83| Neuropsych Bite: Clinical Case 4 – With Dr. Ryan Van Patten

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Speakers: Ryan Van Patten, John Bellone

Intro Music 00:00

Ryan Van Patten 00:17
Welcome, everyone, to Navigating Neuropsychology: A voyage into the depths of the brain and behavior, brought to you by INS. I'm Ryan Van Patten...

John Bellone 00:25
...and I'm John Bellone. Today we have Ryan's second clinical case presentation. There are several caveats and limitations that come with these presentations. We

don't want to repeat them with each new episode, but if you'd like to hear them, you can listen to the beginning of episode 77 and 79. And, with that, we give you today's clinical case presentation.

Transition Music 00:46

Ryan Van Patten 00:55
Okay. This is a right-handed, White woman, in her early 70s. She was born and raised in the US and a monolingual English speaker. With 12 years of education. She had worked as a server in a restaurant and she had been retired for about 10 years when I saw her. Her marital status was single with one 51-year-old son. She was referred by a social worker for a neuropsych evaluation due to concern of cognitive decline.

So I reviewed her medical records and the patient and her son both participated in a clinical interview. In terms of background, the patient had noticed memory decline for about one year, while her son had noticed it for the last five years or so - discrepancy there. She's forgetful. She has trouble following simple verbal instructions. She becomes easily confused, such as if she needs to follow multi-step instructions or when she tries to recall certain dates and timelines. Her son stated that she experienced "a lot of cognitive loss". The patient reported that her recall is intact for the gist of movies and TV shows and recent conversations.

Her basic activities of daily living were all intact. Her son was paying her bills online for her. Her son was also reminding her to take medications on time. I noticed in the clinical interview that the son expressed a very high level of interest and involvement and his mother's daily functioning. He was calling her multiple times per day. And it really wasn't clear whether or not she would be able to do some of these tasks, like paying bills or taking medications accurately, without his assistance because he offered it so readily. She was cooking and cleaning for herself; she denied any safety concerns in that area. She had stopped driving about one year earlier because of safety concerns related to poor visual acuity, especially her peripheral vision.

Her medical history was remarkable for self-reported hypothyroidism. This had been diagnosed by a physician years earlier with no follow-up or treatment that they knew of. Both the son and the patient recall this diagnosis so it seemed to have happened, but no additional details were available and she had no current primary

care doctor. Other medical background - her gait and balance were intact. Her hearing was intact. And no other neurological or medical issues that she reported. She had no trouble with sleep initiation or maintenance, but several years prior she had been diagnosed with sleep apnea and prescribed a CPAP device. She had tried to use it a few times but, as with many people, she discontinued it due to discomfort. Her son had stated that her snoring, which was present, had decreased in recent years based on his experiences when visiting and staying with her. She reported mild variable daytime fatigue. For example, she would sometimes fall asleep when reading in her recliner in the afternoons.

In terms of her mood, she reported a fluctuating mood to some degree with occasional transient depressive symptoms. No past or current suicidal ideation. She also reported experiencing pretty high levels of generalized anxiety and worry daily. And she had been diagnosed with hoarding disorder, which appeared to be ongoing based on the report. In terms of her psychosocial and cultural background, she had strong social support from her son and neighbors. And several areas of her background were unremarkable from our perspective - no developmental history, no learning disorder or ADHD, no family history of neurological or psychiatric illness, and no problematic substance use.

So that wraps up the background. Any questions, John?

John Bellone 05:01

No, that was a good overview of the background. I know you've done some work with patients with hoarding where you've actually gone in the home. Was this that type of evaluation or was this in clinic?

Ryan Van Patten 05:12

This was in clinic. But, you're right. Sometimes people with hoarding disorder live in rural areas, sometimes they have trouble with transportation. And so sometimes neuropsych evaluations are done in or around the home of people with hoarding disorder such as her. This was not one of those.

John Bellone 05:29

Right. You can imagine how it would be beneficial to see someone's home environment if hoarding was potentially an issue. I've also done some home-based neuropsych evals, which is always fascinating. You get to see exactly how the patients manage their medications and what their homes look like and see them

functioning in their actual environments. It kind of gives more information to the picture.

