case reports
THE CARE GUIDELINES

CASE REPORT

To encourage other practitioners to consider submitting a case report for the E-News, we have restructured the format in line with recommendations from July 2014 and have left in the key guides – should you be interested just email info@nutri-link.co.uk We will send you the word doc.

Case reports are profesional narratives that outline the diagnosis, treatment, and outcomes of the medical problems of one or more patients. Information from case reports can be shared for medical, scientific, or educational purposes. They provide a framework for early signals of effectiveness adverse events, and cost. Case reports and the systematically collected data from which they are written also provide feedback on clinical practice guidelines.

Case Report of hives, redness and overall dryness resolving with a liver-focused NT programme in a 55-year-old lady, after 3 years of suffering from skin problems.

Abstract. *Summarise the following information if relevant: (1) Rationale for this case report, (2) Presenting concerns (eg, chief complaints or symptoms, diagnoses), (3) Interventions (eg, diagnostic, preventive, prognostic, therapeutic exchange), (3) Outcomes, and (4) Main lesson(s) from this case report.*

This case explores a nutritional focused approach to the resolution of a number of skin issues in a 55-year-old lady, Mrs F.L. She had suffered from dry skin all over her body for the previous 3 years, along with red patches and blotches on her shoulders and back accompanied by hives in those areas as well as other parts of her body, even when there was no redness. Most days she desired to scratch her skin on and off all day, but she continually resisted.

There had no formal diagnosis, but it is known that hives are present and there is a possibility that the condition is some form of eczema.

Hives

Hives, medically known as urticaria, are red, itchy, raised welts on the skin that appear in varying shapes and sizes; each one characteristically lasts between six to 12 hours. Although hives are very common, their cause is often elusive. Hives can change size rapidly and move around, disappearing in one place and reappearing in others, often in a matter of hours. Ordinary hives flare up suddenly. Occasionally hives are produced by direct physical stimulation by environmental forces like heat, cold, and sunlight.

Hives can develop as a result of sun or cold exposure, infections, excessive perspiration, and emotional stress. The reason why stress seems to precipitate an outbreak of hives in many people is not completely understood but is likely related to the known effects of stress on the immune system.

Mrs F.L. observed that a hot shower and exercise would make her skin worse, with morning and night-times typically presenting at its worst.

Treatment of hives is directed at symptom relief until the condition resolves. Antihistamines are the most common first line treatment for hives. Hives typically are not associated with long-term or serious complications.

Eczema

Eczema is not a single condition, but a recognisable reaction pattern seen in a number of skin diseases. Eczema signs and symptoms include tiny blisters (vesicles) that can weep and ooze, eventually producing crusted, thickened plaques of skin. It is almost always quite itchy. This partly matches F.L.'s skin but not completely, and for this reason her GP has not made this formal diagnosis.

According to a leading medical website (www.medicinenet.com) there are at least 11 different types of skin conditions that produce eczema. In order to develop a rational treatment plan, it is important to distinguish them. This is often not easy.

Atopic dermatitis: This health condition has a genetic basis and produces a common type of eczema. Atopic dermatitis tends to begin early in life in those with a predisposition to inhalant allergies, but it probably does not have an allergic basis. Characteristically, rashes occur on the cheeks, neck, elbow and knee creases, and ankles.

Irritant dermatitis: This occurs when the skin is repeatedly exposed to excessive washing or toxic substances.

Allergic contact dermatitis: After repeated exposures to the same substance, an allergen, the body's immune recognition system becomes activated at the site of the next exposure and produces eczema. An example of this would be poison ivy allergy.

Stasis dermatitis: It commonly occurs on the swollen lower legs of people who have poor circulation in the veins of the legs.

Fungal infections: This can produce a pattern identical to many other types of eczema, but the fungus can be visualized with a scraping under the microscope or grown in culture.

Scabies: Is caused by an infestation by the human itch mite and may produce a rash very similar to other forms of eczema.

Pompholyx (dyshidrotic eczema): This is a common but poorly understood health condition which classically affects the hands and occasionally the feet by producing an itchy rash composed of tiny blisters (vesicles) on the sides of the fingers or toes and palms or soles.

