency of yin, blood and especially jing-essence. As mentioned above, this pulse quality was initially observed in people who had received radiation therapy for cancer. What is very troubling to the authors is their observation, and recently that of other CCPD practitioners, of the rapid increase of this pulse quality in an ever-growing population of patients, especially the young. Clearly, what we are encountering with this new finding is the unique stresses on the body from an urbanized modernized life. The Leather quality in this context still reflects a severe yin-blood-essence deficiency, just a different etiology, but particularly insidious and ubiquitous.

The authors propose that the Leather quality will be the new “Choppy” in terms of its growing incidence reflecting the significant impact of our lifestyles and environment on our health. With such a profound deficiency, the Leather quality will also reflect another subset of the “Nervous System Weak” condition wherein patients experience fluctuating symptoms, are highly vulnerable, or unstable, and easily disturbed or stressed, with a strong vulnerability to illness. In the past this has been called neurasthenia by the medical profession.

Other Factors Contributing to the Leather pulse quality

Though less relevant to our principal thesis relating the Leather quality to radiation, other lifestyle factors that we have written about—in particular, birthing issues, fertility, technology and exercise—deplete blood, yin, and essence. Birthing practices like cutting of the cord too soon where a lack of blood gets transferred to the baby or birth trauma (any insult to the fetus from conception to shortly after birth) is a shock to the heart with the rapid depletion of Heart yin creating “circulation out of control.”

Other conditions leading to a significant depletion of essence in particular, and both blood and yin, will manifest as a Leather quality on the pulse. They include the “Nervous System Tense” condition that creates Liver Qi stagnation and excess heat in the Liver. Since the Liver stores the blood, the heat enters the blood leading to ‘Heat in Blood’, and “Blood Thick” conditions, seriously depleting Kidney Yin and Essence, and a drying and hardening of the vessel walls. Additionally, depleting Kidney Essence in mothers giving birth later in life and EMF exposure from technological “advancements” such as the overlay of sonograms in-utero deprives the fetus of quality essence. The exercise revolution wherein everyone is pushing themselves too hard and sweating excessively depletes yin and blood (the fluid of the heart), that must ultimately drain the kidney storehouse of yin and essence. The Leather quality has also been encountered by the authors and colleagues in patients with cocaine abuse.

Clinical Considerations

Recently the Leather pulse quality is being measured in large segments of the population. What follows is but a small sampling. Two and a half years ago a pervasive Leather quality was found in a thirty-two year old female with ADD, learning disabilities, and arthritis. The Ropy quality was also present as was “Blood Thick” and “Nervous System Weak.” It was at this point that the Leather quality was still a rare occurrence and hence sparked the present inquiry into the nature of Leather as distinct from the classical etiologies. One current patient, a43, suffering from thyroid imbalance and a systemic inflammatory skin disease of unknown biomedical origin presents with a Leather pulse as well as Ropy and “blood thick.”

In another group of patients, ranging in age from twenty-one to thirty-five, all had the Leather quality except the thirty-five year old person. In yet another group ranging from ages fifty-four to seventy-three there were no Leather qualities. In the younger group, one, aged twenty-seven, had a mild Ropy quality (drying of the intima of blood vessels) which over the past two years has been observed to occur with the Leather quality more often in people slightly older in this generally very young group. Two patients who sleep on mattresses with infrared radiation devices, one thirty-three and the other sixty-seven, had the Leather quality, and only the older patient had a Ropy quality. Years ago the pulse was taken on a young man of about twenty-four whose entire pulse was Leather to an extraordinary degree. At the time there was no explanation, but recently Dr. Hammer recalled that this man worked in Silicon Valley where his exposure to radiation may be comparable to what is occurring increasingly today in the general population.

