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 e mail info@nutri-linkltd.co. 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 a 35 year old Asian mother whose almost lifelong headaches & then more recent physical pains & nervous twitches resolve with specific NT intervention.

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 decades-long incidence of dominant headaches in a mother of two young children, Mrs J.K.. The severity of her headaches varied but some could certainly be described as 'migranous' headaches, as well as much more recent aches and pains in limbs, a very tense right shoulder, twitching in the arms & a peculiar vibration in an ankle.

According to the International Association for the Study of Pain (IASP) (USA) research shows that headaches are the most prevalent neurological disorders and among the most frequent symptoms seen in general practice. 50% of the general population have headaches during any given year, and more than 90% report a lifetime history of headache. The average lifetime prevalence of migraine is 18%, and the estimated average prevalence in the past year is 13%. The prevalence of migraine in children and adolescents is 7.7%. Tension type headache is more common than migraine, with a lifetime prevalence of about 52%. However, only frequent or chronic tension type headaches are disabling.

J.K. experienced disabling headaches at least once a month, but had experienced lesser headaches every week of her life. She only took pain mediciation for the stronger headaches. This puts J.K. in the 3% of the general population who have chronic headache, i.e., a headache ≥15 days per month. They are the most severely disabled.

The sex ratio for lifetime migraine remains stable at 2-3 females for 1 male and is generally consistent across countries. The female preponderance of headaches emerges at puberty, with females having a 1.5 fold greater risk of headaches and 1.7 fold greater risk of migraine than male children and adolescents. There is an equal sex ratio for tension type headache prevalence.

A family history of migraine is one of the most potent and consistent risk factors for migraine. In J.K.'s case, there is however, no family history. The results of twin studies suggest that genetic factors underlie approximately one third of the familial clustering of migraine. In familial hemiplegic migraine, mutations in a single gene cause the disease.

The common forms of migraine, with or without aura, are complex genetic disorders where multiple genetic polymorphisms determine a "migraine threshold." Several of these genetic fingerprints have recently been identified on various chromosomes in genome wide association studies.

Migraine is strongly associated with anxiety and mood disorders, allergies, chronic pain disorders, and epilepsy. Migraine with aura, but not migraine without aura, is a risk factor for ischemic stroke and silent brain lesions on MRI, particularly in women with frequent attacks. Anxiety in childhood is associated with the subsequent development of headache in young adulthood. Cyclic vomiting, somnambulism, and travel sickness in childhood are considered "migraine equivalents" and can herald the development of migraine later in life.

In J.K.'s case, she presented as someone who is quite anxious and she and her husband both attribute this to the anticipation of not being able to function 100% due to the headaches, as opposed to being a generalized state of being. However, it has been so many years now, that it is difficult for J.K. to know whether she was ever anxious before or separately from having the headaches.

The severity of migraine is variable: 25% of migraineurs experience ≥4 severe attacks per month, 48% have 1–4 severe attacks, and 38% have ≤1 severe attack per month. The course of migraine also varies: they remit in 30% of subjects, persist in 45%, and transform into other types of headache in 25%.

Overall, migraine prevalence decreases after age 50 and in women after menopause, unless oestrogen replacement therapy is administered. Early age at onset, psychosocial stressors, and psychiatric comorbidity may be related to a less favorable outcome.

The financial cost of headache arises partly from direct treatment costs, but much more from loss of work time and productivity. The annual U.S. direct medical costs attributable to migraine were estimated at $1 billion (Dollars) in 1999. In the EC (2004, 15 countries evaluated), the total cost of migraine was estimated at €25 billion (Euros) per year, the next highest after dementia among neurological disorders.

View IASP Factsheet on Headaches

The typical medical treatment of headaches and migraine headaches is the use of pain killers of one kind or another.

In terms of causes, there are probably more potential causes of headaches than any other single condition. However, here are the most widely appreciated causes: dehydration, tension & stress, food reactivity (to nitrates for example), changes in sleep or lack of sleep, poor posture, and skipped meals. None of these seemed to apply to J.K.

J.K. has taken hundreds and hundreds of pain killers in her life, and is now aware of the potential negative side effects of these, so in the past few years has done her best to only take them when absolutely necessary.

Key Words. *Provide 3 to 8 key words that will help potential readers search for and find this case report.*

Headache, pain, aches, migraine, twitching, nerves, neurological, tension.