Lichen simplex chronicus: It produces thickened plaques of skin commonly found on the shins and neck.

Nummular eczema: This is a nonspecific term for coin-shaped plaques of scaling skin most often on the lower legs of older individuals.

Xerotic (dry skin) eczema: The skin will crack and ooze if dryness becomes excessive.

Seborrheic dermatitis: It produces a rash on the scalp, face, ears, and occasionally the mid-chest in adults. In infants, in can produce a weepy, oozy rash behind the ears and can be quite extensive, involving the entire body.

None of these matched accurately the presentation of F.L.'s skin, and she does not experience any respiratory allergies or hayfever.

Key Words. *Provide 3 to 8 key words that will help potential readers search for and find this case report.*
Dry skin, patchy, blotchy skin, hives, itch, liver detoxification.

Introduction. *Briefly summarise the background and context of this case report.*

Mrs F.L. has very little health history of note. It is only in the past 3 years of her life, that her skin has manifested its current state. The only item on her questionnaires was a history of varicose veins for which she had two small ops in 1994 and 2004. There has been no issue since.

Whenever F.L. exercises it makes her skin worse, probably because of the raised body temperature, and when in heat or the sun it exacerbates the redness, itchiness and blotchiness. This makes F.L. feel very self-conscious and uncomfortable. She needed to end her showers by turning off the hot tap and just standing for a short time under the cold only to reduce the redness and hives. The itching was present more or less all the time but was worse when the skin visibly deteriorated – i.e. more red and blotchy and with more hives.

The time of day also influenced the severity of her skin signs and symptoms, in that at bedtime it was worse as it was in the morning. It also seemed to be aggravated to some extent, at least, by eating, in that it was worse after every meal.

Mrs F.L. had tried a series of interventions, which are described below, in order to resolve her irritating and annoying and uncomfortable skin condition. “What could possibly be the cause or the cure for my condition?” she exclaimed in our first appointment, having described to me all of the things she had done in an attempt to resolve it.

Presenting Concerns. *Describe the patient characteristics (eg, relevant demographics—age, gender, ethnicity, occupation) and their presenting concern(s) with relevant details of related past interventions.*

Mrs F.L. lived in the home counties about 30 miles from the centre of London, with her husband. Her two grown up children in their twenties having left home. She is caucasian British with all of her forebears living in England as far as she knew. She does not work and looks after the house, and has a busy social life and exercises regularly, although the intensity has been less since her skin condition in order to minimize the exacerbation of the condition.

Mrs F.L. is 8 stone 5 lbs (117 lbs, 52kg) and 5’ 5” tall (168 cm).

Three years previously, she noticed, for no particular reason that she could think of, that her skin was bumpy with hives. Her skin also became red and blotchy on her shoulders and her back. She did not give it much notice because she thought it would disappear just as it had appeared, spontaneously. However, weeks went by and the hives, redness and itchiness did not resolve. She thought it might have been due to the central heating being on every day at the start of winter towards the end of 2014.

Since that time, her skin signs and symptoms have remained and have been unaltered by all of the various steps she has taken in order to resolve it:

The prescribed steroid cream was effective, and she applied it to one shoulder and arm and not the other for comparison and there was a clear difference in terms of reduced redness and itching. However, after 2 weeks

of using it and then stopping and then seeing her skin revert to its previous state had confirmed to her that this was not the way to proceed. She wanted to address the underlying root cause.

She then changed all of her washing powders and ensured that she wore just cotton or silk next to her skin with no other materials and in particular polyester. This made no difference.

She changed her bedding to address a potential dust mite allergy, but this also made no difference.

Her doctor referred her to an allergist who conducted a skin prick test. Her skin became red and increased hives appeared for all the challenges including food and materials that she never ate or were exposed to. It was decided she had a raised histamine level but not a specific immune reactivity to any food or chemical or material. She did, however, experiment with avoiding dairy products and stopped using rubber gloves in the kitchen, although she could not rationalise why she would experience red, blotchy skin on her shoulders by her hand coming into contact with something.