What is increasingly clear is that the consequences of the extraordinary increases in exposure to radiation due to the exponential increase in all of sources mentioned above as well as supportive devices such as towers and power lines is beginning to manifest signs of deficiencies in yin (fluids), blood, and essence (the stored energy and substance of the body) and increases in toxic heat in the vessels as manifested in the pulse qualities Leather continued on page 34
and Ropy described above. The result is an acceleration of the drying and destruction of tissues in people similar, as mentioned above, to that observed in people with radiation treatment for cancer. Furthermore, in young people we and our colleagues are encountering pulse qualities (Ropy, Leather, Robust Pounding, Slippery and Choppy) associated with the arteriosclerotic process, previously not ordinarily encountered until late middle and old age.

Radiation-induced pathogenic heat presents unique challenges to a remarkably adaptive human organism. Excess heat is balanced by the mobilization of fluid (yin) or carried from tissue (solid and hollow organs) to the endlessly circulating blood and through the network of divergent and muscle-sinew channels to the joints, orifices, body cavities, fascia, muscles, ligaments and tendons. Radiation creates the excess heat while also drying the balancing fluid (yin) as well as reducing the formation of blood (due to the depleted essence that sustains the bone marrow which produces it). The body has no defense against this pathogen, and the most immediate serious consequence is cell mutation and ultimately neo-plastic activity (tumors and cancer).

Conclusion

It is our aim to alert the Chinese medical profession and practitioners of this burgeoning serious medical and public health problem involving modern technology and specifically radiation. Our findings indicate that radiation sickness (a form of damage to organ tissue due to excessive exposure to ionizing radiation) will become endemic in an undetermined period of time with its concomitant destruction of the immune system and with the rampant disease that follows.

We offer a method of early detection and monitoring and are reporting our diagnostic findings in order to mobilize awareness and, hopefully, action. We have postponed issues of prognostication, clinical progression, changes in symptoms, and signs (the pulse) in the service of consciousness.

While environmental issues (legal control of radiating devices) are obviously beyond the scope of this paper, Chinese medical interventions are within our scope of practice. We can offer management-treatment options that have worked to diminish the effects of medical radiation for cancer and offer the suggestion that the reader search the Internet for sources of information about devices that claim to neutralize radiation and for sources of radiation not mentioned above such as cell phones and mattress radiation devices. As always this management must be tailored to the individual based upon the uniqueness of each patient.

Proposed Management Options:

In addressing radiation toxicity presenting with a Leather pulse quality there are five main management principles. They are:

1. Eliminate radiation toxicity
2. Nourish yin
3. Nourish blood
4. Nourish jing-essence
5. Remove heat (from the blood and tissues)

Acupuncture

Applying acupuncture therapy there are a host of options, the main ones utilizing the 8 extraordinary meridians which deal with yin and blood and reducing toxicity, as well as the Primary meridians which deal with the same functions. None of the treatment options listed below are deemed exclusive. They are as follows:

1. Ren Mai
2. Yin Qiao
3. Chong Mai (especially for jing-essence)
4. Dai Mai (to rid the body of radiation)
5. Kidney channel
6. Spleen channel
7. Liver channel

Drawing from the foregoing meridians as well as points from other channels known to accomplish our management principles, one could utilize the following points as part of a more complete treatment strategy:

1. Toxicity: LI 16, KI 9, GB 36
2. LU 9 for influence on vessels
3. Yin-Essence Deficiency and blood cooling
   a. CV-2, 4, 6, 8, 12, 17
   b. CV-15: source point of all Yin organs
   c. SP-6 [Yin and Blood],
   d. SP-12: Where Blood enters Chong Mai
   e. ST-30: crossing point of Chong, Du and Ren Mai; where Qi enters Chong Mai; tonifies Kidney [Liver] Essence
   f. ST-33: tonifies acute Yin deficiency
   g. ST-42: builds fluids
   h. KI-2: cools blood, Yin Qiao
   i. KI 22, 23, 24, 25, 26, 27
   j. KI 3, 7, 9, 10, 15, 16
   k. KI-6: calms Shen by nourishing Yin-Essence
   l. LV 3, 8: build Yin and blood
   m. LU 5: Lung Yin deficiency
   n. HT 6: Heart Yin deficiency
   o. BL-11: Sea of Blood & Jing (strengthens bones)
   p. GV-12: [Body Pillar]
   q. BI-23: nourishes Yin, Blood & Essence
   r. BI-43: nourishes Essence
   s. BL-31 through 34: tonify Kidney Essence

t. ST-25: supports Kidney Yuan Qi
u. SP-10: Moxa cools blood
v. ST-32: removes heat and nourishes essence