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

Mrs J.K. attended my clinic with the aim or being able to identify a nutritional link to her persistent, life-long headaches as well as for her painful right shoulder which had not responded to physiotherapy, and her nerve twitches and her limb pains.

J.K. had put up with headaches and migraine headaches since she could remember, and she could not recall a time when she did not have them as a child but she considered they became worse after menarche. Her mother could not recall the exact time that the headaches started, and there were so many challenges with simply getting by in life in their household in the suburbs of a large Indian city (Delhi) that this did not stand out so well in the memory.

Their frequency had always been regular and sometimes they were worse than others, with at least one bad attach each month, but not correlating with her menses.

Two years previously, her right shoulder became painful and it had kept her awake. Her energy reduced as a result, on top of bringing up two young children aged 4 and 2. She had been given muscle relaxants and the shoulder eased and it only returned a year later, when the same medications made no difference. At the same time, other symptoms and signs appeared. She began to experience nerve twitches in her left arm, a peculiar vibration in her right ankle, and a right hip pain. She also had random pains in her legs and arms, in the muscles, which would be quite sharp pains and these moved around her body. There was no particular clustering of symptoms but her headaches were definitely more intense with the right shoulder and right trapezius muscle tension.

After receiving physiotherapy and it being ineffective, she decided to explore something nutritional, as she had read that gluten could contribute to many varied symptoms. At the time we met, J.K. had already avoided gluten completely for a month, without any change to her health in any way.

The quality of her life had lessened over the past year, and she was also very aware that she did not want to keep on using pain killers which were only palliative at best.

We spent over an hour together, with her husband present, and this time was much needed and proved invaluable as the case history details were discussed in detail. Towards the end of the first appointment the evidence came to light that helped to steer the direction of the intervention, and it was this intervention that proved to be life-changing.

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.*

J.K. was 35 when we first met. She is 5 foot 4 inches tall, weighs 9 stone 10 lbs. She was born in India and for the past 5 years has been a registered British citizen, having moved to the UK when she was 18 in 1998. She has two children aged 4 and 2. She is a full time mother, but plans to return to work, which was in an accounting administrative role within a large bank. She was always very good with numbers and qualified as an accountant.

J.K. suffered headaches about once a week, with one a month being more painful and requiring pain killers. The bad headaches lasted for 4 to 6 days and rather obviously reduced her well-being and her productivity. When she worked from the age of 22 to 31 she had always been under pressure due to her inability to function very well when she had the bad headaches. She was extremely long-suffering but had accomplished much in spite of the headaches.

In the past year, J.K. had suffered from an ongoing sore, aching and tense right shoulder. This amplified the headaches exacerbated the bad headaches. At the same time, she suffered from a distinct twitch in the nerves of her upper right arm, close to her elbow, and a fuzzy vibration feeling in her right ankle. She also had sharp pains in her limbs only, which moved from place to place. She suffered these every day to varying degrees.

She had sought medical investigation and advice but in spite of all the tests there was no other treatment other than the continued use of pain killers. She and her husband had discussed her health situation on many, occasions but had not been able to find any pattern of symptoms related to lifestyle, eating pattern, stress or the weather or environment. A cousin of hers had been a patient of mine and she suggested that J.K. seek my advice.

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.*

J.K.'s doctor(s) found no abnormality in her blood tests (haematology and complete blood count) or MRI scan, and the neurologist confirmed there was no neuropathy. The only therapy that J.K. had engaged in was a series of appointments with the physiotherapist for her painful and aching shoulder. This helped only temporarily.

None of J.K.'s large family suffered from headaches or migraines. Her mother had arthritis and her father had raised blood pressure which was controlled by medication. Both were overweight. Her brothers and sisters had minor ailments such as eczema, hay fever, and a few were overweight. There were no similarities between herself and any other family member, and she had tried to find something that could lead her to a cause and resolution of her headaches for years. At the same time, J.K. was stoic in her attitude which was probably linked to her childhood when feeding the family was the daily priority.

J.K. had tried drinking 3 litres of water a day for a week so see if this would make a difference. She had tried being gluten free for a month. She had avoided dairy products. She had avoided refined sugars. She had implemented these trials in a careful way but had not seen any improvement in her headaches.

She ate quite soundly in terms of variety and quality of food and had been a vegetarian since she was a young child. She did not consume any dairy products, nor eggs. She ate pulses and lentils and fresh vegetables and very rarely ate any processed or refined food. She had never drunk any alcohol. She did not drink coffee and she did drink tea every day.