Ryan Van Patten 05:55
Yeah, there's some ecological validity there to see what they look like in their real world. We get a little bit of that with teleneuropsych. We can at least get a picture of them in their home. You know, it's not quite like being there, though. Especially for people with hoarding disorder where there's a lot to assess and look for in their homes when there's a lot of clutter.

John Bellone 06:13
Right. And you have to just kind of modify the evaluation depending on what the environment is like. I've done some assessments on the couch because there are no tables available in the person's home. So...

Ryan Van Patten 06:25
Yep.

John Bellone 06:26
...it definitely is not the sterile testing environment that we're used to as neuropsychologists.

Ryan Van Patten 06:32
Right. Flexibility is the name of the game there.

John Bellone 06:34
Yes. Okay. So, since this was in clinic, can you give us the behavioral observations? And then we'll talk about the test results as well.

Ryan Van Patten 06:43
So I mentioned that she had some visual acuity issues related to driving, but for the purposes of the neuropsych eval her vision was adequate. Her engagement was good during testing, and the interview rapport was good. The main observation that I made was about the dynamic between the patient and her son in the clinical interview, where he was very involved. He appeared to have the best of intentions and I think he really was helping his mom out, but during the clinical interview sometimes I would address her with a question and he would jump in and answer. He was pretty directive with her at times - a little short and irritable with her at times.

And so I just took note of that in terms of their dynamic and what that looks like on a daily basis. Other than that, behaviorally during the interview and testing, there was nothing remarkable.

John Bellone 07:33
Okay. How was her affect?

Ryan Van Patten 07:36
Affect was good throughout the entire clinical interview and testing. Nothing notable, behaviorally, there.

John Bellone 07:42
Alright, great. Why don't we talk through the test results?

Ryan Van Patten 07:45
So important to keep in mind here is that this battery was shorter than what we might sometimes give to a person in an outpatient context, just due to aspects of the situation. It was about a 60-70 minute cognitive testing battery. We could call it a screening battery if you want to be extra cautious. In terms of embedded performance validity tests, all of those were passed. Her estimated premorbid functioning from a test of single word reading was in the average range. Attention span, working memory on Digit Span and Letter-Number Sequencing, were all average. In terms of processing speed, Trails A was exceptionally low - she completed it in 86 seconds, with one error. But WAIS Coding was average. Language, confrontation naming and semantic fluency, both in the average range. And visuospatial, visuoconstructional skills, judgment of line orientation, clock drawing in the average range.

Moving on, learning and memory. She completed the HVLT, measure of list learning, and Logical Memory, which is a narrative story memory task. On the HVLT, her learning was below average across three trials - 4, 5, and 5 words. Delayed recall was only low average. She recalled 6 words, which is 120% of what she had learned. So retention was above average. Recognition discrimination was low average overall; she had some false positive and false negative errors. Logical Memory I was low average, and Logical Memory II was below average. So we will keep those scores in mind.

Phonemic fluency was low average. She generated 26 total words across three trials. Trails B had to be discontinued at 159 seconds due to confusion on the task -

she had made two errors at that point. She also completed the 64-card Wisconsin Card Sorting Task - that was in the average range. And her Geriatric Depression Scale was 20, which is severe. And that wraps up her cognitive testing.

John Bellone 09:57
Okay. So, just to summarize. So, there's a little bit of mixed performance across certain domains. Overall, it looks like we're seeing some difficulties in terms of memory and executive functioning. And then clearly the depressive symptoms are a big factor here.

Ryan Van Patten 10:16
Agreed. So moving on, I ultimately decided on a diagnosis of mild neurocognitive disorder. I landed there because she had multiple low test scores despite a somewhat short battery. And, as you mentioned, weaknesses in several areas of cognitive functioning - primarily learning and memory and aspects of executive functioning.

John Bellone 10:39
Right. Despite the fact that this was a fairly brief battery, she had quite a few below average scores.

Ryan Van Patten 10:47
Right. So I think we can confidently say that she scored lower than we would expect for her age and background. And so there's probably been cognitive loss that is more than we would expect for her age.

John Bellone 11:00
Yeah. That's important. I know listeners are probably thinking, "Well, this is the fourth mild cognitive impairment, mild neurocognitive disorder case we've run..." [laughs]

Ryan Van Patten 11:09
[laughs] That's all we do. Every patient we just diagnose MCI.