In the summer of 2015, with her condition now largely unchanged for 9 months and continuing to be a source of annoyance and discomfort, F.L. sought the advice of an acupuncturist. After 5 sessions over two months, and with no change, the acupuncturist recommended that she seek help from a nutritionist.

In early Autumn 2015, F.L. visited a nutritional therapist and engaged in an exclusion diet, avoiding gluten and dairy products (again) and yeast and sugar and alcohol (not that she drank much at all) and onions and garlic. She engaged in the exclusion diet for 3 months. She lost some weight, which was not welcome, and she saw no improvement in her skin. The nutritionist also recommended supplements to support her gut lining and to reduce inflammation.

On the nutrition programme, and in spite of F.L.'s optimism that it would be effective, there were no changes to her skin. This was very disappointing. F.L. had been diligent with following the programme and was disciplined in terms of avoiding the specified foods. After this 3 month programme, F.L. gradually re-introduced the food individually, as instructed, and there were still no changes and no indications that these foods were problematic in any way.

The nutritionist then recommended adrenal support supplements for a month and then thyroid support for the following month, along with a mixture of fatty acid supplements. Still, no change in her skin. F.L. told me she had taken hundreds of pills over many months and whilst she said that she felt pretty good generally, there was no effect on her skin.

At about this time, and on her own accord she bought from the chemist's an anti-histamine cream. This became impractical and she could not reach her back very easily, and they were only minimally effective she stopped those.

In 2016, over 16 months after her skin condition had appeared, F.L. had another go at self-help and visited an aromatherapist who used topical oils on the skin. There were four appointments in all, but in spite of having a very pleasant experience, their was no change in her dermatological symptoms.

In November 2016, F.L. revisited her GP and the standard haematology and biochemistry tests were conducted. Nothing out of the range was identified.

F.L. took a break from seeing doctors and various complementary practitioners for most of 2017 and dealt with the skin symptoms as best she could, using a neutral moisturiser daily. She still found it hard not to scratch her skin at night, and if she did break the skin, it would lead to scabs and rougher skin. It was in September 2017 that a close friend of hers made the recommendation to see me. We met for the first time in November 2017.

Clinical Findings. *Describe: (1) the medical, family, and psychosocial history including lifestyle and genetic information; (2) pertinent co-morbidities and relevant interventions (eg, self-care, other therapies); and (3) the physical examination (PE) focused on the pertinent findings including results from testing.*

F.L.'s skin on her shoulders and back was most prone to being blotchy and red and itchy. She had dry skin all over her body, however. Hives could appear on her arms and legs but primarily where there was some discolouration. This had been present for three years.

Medically, no formal diagnosis has been reached, since the signs and symptoms did not fit into a conventional named diagnosis. Eczema and hives were used in any conversation with her doctor, however.

There was no family history of skin conditions in her parents and nor in her two younger sisters. The only family history condition of any relevance that F.L. had been able to identify was varicose veins. F.L. had one vein removed in 1994 and the other removed in 2014.

F.L. was in many ways very well and took care of her health but was frustrated and slightly jaded by her skin condition which lowered her mood. She told me that she had friends who had been diagnosed with some major conditions and had been through their treatment and come out the other end, successfully, in the time that she had been suffering from her relatively minor skin condition. The therapeutic intervention is detailed elsewhere in this case report.

There were options for testing imbalances of a functional kind, including mineral status and fatty acid status as well as sensitivities which would have been more comprehensive than the skin prick method of testing a few years prior. As it transpired, these were not conducted.

Timeline. *Create a timeline that includes specific dates and times (table, figure, or graphic).*

F.L. was born in mid-1962. As a child, she had suffered the usual childhood illnesses but had not experienced anything remarkable in her health throughout her school life.

She married in her late twenties and had two children when she was 29 and 31 years of age. Again, there were no health issues of note to report. She had stopped working when she was in the latter stages of pregnancy and had not returned to work.

A year after the birth of her second child, a vein valve failed, and the varicose vein was stripped out. Twenty years later the same procedure was needed for a varicose vein in her other leg. The first was certainly associated with her pregnancies, but the second did not have this association, with age and genetics quoted as the cause.