Herbal Medicine

From an herbal perspective we list the following suggestions, none of which are exclusive and all of which should be tailored for individual needs:

1) Jing and Yin-Blood
   a. Liu Wei Di Huang Tang and variations
   b. Yi Guan Jian
   c. Zuo Gui Yin and Wan
   d. Jin Suo Gu Jing Wan
   e. Qing Hao Bie Jia Tang
   f. San Jia Fu Mai Tang
g. Da Bu Yin Wan

2) Radiation

a. Moisten Lungs
   Amer. Ginseng Xi Yang Shen 15 gm
   Gypsum Gu Li Shi Gao 6 gm
   Ophiopogon Mai Men Dong 15 gm
   Asparagus Tian Men Dong 15 gm
   Glehnia Sha Shen 15 gm
   Scrophularia Xuan Shen 15 gm
   Rehmania Sheng Di Huang 15 gm
   Imperata Bai Mao Gen 15 gm
   Polygonati Odorati Yu Zhu 15 gm
   Lonicerea Jin Yin Hua 15 gm
   Anemarrhanea Zhi Mu 9 gm
   Oldenlandia Bai Hua She She Ca o 30 gm
   Taraxci Pu Gong Ying 15 gm
   Poria Cocos Fu Shen 24 gm
   Atractylodes Bai Zhu 9 gm
   Ligcoric Gan Cao 6 gm
   Salvia Dan Shen 9 gm
   Trichosanthis T ian Hua Fen 15 gm
   Corri Asini E jiao 9 gm

b. General for Radiation

Ophiopogon Mai Men Dong 24 gm
Asparagus Tian Men Dong 24 gm
Glehnia Sha Shen 20 gm
Scrophularia Xuan Shen 8 gm
Rehmania Shu Di Huang 20 gm
Imperata Bai Mao Gen 20 gm
Polygonati Odorati Yu Zhu 18 gm
Lonicerea Jin Yin Hua 18 gm
Anemarrhanea Zhi Mu 20 gm
Oldenlandia Bai Hua She Ca o 60 gm
Taraxci Pu gong Ying 40 gm
Codonopsis Dang Shen 24 gm
Poria Cocos Fu Shen 24 gm
Atractylode Bai Zhu 20 gm
Ligcoric Gan Cao 6 gm
Salvia Dan Shen 30 gm
Trichosanthis Gua Lou 24 gm
### References

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7. Ibid. p 362
8. Ibid. pp. 463-464
10. *The yellow emperor’s classic of internal medicine*, Simple Questions, People’s Health Publishing House; 1979
12. v. Ibid. p 370
15. xiii. 5) General for Blood Heat
17. xii. 5) Gems: a. Black Tourmaline
18. xii. 3) Blood Heat
20. xii. 1) Radiation
   1. xii. LV 5: Lung Yin deficiency
   2. xii. BL-2: Sea of Blood & Jing (strengthens bones)
   3. xii. GV-12: [Body Pillar]
   4. xii. BL-23: nourishes Yin, Blood & Essence
   5. xii. BL-43: nourishes Essence
   6. xii. BL-31-34: tonify Kidney Essence
   7. xii. ST-25: supports Kidney Yuan Qi
   8. xii. SP-10: Moxa-cools blood
   9. xii. ST-32 removes heat and nourishes essence
21. xii. 2) Radiation
   1. i. Moisten Lungs
      2. ii. General for Radiation
      3. iii. 1) Radiation
      4. iv. 2) Radiation
      5. v. 3) Blood Heat
      6. vi. 4) Essential Oils
      7. vii. 5) Gems
      8. viii. 6) Other
      9. ix. 7) Blood Heat
      10. x. 8) Radiation