Live Case Recordings #1 - Case Review Part One

Chris: We've got a lot to cover today, so I think we'll just start right in unless you have any updates you want to give me, any major changes since we talked last.

Christine: No, and I think I put everything in the questionnaires.

Chris: Okay, great.

Christine: That was pretty thorough.

Chris: Okay. Fantastic. That is how they're designed. I'm going to start by reviewing the patterns I identified in your blood work and paperwork, and then we'll talk about recommendations for further testing based on that, which aren't many at this point.

Christine: Okay.

Chris: Since you've already done so much testing, and there may be more in the future, we'll talk about the first phase of the treatment plan, which is what we'll do between now and when we have our first follow-up appointment.

Christine: Okay.

Chris: You can ask me any questions you have along the way, and there will be a chance for you to ask questions at the end as well.

Christine: Great. Okay.

Chris: Okay, so let's start with the blood work. Your fasting glucose was 92, which is okay. It's starting to creep up a little bit, but your hemoglobin A1c, which is a three-month average of blood sugar, was elevated at 5.9. Your triglycerides were a little bit elevated at 181. Those are out of the lab range, and your LDH was a little bit low. Your AST and your ALT were not out of the lab range. These are liver enzymes, but they were a little bit elevated out of what I would consider to be the optimal range. When you put all that together, it suggests that there may be some blood sugar or metabolic issue. That is something we're definitely going to focus on. It may not be the initial thing that we focus on because I want to see how some of the other issues that we have identified might be contributing to those metabolic issues before we address them directly.

Christine: Okay.

Chris: But that is something that we're going to come back to for sure.

Next is low creatinine at 0.56. This is laterally 1/100 of a point out of the lab range, which is 0.57 and up, so we're not talking about a major issue here.

Christine: Okay.

Chris: What may be the case here is slightly low muscle mass, and that is one of the most common causes of low creatinine. It could be that a decrease in physical activity that you've had given what you've been going through and the disease itself have resulted in slightly lower than typical muscle mass.

Christine: I know that's something that really hurts.

Chris: Right.

Christine: My past, as you saw on my questionnaire.

Chris: Yeah, that's a concern. Moving on, your homocysteine, which is a marker for methylation, is a little bit elevated. As we'll see in another lab result that we look at, the cause of that is active B12 deficiency. That is significant because B12 deficiency can mimic some of the symptoms of MS. I'm not suggesting that correcting your B12 levels will cure the MS, but it could make a difference given that the symptoms overlap.

Christine: Okay.

Chris: Let's see. A few more issues on the blood tests. Your parathyroid hormone levels were low at 4. Have you ever had those tested before that you recall?

Christine: No.

Chris: Okay. Hypoparathyroidism, which is the decline in parathyroid hormone, would also typically cause low calcium and high phosphorus in the blood. We don't have a phosphorus level for you, but we do have calcium, and it is normal. Given that the parathyroid hormone is low, well below the range—it should be 15 and up, and you're at 4—I want to do some additional testing to rule out hypoparathyroidism.

Christine: Does that have anything to do with weight gain?

Chris: It could. Parathyroid hormone, it's not directly related, but it could be related. What we're going to do is retest parathyroid hormone, but we're also going to do a test called ionized calcium, which is a more accurate way of measuring calcium levels in the blood, and then we'll go from there. If PTH is still low, and ionized calcium is low or on the lower end of normal, then I'll either

refer you to an endocrinologist, or we'll do further workup to see if that is an issue that could be contributing here.

Christine: Okay.

Chris: Let's see. What else in the blood work? Your ferritin levels were a little above what I would consider optimal. The most likely cause of that is inflammation because your iron levels are all normal. Ferritin is the long-term storage form of iron, but it can also be elevated in the inflammatory response, so I think that is what's probably happening there. You have some markers of metabolic dysfunction. Your HDL is low, and your triglycerides are high. Then your total cholesterol-to-HDL ratio is a little bit above what I'd like to see. Your triglycerides-to-HDL ratio is a little bit above what I'd like to see as well.

Your C-reactive protein is also a little above the optimal range, and that is consistent with the higher ferritin and the inflammation. There are a number of things that are all pointing in the same direction with the blood work.