F.L. engaged in regular exercise, kept physically active in the day, and remained lean and well, and ate a relatively wholesome diet and did not drink much alcohol (3-4 glasses a week).

In 2014, at 52 years of age the skin condition manifested. She used steroid cream for a short time but then stopped as it was clear this was purely palliative, and she is aware of the side effects of longer term steroid cream use.

Early in 2015, F.L. tried to exclude all obvious washing powder triggers but there was no alteration in her skin. Within a few months of this, she also changed all the sheets and pillow cases and used a dust-mite proof mattress cover.

In May 2015, she had an appointment with an allergy doctor, but the tests proved inconclusive.

In the summer of 2015, now aged 53, F.L. had many appointments with an acupuncturist.

In the Autumn of 2015, F.L. began seeing a nutritional therapist. She followed al the recommendations of an exclusion diet with gut healing supplements but to no avail in terms of her skin condition. She also engaged in an adrenal support programme and a thyroid support programme.

Anti-histamine creams also had a minimal effect and were too cumbersome to use easily and were only palliative, and were stopped after a few weeks.

In the Spring of 2016, F.L. tried aromatherapy which she really enjoyed, but it made no difference to her skin.

In November 2016, now aged 54, F.L. revisited her GP and but “nothing wrong” could be found.

In November 2017, now aged 55, F.L. had her first appointment in my clinic.

Diagnostic Focus and Assessment. *Provide an assessment of the (1) diagnostic methods (eg, PE, laboratory testing, imaging, questionnaires, referral); (2) diagnostic challenges (eg, financial, patient availability, cultural); (3) diagnostic reasoning including other diagnoses considered, and (4) prognostic characteristics (eg, staging) where applicable*.

The questionnaires that F.L. had completed were quite sparse, so the first part of the consultation involved clarifying the absence of signs and symptoms and history of conditions, which were all verified.

All of the treatments which F.L. had engaged have at least anecdotal evidence of being able to resolve skin conditions. As an NT, I noted that the dietary exclusion combined with gut healing remedies had not worked, just as nothing else had. This was certainly puzzling.

With a completed health mind map, akin to the Functional Medicine Matrixx and a time-line health history sheet next to it, it was quite evident about what I was NOT going to recommend to F.L. On the face of it, however, it was not immediately evident as to what to do. Whilst she was naturally friendly, she did admit to being quite sceptical that anything that I could recommend would work, given her previous experiences.

Itching is a state almost exclusively reserved to the skin and is something that can be strongly influenced by the liver, and in particular the balance of the phase one and two enzyme pathways and related bile flow. This drew my attention to the liver as a potential source of the skin condition. The general anaesthetic used for the varicose vein op. had been some 3 months prior to the onset of the hives and red, blotchy and itchy skin, so it was not an immediate post-op condition, but nonetheless raised my curiosity.

We then had a conversation about alcohol and F.L. told me that she very rarely drank more than a single glass at one time, and a maximum of 4 glasses a week, and usually less. She drank red wine when she did have any alcohol. We carried on discussing this for a few minutes more, as I pursued all obvious connections with her liver metabolism and detoxification. She told me that if she did drink two glasses of wine then she would feel worse for wear and this had always been the case, but more so as time passed.

Unlike most other patients' representations of their health in the diagrammatic form of a mind map which are often replete with interconnecting lines between one box and another and filling the page, hers was quite empty-looking. However, the liver and her skin condition were linked and fit a theory, at least, that they could be connected compared to the other possible contributory factors of food sensitivity, compromised gut lining, contact allergy, gut dysbiosis, lack of or imbalance of fatty acids such as that which exists in atopy, or sub-clinical hypothyroidism in which dry skin can be a feature.