John Bellone 11:13
[laughs] Yeah, yeah. We promise we see people with dementia, we see people who are normal relative to others their age. And we'll bring other cases.

Ryan Van Patten 11:27
For sure.

John Bellone 11:28
MCI is quite a bit of what we do. So.

Ryan Van Patten 11:31
Yep. So a few other aspects of this case to keep in mind that I mentioned in my impressions and conclusions. She was not densely amnestic. So, for example, in the HVLT, her delayed recall score was 6 words, even more than she had initially learned. So there's not this rapid forgetting profile. Although in Logical Memory, the second trial, the delay was lower than learning. So her memory profile is mixed.

And as with previous cases we've talked about, I did not diagnose major neurocognitive disorder because she had not clearly demonstrated a decline in her instrumental ADLs. In this case, it was a bit unique because her son was so involved, even more so than average. And, in a sense, that's great. She probably could use some support. But it seemed like, in their dynamic, there were aspects of the relationship that may have been a bit unhealthy. The son seemed a bit paternalistic, as I had mentioned - answering for his mom, getting irritated with her. So, stepping back and looking at the psychology of this patient, I just wanted to take a note of that. At the same time, it's also relevant to the diagnosis. Since he was so enthusiastic and, you know, doing things for her, I couldn't know for sure that she could not pay her bills or take her medications on her own.

John Bellone 12:54

Yeah. And we've talked before about how my preference is to take a conservative approach in these cases. And rather than diagnosing dementia, I think especially in these cases where we're not quite sure about their instrumental ADLs and there's some evidence that they can manage it but maybe some evidence that they're having difficulties, I think the conservative and appropriate approach, typically, is the mild neurocognitive disorder.

Ryan Van Patten 13:19
Especially with only one evaluation where we're not yet able to track change over time.

John Bellone 13:24
Exactly.

Ryan Van Patten 13:24
If we can see them a second or third time and we are noticing a slope of decline, we can be a lot more confident.

John Bellone 13:30
Yeah. And she still has several areas of cognitive functioning where she's performing in the average range, too. I think we should keep that in mind.

Ryan Van Patten 13:40

Right. So another important aspect of my impressions section of my report would be cognitive contributors - like what's going on in her life, in the background, that might be explaining some of her cognitive difficulties. And I would list these as hypothyroidism, depression, anxiety and hoarding disorder, obstructive sleep apnea, and then rule-out a degenerative condition just in case that's part of the picture as well.

John Bellone 14:09

Yeah. Why don't we talk about a few of these one at a time? So, I want to highlight the hoarding disorder for a second because I know there's some literature regarding the cognitive profile of people - the typical cognitive profile, right, when you look at group averages - for hoarding disorder. You want to talk about that a little bit?

Ryan Van Patten 14:29

Yeah, broadly speaking, people with hoarding disorder compared to controls in research studies show a dysexecutive cognitive profile - so, there is a relationship. As with many neuropsychiatric illnesses, there is a relationship between the symptomatology of the illness and poor cognition. And, in this case, it seems like hoarding disorder is related to dysexecutive symptoms. Some people think about this as helping to explain the hoarding itself. Like the person has trouble with organization and planning. And the clutter that reflects the hoarding disorder in their environment, in their home, is partially explained by their cognitive symptoms. Of course, there's anxiety and so called psychiatric, or traditional psychiatric symptoms, that are playing an important part as well. But we would expect difficulty with tests of executive functioning.

John Bellone 15:24

Yeah. And so in this case, it's a little bit mixed, right? Because she had significant difficulty - for example, on Trails B you had to discontinue the task - but she did okay on the Wisconsin Card Sorting Test, a kind of problem-solving flexibility test. So this is, you know, not maybe the typical profile that you'd expect for someone with hoarding disorder.

Ryan Van Patten 15:44

Agreed. And for listeners who are early in their training, this happens a lot. You know, we have an expected profile based on a psychiatric condition or disease and the cognitive test data often don't align exactly as we would expect. The real world is messy, and there's a lot going on. And it's really hard to measure executive functions. It's complex and heterogeneous. Our tests aren't perfect. So I wasn't completely surprised that my test data didn't align exactly with the group averages from studies, but I took note of it.

