Case Presentation and Initial Symptoms

Okay, so let's start. Imagine that you Okay, so let's start. Imagine that you have a 74 year old brought in for an have a 74 year old brought in for an inability to talk and her husband is inability to talk and her husband is very concerned. Brought her into the very concerned. Brought her into the emergency department. Her chief emergency department. Her chief complaint is, "I want to talk, but I complaint is, "I want to talk, but I can't." So, right off the bat, there's a can't." So, right off the bat, there's a discrepancy here. She is talking and discrepancy here. She is talking and saying that she can't. uh and yet uh she saying that she can't. uh and yet uh she really does experience that she's having really does experience that she's having difficulty with speech.

difficulty with speech. The symptoms had started the day before. The symptoms had started the day before. So that gives you a bit of a timeline as So that gives you a bit of a timeline as to how long these have been going on.

to how long these have been going on.

History, Exam, and Early Differential

This this would be considered acute. This this would be considered acute. So let's stop here. The point of So let's stop here. The point of reflection, what else do you want to reflection, what else do you want to know in terms of trying to figure this know in terms of trying to figure this medical mystery out? What are the medical mystery out? What are the questions that are generated in your questions that are generated in your head?

head? head? What else do you want to do in terms of What else do you want to do in terms of evaluations, evaluations, evaluations, tests, laboratory analyses, physical tests, laboratory analyses, physical exams, exams, exams, and where is your mind taking you if and where is your mind taking you if you're considering different diagnosis, you're considering different diagnosis, different treatment options? Uh, is your different treatment options? Uh, is your mind already generating some options?

mind already generating some options? That's just for the sake of reflection, That's just for the sake of reflection, but I'll continue with the story. In but I'll continue with the story. In terms of the history of present illness, terms of the history of present illness, her core symptoms included the her core symptoms included the following. Uh, and by the way, most of following. Uh, and by the way, most of the history was obtained from the the history was obtained from the husband who accompanied her. She husband who accompanied her. She appeared anxious and at times was unable appeared anxious and at times was unable to verbalize. She stated that she wanted to verbalize. She stated that she wanted to respond to questions, but her brain to respond to questions, but her brain was in a quote whirl and she was unable was in a quote whirl and she was unable to get the words out. During the to get the words out. During the interview, the patient was noted to be interview, the patient was noted to be unable to verbalize at times and unable to verbalize at times and occasionally when distracted, the occasionally when distracted, the patient appeared to be able to respond.

patient appeared to be able to respond. Her vital signs included a blood Her vital signs included a blood pressure of 181 over 98. So very high pressure of 181 over 98.

Psychiatric History and Medications

So very high systolic, heart rate of 86, respiratory systolic, heart rate of 86, respiratory rate 18, temperature 37.1 or 98.8 rate 18, temperature 37.1 or 98.8 Fahrenheit, and O2 saturation is 95% on Fahrenheit, and O2 saturation is 95% on room air. She was breathing okay room air. She was breathing okay although a bit taken and her blood although a bit taken and her blood pressure was elevated.

pressure was elevated. Her mental status was interesting. It uh Her mental status was interesting. It uh revealed in

bold there in terms of revealed in bold there in terms of appearance that she was very anxious, appearance that she was very anxious, depressed and somewhat frazzled. She was depressed and somewhat frazzled. She was propped up in a stretcher and groaning propped up in a stretcher and groaning at times. Uh, skipping down to the at times. Uh, skipping down to the psychiatric components of the mental psychiatric components of the mental status exam. She was alert and oriented status exam. She was alert and oriented times three. She was anxious, especially times three. She was anxious, especially when unable to get out the words, when unable to get out the words, cooperative, but a bit frustrated during cooperative, but a bit frustrated during these periods of what we call ephasia, these periods of what we call ephasia, lack of ability to speak. She was lack of ability to speak. She was depressed appearing. Um neurologically depressed appearing. Um neurologically she really had no focal findings. So no she really had no focal findings. So no no major deficits and she was moving all no major deficits and she was moving all extremities uh all four of them against extremities uh all four of them against gravity meaning moving them well.