After 35 minutes into the consultation, J.K.'s husband reminded her of how her headaches had gone away during her first pregnancy and virtually went away entirely during her second pregnancy. This made us all consider the influence of female hormones even though there was no pattern linked with her female cycle. We returned to her childhood and she told me that perhaps her headaches had been worse after menarche. This was then something to consider testing with a female hormone saliva test.

After 40 minutes of discussion, having read the questionnaires and health history in advance, I asked if she had seen the blood test results which had been conducted from time to time over the years. She replied "no" but then she said her doctor had said that her vitamin B12 was low in the blood test from over a year ago. She was told this was only slightly low, however, and no action was taken. I asked J.K. to obtain a copy of those results and send them to me, which she did after 3 weeks; her surgery was a little slow in providing them. They also sent the two previous results as well.

J.K.'s husband then pointed out that she had taken a pregna-care multi vit & mineral during both her pregnancies and we looked at their ingredients on-line there and then and they both contained vitamin B12 and folic acid. We all looked at each other without speaking for a minute as this sunk in; after all of the years of examining what could be causing her headaches here was a possible answer. A lack of vitamin B12. She had not eaten any animal products that contained B12 for years. It was interesting that she did not display other more classic signs and symptoms of B12 deficiency. Or perhaps she had an insufficiency of B12 rather than a frank deficiency?

Could it be that too low a level of this essential nutrient could have been a contributory factor, for all of J.K.'s life, to those headaches? I proposed that we await the evidence of the blood tests before proceeding.

A serum vitamin B12 level <180 ng/L may cause megaloblastic anaemia and/or peripheral neuropathies.

A Vitamin B12 level <150 ng/L is considered evidence of vitamin B12 deficiency. Follow-up with tests for antibodies to intrinsic factor (IFBA / Intrinsic Factor Blocking Antibody, Serum) are recommended to identify this potential cause of vitamin B12 malabsorption. For specimens without antibodies, follow-up testing of vitamin B12 tissue deficiency by measuring MMA (MMAS / Methylmalonic Acid [MMA], Quantitative, Serum) and/or homocysteine (HCYSP / Homocysteine, Total, Plasma) may be indicated if the patient is symptomatic.

Patients with serum B12 levels between 150 and 400 ng/L are considered borderline and should be evaluated further by functional tests for vitamin B12 deficiency. The plasma homocysteine level is a good screening test. A normal level effectively excludes vitamin B12 and folate deficiency in an asymptomatic patient. However, the test is not specific and many situations can cause an increased level. In contrast, an increased serum MMA level is more specific for cellular-level B12 deficiency and is not increased by folate deficiency.

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

J.K. was born in Delhi in 1980 into a large family, with 6 brothers and sisters. They lived in the suburbs of Delhi in just two rooms for the first few years of her life, and then as her father achieved more financial success, they moved into an apartment. As the years went by they were able to move into accommodation with more and more space, but far from spacious. J.K. thinks that she had headaches from when she was about 6 years old, but is not clear. She certainly had headaches from the age of 12 – 1992.

When she was 18 years old in 1998, having completed her exams, and done very well, the family moved to the UK, when her father accepted a job in London and was financially well enough off to support his large family, although 4 of his children had their own jobs in India at that time.

J.K. had headaches and migraine headaches every month, as has been described, and took pain killers every month for the disabling ones. She did not appear to suffer any specific side effects from the paracetamol and cocodamol tablets.

In 2004, when she was 24 years old she had the first of two MRI scans. The first was negative, as was the second conducted in 2009.

In 2010 she became pregnant with her first child and in 2011 she gave birth to her first daughter. It was during the pregnancy that her headaches did not occur and it was put down to the hormonal changes.

J.K. had blood tests conducted before both pregnancies, we had sight of these 3 weeks after we first met. The levels of the serum vitamin B12 in the 3 tests that we had were as follows: 240 ng/L (2010), 220 ng/L (2013) and 210 ng/L (2015).

A few months after her daughter was born the headaches recommenced in gradual fashion then with the same frequency as before. They continued as they had done until she became pregnant again in 2013. She gave birth to her 2nd daughter in 2014 and again, a few months later the headaches reappeared.