John Bellone 16:19

Yeah, I think that's reasonable. I think we should also mention that, you know, she came in with this diagnosis of hoarding disorder. So it wasn't your responsibility to measure the hoarding itself or dive too deep into that. But there are some measures that are used to assess the presence and severity of hoarding. One of them is the Saving Inventory-Revised and the other one is the Clutter Image Rating Scale. There are probably others. But these two I've seen in the literature. The Clutter Image Rating Scale is particularly fascinating because you actually show them pictures of different levels of clutter in a model home and they have to choose which picture is most similar to the level of clutter in their home. And it gets pretty extensive, some of the pictures. [laughs]

Ryan Van Patten 17:13

Yes, it does. Yeah. That's a brilliant test design. I like it a lot.

John Bellone 17:18

So why don't we talk a little bit about hypothyroidism because that's another aspect of this case. And just to clarify, so this was per the patient's report that she had been diagnosed with hypothyroidism. And the son's report as well. This wasn't - I know you reviewed the medical records, but you didn't have actual data here, did you?

Ryan Van Patten 17:38

Correct. Yes. So she had no current primary care provider. Both the son and the patient reported that she had received this diagnosis from a doctor a few years earlier, but no other information. Nothing in the medical records. So I was constrained in that regard compared to if we have lab results and if someone has been treated, and so on.

John Bellone 18:00

For hypothyroidism, it's particularly important to know the levels.

Ryan Van Patten 18:03

Right. So, a brief review of hypothyroidism. The brain is an important target for thyroid hormones. And thyroid dysfunction can impact cognitive and emotional abilities, so it's very relevant to us. Hypothyroidism can be broken down into two categories. One is overt hypothyroidism, and here the person has high thyroid stimulating hormone, or TSH, and low free T4. Subclinical hypothyroidism is elevated TSH with normal T4. This distinction is important if you have lab results and medical records because with overt hypothyroidism there are some clear links to poor cognitive functioning, especially verbal memory and symptoms of depression, anxiety, and apathy. And, as you alluded to, John, treatment, for example with levothyroxine, can improve and sometimes even resolve the symptoms. So, broadly speaking, it's a relatively clear cut issue if the person has overt hypothyroidism.

The subclinical version is more murky. In this case, it might be associated with subtle problems in cognition and mood, the literature is mixed. So the picture isn't clear and levothyroxine does not reliably improve symptoms. Interestingly, symptoms in subclinical hypothyroidism are worse, on average, when patients know their thyroid status, which suggests that there might be an expectation effect. Similar to how we sometimes talk about post-concussive syndrome where somebody has this explanation and this anticipation, an expectation of deficits due to something that happened to them. Which isn't to say it's not real, but it's something for us to keep in mind.

With all that said, if she has overt hypothyroidism, for example, that could explain at least part of her verbal memory issues and depression, depressed mood and anxiety. So that was very much at the forefront for me.

John Bellone 20:10
Yeah, right. It's unfortunate that we don't know exactly what the levels are and that she's not being followed by a primary care physician, I guess. So just to summarize, it sounds like for us as neuropsychologists, our ears should perk up if we hear about overt hypothyroidism and that would be particularly relevant to our test data. The subclinical hypothyroidism sounds like it's a potential contributor, but less clear.

Ryan Van Patten 20:38
Exactly. So in this case with her, I felt like this could be low-hanging fruit. If she could get into a physician, get her thyroid measured, figure out where she lies on that continuum, and especially if it's overt hypothyroidism, get it treated, she could see big gains in cognition, memory, and mood. You know, relative to some of the other conditions or symptoms that some of our patients struggle with, this is relatively straightforward and amenable to treatment.

John Bellone 21:11
And the other big piece of low-hanging fruit here is the obstructive sleep apnea that's untreated.

Ryan Van Patten 21:15
Right. Yeah, we think about it as low-hanging fruit, right?

John Bellone 21:20
[laughs]

Ryan Van Patten 21:20
It's easy for us to say.

John Bellone 21:22
True.

Ryan Van Patten 21:22
But, I understand why we would think about it that way. As I mentioned, compared to some other conditions, like Alzheimer's disease, this can be treated. She had tried a CPAP. And, as for many people, she had some difficulty learning to use it and then becoming comfortable with it. So I recommended that she get reassessed for OSA. And, if she were to be diagnosed with it, that she receive detailed psychoeducation that, really, was person-centered and took into account where she

was coming from so that she could be sort of guided in use of her CPAP. So she could make friends with it, as Karen Postal says.