gravity meaning moving them well. The husband revealed that patient also The husband revealed that patient also had some other symptoms. She had at had some other symptoms. She had at times tried to go to the bathroom at times tried to go to the bathroom at night complaining of inability to night complaining of inability to urinate urinate urinate and sometimes the patient was walking and sometimes the patient was walking with her with him protecting her, but with her with him protecting her, but she'll immediately stop thinking that she'll immediately stop thinking that she's about to fall over and never did she's about to fall over and never did fall. No report of other concerning fall. No report of other concerning findings like fever, chills, sweats, or findings like fever, chills, sweats, or what we call diapharesis, chest pain.

what we call diapharesis, chest pain. She did report some palpitations or She did report some palpitations or heart chest flutters. Did have some heart chest flutters. Did have some constipation and take some laxatives for constipation and take some laxatives for that. Um, and had to take some emodium that. Um, and had to take some emodium also or leeramide for that. uh compliant also or leeramide for that. uh compliant with her prescription medications. So, with her prescription medications. So, she was taking all of her usually she was taking all of her usually prescribed medications. So, again, prescribed medications. So, again, another stopping point to reflect. What another stopping point to reflect. What else do you want to know? Right? What else do you want to know? Right? What information would be helpful to figure information would be helpful to figure this out? What else do you want to do?

this out? What else do you want to do? What tests, laboratory analyses, What tests, laboratory analyses, interview questions, physical exam interview questions, physical exam questions do you have in your head? And questions do you have in your head? And where is your mind taking you at this where is your mind taking you at this point? Do you have any differential point? Do you have any differential diagnostic categories, potential diagnostic categories, potential diagnoses, and potential therapy diagnoses, and potential therapy options?

options? options? Moving on to reveal more of the story, Moving on to reveal more of the story, patient commented that she is very patient commented that she is very anxious and depressed. She is herself anxious and depressed. She is herself subjectively feeling that husband states subjectively feeling that husband states for the the past year or so, the patient for the the past year or so, the patient has been very melancholic and cries over has been very melancholic and cries over everything.

everything. everything. also thinks that she has been impacted also thinks that she has been impacted by the death of two of her close by the death of two of her close friends, his own open heart surgery and friends, his own open heart surgery and lung cancer diagnosis. So he's been lung cancer diagnosis. So he's been through his own medical issues and also through his own medical issues and also one of their son's illnesses. So a lot one of their son's illnesses. So a lot of stressors states that the patient of stressors states that the patient thinks that she has multiple illnesses thinks that she has multiple illnesses and has undergone different tests but and has undergone different tests but some tests without any significant some tests without any significant findings. So patient really has been findings. So patient really has been worrying about her illness quite a bit.

worrying about her illness quite a bit. Sleeping has been a struggle. Although Sleeping has been a struggle. Although with ambient or Zulpadm she might sleep with ambient or Zulpadm she might sleep around six hours for

the night according around six hours for the night according to the husband.

to the husband. A little more history in terms of past A little more history in terms of past medical history. She does have medical history. She does have gastroosophageal reflux disease or gird.