In my clinical experience, I have observed chronic skin conditions be related to imbalances in hepatic detoxification amongst a relatively wide variety of other imbalances as outlined above. The references cited serve a point of principle.[1,2,3]

There is some emerging evidence that there is a circadian rhythm link with oxidative stress and this may in part explain the variability of F.L.'s symptoms in the morning and evening to support the theory that free radicals and redox balance can play a role in skin disorders.[4,5]

Therapeutic Focus and Assessment. *Describe: (1) the type(s) of intervention (eg, preventive, pharmacologic, surgical, lifestyle, self-care) and (2) the administration and intensity of the intervention (eg, dosage, strength, duration, frequency).*

The intention was not to repeat nutritional changes that had already been implemented, whilst not ignoring the potential benefit of key aspects of previous advice in order to achieve the necessary differences in F.L.'s health to bring about a resolution of her skin condition.

Therefore, my focus was not on food exclusions, not on healing the gut lining, not on supporting the adrenals and not on supporting thyroid hormone. There was no sound evidence to support any one of these approaches based on the case history and the lack of symptomatic improvement having engaged in such nutritional therapy programmes. This is not to say that they did not have their place in time, since they do represent possible paths to improvements in the skin.

[1] Finet A et al - Groupe de Recherche sur le Psoriasis de la Société Française de Dermatologie. Liver test abnormalities in patients admitted for severe psoriasis: prevalence and associated risk factors. J Eur Acad Dermatol Venereol. 2016 Oct;30(10):1742-1748. doi: 10.1111/jdv.13674. Epub 2016 May 26. View abstract

[2] Sivaranjani N, Rao SV, Rajeev G. Role of reactive oxygen species and antioxidants in atopic dermatitis. J Clin Diagn Res. 2013 Dec;7(12):2683-5. doi: 10.7860/JCDR/2013/6635.3732. Epub 2013 Dec 15. View abstract

[3] Papagrigoraki A, Del Giglio M, Cosma C, Maurelli M, Girolomoni G, Lapolla A. Advanced Glycation End Products are Increased in the Skin and Blood of Patients with Severe Psoriasis. Acta Derm Venereol. 2017 Jul 6;97(7):782-787. doi: 10.2340/00015555-2661. View abstract.

[4] Ndiaye MA, Nihal M, Wood GS, Ahmad N. Skin, reactive oxygen species, and circadian clocks. Antioxid Redox Signal. 2014 Jun 20;20(18):2982-96. doi: 10.1089/ars.2013.5645. Epub 2013 Nov 21. View abstract

[5] Méndez I, Vázquez-Martínez O, Hernández-Muñoz R, Valente-Godínez H, Díaz-Muñoz M. Redox regulation and pro-oxidant reactions in the physiology of circadian systems. Biochimie. 2016 May;124:178-186. doi: 10.1016/j.biochi.2015.04.014. Epub 2015 Apr 26. View abstract

The focus for F.L. was on reducing oxidative stress with a specific antioxidant programme, and due to her existing very sound diet, there was very little dietary change, although alcohol was to be avoided. Here is the relatively small but targeted supplement programme, which aimed to support glutathione pathways and conjugation and glucuronidation. (Glucuronidation is often involved in the metabolism of substances such as drugs, pollutants, bilirubin, androgens, oestrogens, mineralocorticoids, glucocorticoids, fatty acid derivatives, retinoids, and bile acids).

I also included a low dose of a chlorphyll-type concentrate (PorphyraZyme) to bind to intestinal or other toxins to help minimise the stimulus of phase one CYP450 enzymes and reduce the burden on the liver.

First Supplement Programme – Nov 2017	Dose
Thiodox (glutathione complex) (ARG)	1 with breakfast & dinner
Ca-D-Glucarate (BRC)	1 with breakfast & dinner
PorphyraZyme (BRC)	1 with breakfast & lunch

We agreed for F.L. to follow this programme for four weeks and then return for a follow up appointment.

We then met again and F.L. reported virtually no change in her skin, which was consistent with all other interventions she had implemented. If there was such an imbalance as I conjectured, then I realised that such an imbalance may take a little longer to correct and manifest in symptomatic improvement. However, I reduced the PorphyraZyme and added a natural anti-histamine plant concentrate in the form of quercetin. I recommended another four weeks before the next follow up.