It was in 2014 that her right shoulder pains and aches, and the trapezius muscle tension occurred, making the headaches all the more uncomfortable. The muscle relaxants worked after 20 days and the shoulder pains disappeared for almost a year.

In 2015 the shoulder pains re-emerged. This time the twitching in her left arm started shortly after the shoulder problems, along with the right ankle vibrations. She also had daily intermittent limb pains in her arm and leg muscles which occurred at different times to the twitching left arm.

Some months later in 2015, she sought advice from her GP about the newly presenting pains. He had a blood test conducted, the one that showed the low serum vitamin B12, who had referred her to the neurologist and he confirmed that there was no neuropathy involved. No one discussed the possibility of vitamin B12 being involved.

For almost a year, J.K. suffered from headaches and the other symptoms without relief, making her life more challenging as she looked after her young children. They had sought the medical help and the medical tests showed nothing wrong, but she still had the headaches, pains and twitches. The conversation with her cousin led her to seeking an appointment for nutritional therapy advice.

I learned from J.K. that the longest she had spent with any medical practitioner was 15 minutes and none of them read her health history nor asked her questions about it. They had been attempting to find the disease from which she suffered without exploring the possible aetiologies (my words). The details which revealed the route to resolution lay in the case history and were highlighted in blood tests already in her file, but no one had appreciated the fact that even if there was no peripheral neuropathy that a borderline low serum B12 level could contribute to nervous system symptoms, headaches and random muscle pains. I too had not been aware of this possibility, although the instant I knew about the low serum B12 levels I believed there was a strong connection with at least some of J.K.'s symptoms.

In this case, I spent at least 30 minutes reading the case history notes and questionnaires before the first meeting, and then spent 70 minutes with the patient. This is the nature of a functional medicine approach that Nutritional Therapists employ on a daily basis.

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*.

It was frustrating to wait for the blood test results to be sent through via J.K.'s surgery. As soon as the blood tests were received we arranged to speak on the phone. We agreed that a sensible therapeutic approach would be to correct the vitamin B12 status, and that J.K. would ask her doctor for a vitamin B12 shot.

The doctor could not help since the blood levels were not below the reference range to support such intervention and they were not current tests. He recommended a repeat test. This was conducted and we had the results back in a further week. Now, it was over 4 weeks after the first appointment with no action or changes having been made.

The new results were the same the previous results, at 210 ng/L. This did not warrant a referral for a B12 shot according to her doctor.

We spoke again and agreed to proceed with oral vitamin B12 support and to monitor her progress accordingly, with a follow up planned for 4 weeks later, some 9 weeks after we had first met.

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).*

J.K. was a committed vegetarian and therefore the only way that lay open to us without recourse to a private doctor to administer B12 shots was oral vitamin B12 supplementation. J.K. and her husband and myself felt that this was the first course of action, although we did not know what would happen and how long it would take for J.K. to feel any benefits.

I decided to use two different forms of B12 supplements, even though the pregna-care supplement had only used hydroxycobalamin, a non-active form. I chose a sub-lingual form in a lozenge and a methyl-cobalamin form combined with folic acid and Tillandsia extract, which appears clinically to have a synergistic effect on the actions of B12 and folic acid, although the mechanisms are not understood.

I also recommended a specific supplement to help support GI integrity to help protect J.K.'s gut from the pain killers.

First Supplement Programme	Dose
B12 2000 Lozenge (BRC)	1 lozenge sucked a.m. and p.m.
B12 Folate Plus (BRC)	2 with each meal (6 per day)
IPS Caps (BRC)	3 at the start of each meal (9 per day)

J.K. and I met a month after she started the three supplements. She was accompanied by her husband. She reported that her twitching had resolved after two weeks, as had the ankle vibrations. The limb pains had reduced in their intensity, and her headaches had also reduced too, especially by the fourth week. This mirrored what had happened in her pregnancies although on those occasions the headaches had been the only complaint.

In short, J.K.'s symptoms had reduced by 80% in 4 weeks.

J.K. did not allow herself to believe that the headaches could be a thing of the past. Her husband was cautiously optimistic.

We agreed to meet again in 6 weeks' time, and whilst serum B12 is not the most accurate test for the status of this nutrient, we agreed that she would ask her GP to repeat the blood tests.