gastroosophageal reflux disease or gird. She does have hypertension, hyper She does have hypertension, hyper lipidmia or elevated lipids, anxiety, lipidmia or elevated lipids, anxiety, depression, psoriasis, seroriatic depression, psoriasis, seroriatic arthritis and osteoarthritis. All of arthritis and osteoarthritis. All of these are chronic conditions that she's these are chronic conditions that she's been managing for some time. Nothing been managing for some time. Nothing new. Terms of past surgical history, she new. Terms of past surgical history, she has bilateral total knee replacements has bilateral total knee replacements and choicesctomy or gallbladder removal and choicesctomy or gallbladder removal and a C-section way back when she had a and a C-section way back when she had a kid. Past psychiatric history includes kid. Past psychiatric history includes again this poorly stated depression, again this poorly stated depression, anxiety, no no DSM diagnoses that were anxiety, no no DSM diagnoses that were offered times many years managed by a offered times many years managed by a primary care physician, not a primary care physician, not a psychiatrist and has not really had psychiatrist and has not really had significant psychiatric evaluations and significant psychiatric evaluations and certainly no inpatient psychiatric care, certainly no inpatient psychiatric care, no suicide attempts, no substance use, no suicide attempts, no substance use, although has been smoking half a pack a although has been smoking half a pack a day of cigarettes uh since the age of day of cigarettes uh since the age of 20. So, some nicotine use there for 20. So, some nicotine use there for sure. Terms of family history, father sure. Terms of family history, father had Alzheimer's disease and mother had had Alzheimer's disease and mother had essential tremor. Also has another essential tremor. Also has another sibling. Uh it's unclear if it was sibling. Uh it's unclear if it was brother or sister with Alzheimer's. So brother or sister with Alzheimer's. So as you take this into account, there's as you take this into account, there's some genetic loading, some history here, some genetic loading, some history here, some chronic conditions, and some uh some chronic conditions, and some uh note of psychiatric illness without uh note of psychiatric illness without uh clear u determination as to what the clear u determination as to what the diagnosis is. Terms of her home diagnosis is. Terms of her home medications, there are many. She had medications, there are many. She had been taking at the time of arrival been taking at the time of arrival duloxitine also known as symbalta uh 60 duloxitine also known as symbalta uh 60 milligrams twice a day. Oxycodone acetto milligrams twice a day. Oxycodone acetto medicine or percoet 10 mg/325 medicine or percoet 10 mg/325 milligrams every 6 hours. Methotraate milligrams every 6 hours. Methotraate 2.5 milligrams 2.5 milligrams once a week on Fridays. Zulpadm or once a week on Fridays. Zulpadm or ambient that I mentioned 10 milligrams ambient that I mentioned 10 milligrams at night. Enbril 50 milligrams at night. Enbril 50 milligrams subcutaneously once a week on subcutaneously once a week on Wednesdays. Folate or folic acid Wednesdays. Folate or folic acid supplementation emloopenearten supplementation emloopenearten azor azor azor 5/20 milligrams daily for heart and and 5/20 milligrams daily for heart and and blood pressure. Propranol or indurol blood pressure. Propranol or indurol extended release 60 milligrams daily as extended release 60 milligrams daily as needed for anxiety. Alprazilam or xanax needed for anxiety. Alprazilam or xanax 0.25 milligrams daily as needed for 0.25 milligrams daily as needed for anxiety and clinazipam or clonopin.5 anxiety and clinazipam or clonopin.5 milligrams daily as needed for anxiety.

milligrams daily as needed for anxiety. So you can see a number of strategies So you can see a number of strategies here, pharmacologic strategies for here, pharmacologic strategies for anxiety that also have side effects and anxiety that also have side effects and other other concerns. So quite a bit of other other concerns. So quite a bit of medication here. So again, more medication here.

Workup and EEG Reveals Seizures

So again, more information has been revealed at this information has been revealed at this point in terms of stopping and point in terms of stopping and reflecting on the case. What else once reflecting on the case. What else once again do you want to know? What other again do you want to know? What other tests, labs, findings do you consider?

tests, labs, findings do you consider? Um how uh do you obtain those? So what Um how uh do you obtain those? So what else do you want to do? And finally, else do you want to do? And finally, where is your mind taking you in

terms where is your mind taking you in terms of differential diagnoses and of differential diagnoses and considerations?