John Bellone 22:04
[laughs] Excellent.

Ryan Van Patten 22:06
I should mention, clinically relevant, whenever I'm doing a clinical interview with someone and it's possible that they may have sleep apnea, I always incorporate the STOP-BANG questionnaire. We talked to Mark Aloia about this. Just to remind everyone I'll run through - STOP-BANG is an acronym for risk factors for sleep apnea, where we have loud snore, tired, observed apnea, high blood pressure, high BMI, older age, wider neck circumference, and male gender. In her case, she didn't check many of the boxes. She was a woman, she was thin, she did not have high blood pressure as far as she knew. There was no observed apnea, although she did not have a bed partner. She did feel tired during the day. She did snore, although her son said it was getting better. And she was above a rough age cutoff of 50. So some risk factors, not all. At the same time, she had been diagnosed previously. So I recommend another sleep study.

John Bellone 23:17
Yeah, great. Okay, why don't we run through a couple of your other recommendations before we finish?

Ryan Van Patten 23:24
So we've covered thyroid and sleep apnea. Certainly, she reported some generalized anxiety and fluctuating mood. So I recommended consultation with a geriatric psychologist and psychiatrist to assess this in more detail and consider treatment - whether psychotherapy, medications, or both will be helpful for her. I also recommended ongoing support with instrumental activities of daily living. I won't say more about her relationship with her son, that was complicated, but I do think he was helping by being involved and being a support for her.

And I included compensatory cognitive training strategies for her. A few of those were habitual use of just one source of daily information, like a calendar to stay organized. Designating special places for commonly misplaced objects, such as a basket where she always puts her wallet and keys and phone. And also linking, which I don't think we've talked about before. I like to explain this to patients. It makes a lot of sense to me and I think it's a useful strategy. If there is some task

that I have to do tomorrow and it's out of the ordinary, it's not a habit, and I'm worried that I might forget because my memory isn't what it used to be - say I have to call my brother tomorrow morning - instead of just writing down a note and sticking it in a random place or hoping I remember, I identify a habit that I have in the morning, like maybe I make coffee every morning. And so I go to the coffee pot and I write the note and I stick it to the coffee pot because I know I'll be there every morning at the same time and then I know I'll see the note. So, I'm creating this link between a habit and a novel behavior that I need to do, that way I won't forget. It's not rocket science, but you'd be surprised at the benefit that people can derive from strategies like that. So those were the compensatory strategies. I also provided general brain health recommendations - sleep, diet, exercise. And reevaluation in about a year if symptoms progressed.

John Bellone 25:31

Great. Sounds like that was pretty comprehensive. Just one note that I was thinking regarding the recommendation to see a psychologist. Maybe, given some relational difficulties between the patient and the son, it might also be helpful to do some sort of family therapy. And the psychologist might find it beneficial to first meet with the patient, but then also incorporate the son in treatment as well. Maybe they can learn how to best work together because they're a team.

Ryan Van Patten 25:59

I like that. I spoke to them for a few minutes about that in feedback, and they seem to be open to it. The son didn't live with her, but lived in the area and would come stay with his mom every so often for a few days. So he was very involved for a son. Again, I think that's good, but there were some challenges to their dynamic. And I guess because of his extensive involvement in her life, it's potentially more beneficial to have him be there during part of the treatment. Maybe some of it's individual, but if the psychologist or psychiatrist thinks it's a good idea, they could also do family therapy. So I agree with that.

John Bellone 26:36

Okay. Anything else you want to say about this?

Ryan Van Patten 26:38

I think we've covered the high points.

John Bellone 26:40
All right, thanks.

Transition Music 26:45

Ryan Van Patten 26:45
Well, that does it for today's episode. Future clinical presentations will involve pediatric cases as well as new adult conditions and syndromes. We also have upcoming full-length episodes on behavioral variant FTD, culturally informed neuropsych evaluations, intellectual disability, and other topics. As always, thanks so much for listening, and join us next time as we continue to navigate the brain and behavior.

Exit Music 27:11

John Bellone 27:35
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Ryan Van Patten 27:47
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