Second Supplement Programme	Dose

B12 2000 Lozenge (BRC)	1 lozenge sucked a.m.
B12 Folate Plus (BRC)	2 with each meal (6 per day)
IPS Caps (BRC)	3 at the start of each meal (9 per day) on the day when pain-killers are taken

We met 6 weeks later and J.K. arrived with a copy of the blood test in hand. The results were 750 ng/L. Her physical symptoms were completely resolved. Her headaches were significantly better. She had not had one for three weeks. Her shoulder was so much better, with the tension completely gone.

We agreed to speak in a further 4 weeks to confirm the progress made. I decided to reduce the B12 doses

Third Supplement Programme	Dose
B12 2000 Lozenge (BRC)	1 lozenge sucked a.m. on Monday, Wednesday & Friday
B12 Folate Plus (BRC)	2 with breakfast & dinner (4 per day)

We spoke 4 weeks later and J.K.'s benefits has been maintained, and she was thrilled and could not believe that she now led a life free of headaches.

As I write this, a few months beyond this time, J.K. remains free of headaches. The physical symptoms are long gone.

It seems so simple, that a single nutrient could result in such improvements, and it was the confluence of case history information combined with the blood test results, referred to in the first 40 minutes that made for a compelling direction for J.K.

I do not know what I would have done if J.K. had not told me about the previous blood tests, but vitamin B12 was written on the mind map I had prepared, along with vitamin B2 and CoQ10 and magnesium, all of which have been shown to be involved in migraine headaches (a lack of them) and also vitamin B1 and magnesium were written linked to the muscle twitches and muscle pains. So, it is likely that I would have recommended testing to rule out insufficiencies of these nutrients, and perhaps we would have found imbalances in more than just the B12.

Supplement Information

B12 2000 Lozenges (BRC)
Provides 2,000 mcg of hydroxycobalamin, with 800 mcg of folic acid (calcium folinate), & with 2 mg of p-5-p.

B12 Folate Plus (BRC)
Provides 4 mcg of Methylcobalamin with 200 mcg of and 250 mg Tillandsia extract (Spanish Moss).

I.P.S. Caps (BRC)
Provides L-glutamine, glucosamine, gamma oryzanol, glutathione, lamb intestine concentrate with epithelial growth factor, & Tillandsia which contains many vitamins, minerals and other compounds such as coumarin and resins that support healthy intestinal mucosa.

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
The existence of blood tests showing the lower than ideal vitamin B12 was very helpful and built on the picture that had been explored and was represented by the associated Mind Map (a visual representation of the matrix). The ability to spend sufficient time to explore the whole case and the background of J.K. led to a relatively straightforward decision to pursue the B12 issue.

We did not have an active B12 test nor an MMA (methylmalonic acid) and nor a homocysteine test to help verify the low B12 status, but these were not of specific concern. The experience of no headaches in pregnancy whilst on a low dose B12 supplement helped to support the congruency of the initial intervention.

The literature relevant to this case report
Headaches are not a classic sign of a lack of B12, although nervous system symptoms are. Whilst she did not have peripheral neuropathy, and this may have misled those searching for a pathology, the lower than ideal serum B12 helped support the strong possibility that a functional deficiency of B12 was involved in her headaches, and probable her other symptoms as well.

The rationale for your conclusions
The logic was powerfully persuasive. Vegetarian foods for life, headaches for life, low levels in blood test and resolution with supplementation in pregnancy all added up to a reasonable indication for the B12 oral intervention.

The main findings of this case report: What are the take-away messages?
Two things stand out in this case for me. The amount of detail examined and discussed with the patient and her husband and the time spent engaged in the process together combined with the belief structure that states that there is biological cause of the symptoms in the patient in front of me.

I have confidence that given the information available, or with fresh testing of nutrient status, that the majority of NTs would have identified the very same thing as I did, which is testament to the model of what we now refer to as functional medicine, but has roots in naturopathic, wholistic medicine.

Almost all other patients have more complex cases that require multiple points of intervention and much slower positive outcomes, and as such require a broader range of skills than are demonstrated in this case. This is an example, however, of what can get missed by pathology screening, as well as how important vitamin B12 is in human health.

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.

It's beyond believable for J.K. that she has no headaches any more. She lives each day with a renewed appreciation of her life and good health, but even weeks without the headaches she has fast become accustomed to their absence, which she cannot understand. Part of her wants to build a daily monument in her hallway to remind her of the past suffering and another part wants her to forget the suffering and the expectation that she would have them for the rest of her life. I am quite certain the latter will be the case.

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. J.K. 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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