considerations? considerations? A little more information in terms of A little more information in terms of objective analyses. Her complete blood objective analyses. Her complete blood cells count and her electrolytes as well cells count and her electrolytes as well as her liver function tests were all as her liver function tests were all within normal limits. So nothing too within normal limits. So nothing too remarkable there. Her thyroid remarkable there. Her thyroid stimulating hormone TSH CK creating stimulating hormone TSH CK creating kynise, her ammonia, her folate, and her kynise, her ammonia, her folate, and her C reactive pro protein were all within C reactive pro protein were all within normal limits as well. Her chest X-ray normal limits as well. Her chest X-ray was also clean. Her EKG was within was also clean. Her EKG was within normal limits with a QTC of 434. Her CT normal limits with a QTC of 434. Her CT of the brain which is visualized here of the brain which is visualized here was negative for any acute incraanial was negative for any acute incraanial pathology pathology pathology although it showed some involutional although it showed some involutional changes with volume loss changes with volume loss and as mentioned no CT evidence of any and as mentioned no CT evidence of any acute pathology. So some involutional acute pathology. So some involutional changes or age related changes with a changes or age related changes with a bit of atrophy or or reduction in the bit of atrophy or or reduction in the size of the cortical mass was noted but size of the cortical mass was noted but that happens very gradually and it's not that happens very gradually and it's not typically the reason for somebody to typically the reason for somebody to have sudden findings like this patient have sudden findings like this patient did.

did. did. The urine analysis also showed The urine analysis also showed interestingly u some growth of klebsella interestingly u some growth of klebsella bacteria and as you can see the findings bacteria and as you can see the findings there um might you know suggest an there um might you know suggest an ideology or a cause for some of these ideology or a cause for some of these when consultation leazison and when consultation leazison and psychiatry was consulted or CL was psychiatry was consulted or CL was consulted uh we conducted an intake and consulted uh we conducted an intake and this is what we observed I'll read most this is what we observed I'll read most of this um the patient was seen at of this um the patient was seen at bedside with a husband and interview was bedside with a husband and interview was limited as at times patient was unable limited as at times patient was unable to verbalize and became silent through to verbalize and became silent through the conversation. Patient stated she has the conversation. Patient stated she has been feeling anxious for years now which been feeling anxious for years now which she relates to numerous stressors she relates to numerous stressors including her husband's heart surgery, including her husband's heart surgery, lung cancer diagnosis and a son's health lung cancer diagnosis and a son's health as well as recent death of two of her as well as recent death of two of her very close friends. Patient stated that very close friends. Patient stated that she's having a lot of free time and she's having a lot of free time and constantly worrying. She stated that her constantly worrying. She stated that her mood has been worsening in the last few mood has been worsening in the last few months, stating feeling sad and that months, stating feeling sad and that she's been crying every day. She stated she's been crying every day. She stated sleep and appetite are quote horrible sleep and appetite are quote horrible and always feeling tired. Patient also and always feeling tired. Patient also mentioned feeling hopeless but is not mentioned feeling hopeless but is not able to elaborate as she becomes silent able to elaborate as she becomes silent on the conversation. patient is able to on the conversation. patient is able to engage again with some redirection and engage again with some redirection and support and she denied any self harm support and she denied any self harm thoughts, passive or active suicidal or thoughts, passive or active suicidal or homicidal ideiation. She also denied any homicidal ideiation. She also denied any auditory hallucinations, visual auditory hallucinations, visual hallucinations or paranoia. And the hallucinations or paranoia. And the patients mentioned several times being patients mentioned several times being concerned about different illnesses like concerned about different illnesses like Alzheimer's and being unable to walk.

Alzheimer's and being unable to walk. She also mentions that her father died She also mentions that her father died from complications of Alzheimer's and from complications of Alzheimer's and she finally mentioned having essential she finally mentioned having essential tremors that run in her family. So you tremors that run in her family. So you can see pretty quickly it was can see pretty quickly it was ascertained many biological, ascertained many biological, psychological and social variables that psychological and social variables that are affecting this individual at this are affecting this individual at this time.

time. time. So when it comes to the exercise of So when it comes to the exercise of determining what is the diagnosis, it's determining what is the diagnosis, it's important to have so-called differential important to have so-called differential diagnosis and consider many different diagnosis and consider many different options simultaneously, not exclude one options simultaneously, not exclude one or the other.