Second Supplement Programme – Dec 2017	Dose
Thiodox (glutathione complex) (ARG)	1 with breakfast & dinner
Ca-D-Glucarate (BRC)	1 with breakfast & dinner
PorphyraZyme (BRC)	1 with dinner
Quercetin 300 (ARG)	2 at the start of each meal

We met in early January, and F.L. reported that there was a 25% reduction in the itching and redness. This could have been attributed to the palliative effects of quercetin. F.L. expressed disappointment and asked if she should simply stop all the supplements as they were not really working. However, I have witnessed the efficacy of these supplements in many patients with a variety of disorders and appreciated that some liver imbalances can take some months to revert to enzymatic balance. For this reason, recommended that F.L. persist with the antioxidant, hepatic support as a means to resolve her skin condition.

In order to determine how much of the reduction of itching and redness was due to the quercetin, I had her stop this, with directions to re-commence if the symptoms became too troublesome.

I directed F.L. to stop the glutathione support supplement but carry on with the glucuronidation support and added the hepatic protective, fat emulsifier phosphatidylcholine, which I have used consistently with many liver-focused nutrition programmes with success in terms of reducing symptomology. These amendments to the programme were based on clinical experience for the need to shift support for the major detoxification and antioxidant pathways within the liver.

The analogy I liken the process to is a wobble board, as opposed to a see-saw. The wobble board is considerably more challenging to balance than a see-saw which provides a very simplistic and two-dimensional image of take some of this (e.g. a supplement) and have less of that (e.g. alcohol). The process can certainly

involve a trial and error process and often less of an intervention can be more effective than more. Having made recommendations that have made patients' symptoms worsen, I have learned better how to modulate the sometimes delicate means by which to balance a patient's redox balance as influenced by liver pathways.

The changes in the programme were not based on test results. This may be a clumsy tool on which to base dynamic changes due to the time delay in getting results back. Another important consideration is the timing of testing whilst taking supplements for the liver or conducting such testing whilst not taking supplements for a week or more and then testing. There are also limited methods of assessing glutathione and glucuronidation in the same test.

I increased the dose of the plant, toxin-binding concentrate, as well as the dose of phosphatidylcholine.

Third Supplement Programme – Jan 2018	Dose
Ca-D-Glucarate (BRC)	1 with breakfast
PorphyraZyme (BRC)	2 with breakfast & 1 with dinner
Phosphatidylcholine (BRC)	1 with lunch & 2 with dinner

As before, we met four weeks later in early February 2018.

F.L. had emailed me before this most recent appointment to share the news about her skin, so when we met I knew what she had recently observed which was a marked improvement in her skin. 80% of her skin symptoms and signs had resolved over three days after two weeks of taking this most recent programme. She had yet to experience anything like this improvement after making any change or receiving any treatment in the past three years.

She had abided by the no alcohol, taken the supplements exactly as directed, and had eaten a very similar diet as she had done since we met in early November 2017.

In this instance, I recommended her to persist with the very same programme and to report back to me how her skin was on a week to week basis, anticipating the potential need to adjust her supplement programme should there be any changes one way or the other. A week later, F.L.'s email described the improvements as greater than before. The following week, F.L.'s email described a steady improvement again, reaching in her opinion a 90% resolution of her signs and symptoms. She described what it was like not to have itching, not to have red skin blotches, and not to have to pay attention to her skin as she had done for the previous three years. She had shed tears of relief as she felt that she had come to the end of her minor yet important-to-her skin condition.

Whilst time will tell whether F.L. can gain total relief from the skin issue that has dominated her health in recent years, but she is almost there and declared, in her last email in mid-February that she could most certainly live with the skin as it was described.

We are due to meet in two months' time to review what may need changing, if anything. If the skin worsens then we plan to arrange a teleconsult as soon as can be arranged.

Supplement Information

Thiodox (glutathione complex) (ARG)

Supports a healthy liver detoxification, primarily phase II, provides antioxidant protection, supports a healthy immune function and production of glutathione, facilitates the production of cellular energy, enhances the effectiveness of other antioxidants. Provides NAC, glutathione, lipoic acid, selenium, riboflavin, thiamin & vitamin C.