Christine: Okay.

Chris: Your red blood cells, hemoglobin, and hematocrit are all a tiny bit high, and the most likely cause of that is dehydration. Are you aware of your fluid intake throughout the day?

Christine: I drink a lot of water.

Chris: Interesting. Do you urinate more frequently?

Christine: I urinate a lot and drink at night two or three times.

Chris: Okay.

Christine: Pretty much the only fluid I drink is water.

Chris: So that may be something that we just want to keep an eye on given the metabolic dysregulation. There may be something happening with kidneys. It's not showing up in your blood work. Your kidney function markers were all normal, but given the markers for dehydration in spite of your significant fluid intake and your frequent urination, that's something we'll want to keep an eye on as we go forward.

Christine: I start the day with like 12 ounces of water. I just drink it during the whole day.

Chris: It sounds like it's not a question of how much you're drinking. It's probably more a question of kidney function and/or excess urination, which often is related to kidney function.

Christine: Okay.

Chris: That's the blood work. Moving on to the SIBO breath test, the lab marked that as positive, but I want to ask you a few questions that will help me determine whether I agree with that interpretation.

Christine: Okay.

Chris: I know that in the past you've more had a tendency toward constipation than frequent stools, right?

Christine: Yes.

Chris: Was that also the case around the time where you took this test?

Christine: I have it all the time, and I take 750 mg of magnesium every night for that.

Chris: Right. And does that help? Does it lead to a regular bowel movement daily, or do you still sometimes skip days?

Christine: No, I don't skip days with that. That keeps me regular. If I do not take it, I become very bound up.

Chris: Right. Okay. The way this test works is you take a baseline sample, and then you consume the lactulose solution. Then you do the breath samples at 20-minute intervals. The idea is that if you see an increase in hydrogen or methane before 120 minutes or two hours, that is indicative of small intestine bacterial overgrowth. The idea is that lactulose is still in your small intestine for that 120-minute period, so if you see any increase in hydrogen, it is bacteria that are in your small intestine. The problem with that is a lot of studies have shown that average transit time from when the lactulose is swallowed to when it enters the colon is actually anywhere from 60 minutes or even less to 150 minutes, so it can really range from person to person, and vary from person to person rather. What we saw with you is that there was an increase of 20 parts per million from the baseline sample to the sample you took at 120 minutes or two hours, but the question is, is the lactulose already entering your colon at that point? It very well may be because that's well above what the average is for most people. I would say that these results are equivocal. You may have SIBO. You may not. It's not clear with these results, but to some extent, it's a moot point, at least at this stage in the treatment, because there are other gut issues that we're going to talk about in a second that I want to address that would require the same protocol.

Christine: Okay.

Chris: So, we will address those, and then we may retest the SIBO as well as the other tests at that point and see where you're at.

Christine: Okay. I had a history of colitis and problems in my intestine.

Chris: Yeah, I do recall that. The stool tests, as we'll see, did reveal some issues that I definitely want to address. Let's see here. The stool test found low levels of beneficial bacteria. Your Lactobacillus and Bifidobacteria were at 1+, which we would like to see those at 3+ or above optimally. You had no growth of E. coli, which is a beneficial kind of E. coli, that is. Then further on the test results, you had secretory IgA, which is a marker for gut inflammation or gut immune activation. Then you had a low level of butyrate, which is an important anti-inflammatory short-chain fatty acid that is produced in the colon, and it's made by Bifidobacteria and other beneficial bacteria, so it's not surprising that is low because you had low levels of Bifidobacteria.

You also had a positive for occult blood in the stool, but I'll tell you that I don't really trust this marker on Doctor's Data, so I'd like to do a follow-up test for occult blood with LabCorp to see if that is actually occurring. Nine times out of ten, it's not. It's a false-positive on the Doctor's Data, but given that blood in the stool is potentially serious and something we'd want to know about, I'd like to do a follow-up with LabCorp just to be sure.

Christine: Okay.

