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The Complexity of Early MS Diagnosis

Announcer:
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Dr. Freedman:
Hello everyone. My name is Mark Freedman. I'm a Professor of Neurology up at the University of Ottawa in Ottawa, Ontario, Canada, as well as a Senior Scientist at The Ottawa Hospital Research Institute. And I'm joined today by my friend and colleague, Dr. Bianca Weinstock-Guttman. Why don't you introduce yourself, Bianca?

Dr. Weinstock-Guttman:
Hello, Mark. I am Bianca Weinstock-Guttman. I'm a Professor of Neurology at the Jacobs School of Medicine and Biomedical Sciences at State University in New York, and I'm the Director also of the Jacobs MS Center for Treatment and Research from Buffalo.

Dr. Freedman:
Well, thanks so much, Bianca. We're going to discuss today how you go about diagnosing patients with MS. So, these days, people are sending us patients from all walks of life. And it's really important today with a whole bunch of other things that can look like MS, that we make sure that that label of MS is appropriate. We don't want to mislabel anyone for obvious reasons. So, how do you go about – what's your process about eliminating, of course, the other things that could look like MS? Which is today, the first order of the McDonald criteria, which I might add, are probably going to change in 2024 with the new guidelines or diagnostic guidelines that are going to come out. But nevertheless, the first order is always no better explanation. So, how do you go about doing that?

Dr. Weinstock-Guttman:
Okay, so we all know that for the last two decades, we have the McDonald criteria that included MRI benchmarks for the diagnosis of MS. And from the 2017, we including also the oligoclonal bands in the spinal fluid to support the diagnosis of MS, when primarily to support the dissemination in space and time. The most important though, when I'm seeing a patient sent to me with a possible diagnosis of MS, is to try to see if they really had an event or specific demyelinating event, meaning optic neuritis, partial transverse myelitis, or any brainstem event. Right? Which is double vision, off balance, and so on. And that's the primary consideration when we're trying to triage when the patients are sent to us. Everyone I think at the MS centers have a lot of patients sent, and we have to be sure that we're taking the patients that are mostly supporting a possible diagnosis of MS.

MRI is very important to define, as we know we have specific characteristics of and requirements for MRI-based diagnosis with specific location, shape, and based on the McDonald criteria. Most of the patients that do not fulfill the criteria are probably having an MRI with nonspecific lesions and not, as we know, the specific area that – location based on McDonald criteria, the periventricular or cortical, juxtacortical, infratentorial, and spinal cord, but many times they may present with nonspecific white matter lesions into the hemispheres, very small, and may have superimposed comorbidities as headaches, hypertension, diabetes.

However, at the same time, I think that it's very important for us to be sure that – and we know about the so-called radiological syndrome, and where we see only MRI findings highly supporting as we see in the McDonald criteria, but the patient is having the MRI

only for headaches or for any other nonspecific criteria, as including in MS or any head trauma, or coming on for research meetings or research MRI evaluations. At the same time, we have to consider that many of MS patients do have more headaches than the general population. So, we have to keep in mind we do have this diagnosis of radiologically isolated syndrome, and we have to monitor this patient that is also a consideration yes/no therapy and this will be probably a different discussion. And sure enough on the differential diagnosis or the other inflammatory diagnostic, as the neuromyelitis optica or the MOG-associated disease, that we know they are different than multiple sclerosis. They do have today, specific biomarkers to help in diagnosis. And it's very important to make the differentiation between MS, because the therapies are different.

So, it's, as we said, we're very pleased to have all these McDonald criteria that really provided a much earlier diagnosis. Therefore, we can start the treatment much earlier and that's shown to have a much more control on the disease. But at the same time, as I said, MRI can be not well evaluated and bring on misdiagnosis. So, as mentioned, it's very important to have, from a clinical standpoint, the clear presentation when we make a diagnosis for the demyelinating event. And second is to follow those specific criteria from MRI standpoint, to fulfill the diagnosis.

About the spinal tap, I'm sure that you, Mark, you're doing a lot of spinal taps. I think in our clinic if the patient is clearly presenting with clear clinical definite presentation, as I already mentioned, demyelinating event, and with MRI supporting the diagnosis, we're not going all the time to have a spinal tap. If it’s a more atypical presentation, we are going for a spinal tap.

Dr. Freedman:
Okay, so I was going to ask you about the spinal tap, but it is ancillary information; not only does it show the signs of disease, and now people are talking about kappa free light chains, it's even easier to do than oligoclonal bands. But you know, I always say that the spinal fluid is there not so much to make a diagnosis of MS, but to rule out some of these mimics that are so important to eliminate from the possibility that they're causing MS and you can get signs from that the spinal fluid. If your patient had an optic neuritis, and maybe they don't have it anymore, but they've got a history, do you get the ophthalmologist involved at all? Do you do any visual tests on these patients?

Dr. Weinstock-Guttman:
We are very lucky and fortunate that we have a neuro-ophthalmologist with us. Often, optic neuritis actually when the patients come in to see us, they already saw an ophthalmologist and, as you know, an optic neuritis patient doesn't see much and the physician doesn't see much. But we do have an OCT, optical coherence tomography machine, in our center and we're doing this, and we have also our neuro-ophthalmologist. So, we do have a very specific testing for evaluating, yes.

Dr. Freedman:
Okay, especially you mentioned MOG and NMO and that OCT sometimes can pick up things that indicate that you're dealing with that condition versus multiple sclerosis. So, it's really important to bring in the other people to assist us and be absolutely sure we're dealing with MS and nothing else.

Well, you know, I thank you for being so thorough in your discussion about diagnosis today, and I want to thank all our listeners for tuning in. Thanks a lot, everyone.

Dr. Weinstock-Guttman:
Thank you.

Announcer:
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