Ca-D-Glucarate (BRC)

Provides the substrate for glucuronidation, which is one of the major Phase II hepatic detoxification pathways, which is involved in the elimination of a wide array of metabolic molecules including hormones.

PorphyraZyme (BRC)

Porphyra-Zyme™ - is a concentrated Prophyrin Product. Unlike traditional chlorophyll products, Porphyra-Zyme is a concentrated porphyrin supplement. By increasing the porphyrin content, the heavy metal binding capability is also increased, providing clinicians with a natural, effective "chelating" tool.

Porphyrins have the ability to bind divalent metal ions due to the nitrogen atoms of the tetrapyrrole nucleus. The central ion in chlorophyll is magnesium, which is freed from chlorophyll under acidic conditions, permitting other metals to bind in its place. Toxic metals, such as mercury, lead and arsenic, are complexed by the porphyrins.

Quercetin 300 (ARG)

Quercetin is an antioxidant bioflavonoid found throughout the plant kingdom in rinds and barks. Quercetin and other bioflavonoids can enhance the body's ability to control the release of histamine and other important signalling pathway metabolites, such as prostaglandins and leukotrines.

Phosphatidylcholine (BRC)

A fat emulsifier, providing overall cell membrane integrity support, and is hepatoprotective.

Discussion. *Please describe (1) the strengths and limitations of this case report including case management, (2) the literature relevant to this case report (the scientific and clinical context), (3) the rationale for your conclusions (eg, potential causal links and generalizability), and (4) the main findings of this case report: What are the take-away messages?*

Strengths and limitations of this case report including case management

This is an example of careful listening to the case history and appreciating the multiple existing interventions that had failed to elicit improvements of any kind. Had we met at the outset of the skin condition, it is very unlikely that this approach would have been selected, but rather a very similar approach as had been recommended by other practitioners would have been the avenue to explore.

There could have been an assessment of oxidative stress and glutathione levels and mineral status, such as selenium and zinc, and this may have supported a means of effective intervention. In other cases of hard-to-treat conditions, which may not be particularly serious in nature, I have found such tests to be useful in some cases but not in others.

The literature relevant to this case report
Some limited reference has been cited to support the theory of what was contributing to F.L.'s skin condition. Due to the exclusion of other interventions, there needed to be a 'theory' which fit this case, and a perturbed redox balance appeared to be one such theory.

The rationale for your conclusions
Due to the many other routes which has been engaged in by F.L. to resolve her skin issues, this left me to consider the next most likely contributory factors and the redness and itchiness led me to consider there could be a liver clearance issue involved. Clinical experience also informs me that this is a real consideration, having witnessed other improvements by following such a programme and not just with skin conditions.

The main findings of this case report: What are the take-away messages?
As with any condition that stretches over years, a careful analysis of the time-line together with the interventions made led to the conclusion that something other than the much more common contributors was involved. The first thoughts may have been about food sensitivity & Increased gut permeability, with second thoughts then considering the influence of gut dysbiosis and third thoughts about the involvement of imbalanced thyroid hormones, specifically sub-clinical hypothyroidism.

Patient Perspective. The patient should share his or her experience or perspective of the care in a narrative that accompanies the case report whenever appropriate.

F.L. could scarcely believe that the small intervention of taking a few supplements a day could result in the improvements she had experienced, compared to the apparently more significant changes she had made previously. She expressed her delight at the rapid turnaround of her skin over the three-day period in February 2018.

I congratulated F.L. on her perseverance which ultimately is what allowed her to achieve the significant improvements in her skin. She had been ready to stop an approach which was not overtly working but gave it some more time.

Informed Consent. *Did the patient give the author of this case report informed consent? Provide if requested.*

The patient is not aware her case history is being used, and all identifiable data has been removed. F.L. are not her real initials.

Case Report Submission Requirements for Authors

1. Competing interests. *Are there any competing interests?*

None Known

2. Ethics Approval. *Did an ethics committee or Institutional Review Board give approval? If yes, please provide if requested.*

This case was not presented to an ethics committee.

3. De-Identification. *Has all patient related data been de-identified?*

All patient data has been re-identified

4. Author. *Name of Author and practice*

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