Chris: Let me just add that to your chart here. One second. On the BioHealth stool test, they picked up H. pylori, which is an intestinal infection that is associated with ulcers, but it also can cause chronic inflammation and a number of other problems. That is something we definitely want to treat. There is an association between H. pylori and a whole bunch of other chronic modern inflammatory diseases. I haven't checked on an association between H. pylori and MS, but I wouldn't be surprised if there is one. It's associated with cardiovascular disease, diabetes, all kinds of skin inflammatory conditions, and a whole bunch of other inflammatory issues like I mentioned.

We move on to the urine organic acids panel. There is quite a bit that showed up there. One thing was the B12 deficiency, which I mentioned before with the homocysteine and impaired methylation. B12 and folate are the nutrients that are required for methylation, so that is what is causing that. It may contributing to your symptoms given the importance of B12 for the myelin sheath.

Christine: You know I take B12 sublingually every morning. I take two. Instead of 10,000, I take 20,000.

Chris: That's what is interesting to me that this is still showing a deficiency even in spite of that. That's methylcobalamin that you're taking?

Christine: Yes.

Chris: That is interesting. You can see the exact value here. You're at 2.0, and the cut point is 1.5. That is optimal. We may want to try adenosylcobalamin, which is a different form of active B12 in addition.

Christine: I do have that too, and I do alternate those two.

Chris: Oh, you already are doing that?

Christine: Yes.

Chris: And it's sublingual, so that would seem to get around any absorption issue. That's puzzling. The adenosylcobalamin, is that 10,000?

Christine: Yes.

Chris: That's the product I'm familiar with. So you do a day of that and then one day of the methylcobalamin?

Christine: Right.

Chris: At 20,000 you said?

Christine: 20,000 each. Yes.

Chris: Okay. That is interesting. I'll have to check into that because off the top of my head it's not clear what mechanism would be at play there, since the sublingual route is bypassing intestinal absorption, which obviously could be impaired with the H. pylori and other stuff that you have going on. Have you always done sublingual therapy, or have you tried injections in the past?

Christine: I've never had injections. No, I've always done sublingual.

Chris: If you look at the research, the studies mostly suggest that sublingual is equivalent to injection, but I have had some patients who just don't get the same results from sublingual that they do from injections. So that may be something that we want to consider, at least once, to see if you notice any difference.

Christine: That would be my energy, right?

Chris: Energy but also muscle function because the nerves innervate that and cognitive function for sure. That's probably worth trying at least once to see if you notice any difference.

Christine: Okay.

Chris: Next, you had about seven markers of impaired central energy production. All energy is produced inside of the cell, and you have—actually it's more than that. You have nine or 10 markers of impaired cellular energy production and mitochondrial function, so that explains your fatigue.

Christine: Well, MS. And that's the MS, right?

Chris: That is definitely correlated with MS. You've got that right. Now, the question is, for me, what is impairing the mitochondrial function? There are several possibilities. One is that it is some of the stuff we've already identified: the H. pylori, the gut dysfunction, and some of the stuff we talked about on the blood work. It could also be heavy metal toxicity, which I know we're looking into. It could be mold or biotoxin-related illness, and I'll come back to that in a second. Mitochondrial dysfunction is usually secondary to something else. Certainly there is genetic predisposition, but it's usually some environmental factor that causes the mitochondria into dysfunction, so that's what we want to figure out. That's why we're not going to start off with giving you a bunch of supplements for mitochondrial function, although at some point we may want to pursue that as a way of improving your symptoms, but initially, I want to try to identify and address all of the potential causes of the mitochondrial dysfunction.

Christine: Okay.

Chris: That's what the further testing would be oriented around and the testing we already have ordered. Also, on the organic acids panel, there were markers for impaired neurotransmitter metabolism. That is often related to gut because there is more serotonin in the gut by far, 500 times more serotonin in the gut than there is in the brain. A lot of these markers here, quinolinate being high is an inflammatory marker. Acholinate being high is also an inflammatory marker, so that's kind of the gut-brain axis there that those markers are a reflection of.

You had a marker for oxidative stress, a few markers for impaired detox capacity including glutathione deficiency, and then a marker for intestinal dysbiosis.

Mostly the organic acids panel is definitely giving us some good insight into what is going on pathologically with the mitochondrial dysfunction, oxidative stress, impaired detox, and B12 deficiency. It's also supporting some of the things we've already discovered in the other tests such as the dysbiosis.