or the other. At the top of the list, we have the At the top of the list, we have the possibility of an anxiety disorder that possibility of an anxiety disorder that has never been properly diagnosed and is has never been properly diagnosed and is now manifesting in unusual ways with now manifesting in unusual ways with fear of walking, fear of talking, if you fear of walking, fear of talking, if you will, and relative periods of mutism.

will, and relative periods of mutism. Another option is an adjustment disorder Another option is an adjustment disorder which is a timelimited reaction to which is a timelimited reaction to recent stressors. If somebody's going recent stressors. If somebody's going through quote a hard time, losses, through quote a hard time, losses, deaths, um challenges, they may have an deaths, um challenges, they may have an adjustment disorder with anxiety and or adjustment disorder with anxiety and or depression. Another option here is a depression. Another option here is a sematic symptom disorder in which sematic symptom disorder in which somebody is very preoccupied with their somebody is very preoccupied with their physical health and diagnosis physical health and diagnosis and are so preoccupied that they're and are so preoccupied that they're they're experiencing functional they're experiencing functional impairments as a result of that. Chronic impairments as a result of that. Chronic pain should be considered here as an pain should be considered here as an important variable. This individual is important variable. This individual is taking percoet u every day presumably taking percoet u every day presumably for her osteoarthritis and seroriatic for her osteoarthritis and seroriatic arthritis. And it's important to arthritis. And it's important to understand that chronic pain comes with understand that chronic pain comes with biocschosocial complexities. It's not biocschosocial complexities. It's not typically just a condition about pain.

typically just a condition about pain. Very often individuals have overlays of Very often individuals have overlays of anxiety, depression, and all sorts of anxiety, depression, and all sorts of other challenges.

other challenges. Polyfarm pharmacy or the interaction of Polyfarm pharmacy or the interaction of various medications is very important various medications is very important here. We saw a long list of medications here. We saw a long list of medications and she is of advanced age. Perhaps and she is of advanced age. Perhaps these medications are having these medications are having interactions causing all sorts of issues interactions causing all sorts of issues in terms of impaired ability to speak, in terms of impaired ability to speak, maybe some confusion, maybe some maybe some confusion, maybe some difficulty with urination as described difficulty with urination as described earlier, in terms of antiolinergic earlier, in terms of antiolinergic effects. There are many possibilities effects. There are many possibilities here and these medications in here and these medications in combination may be catching up with her combination may be catching up with her if you if you will. There's also the if you if you will. There's also the possibility of neurologic disorder, possibility of neurologic disorder, meaning something that is brainbased, meaning something that is brainbased, that hasn't been diagnosed, that is that hasn't been diagnosed, that is causing these freeze episodes, the causing these freeze episodes, the mutism.

mutism. mutism. Personality traits and disorders are Personality traits and disorders are always under consideration as possibly always under consideration as possibly contributing to a picture. Is this contributing to a picture. Is this individual particularly dependent? Is individual particularly dependent? Is this somebody who's clingy, needy, if this somebody who's clingy, needy, if you will, at you will, at you know at baseline and depends you know at baseline and depends excessively on others whether it's excessively on others whether it's doctors, providers or husband etc.

doctors, providers or husband etc. Delirium is an important consideration Delirium is an important consideration also known as encphylopathy. also known as encphylopathy.

Confusion caused by a medical a medical Confusion caused by a medical a medical cause. cause. cause. Catatonia is also to be considered. Catatonia is also to be considered.

Catatonia is a condition in which Catatonia is a condition in which individuals freeze up uh become rigid individuals

freeze up uh become rigid become mute become immobile and and are become mute become immobile and and are unable to to basically move and operate unable to to basically move and operate fluidly as they used to. So that is also fluidly as they used to. So that is also a consideration here and still others.

a consideration here and still others. It's important to remain as as It's important to remain as as clinicians and providers open to the clinicians and providers open to the possibility of different explanations possibility of different explanations for this whether it's medical, physical, for this whether it's medical, physical, psychological, social, spiritual.

psychological, social, spiritual. So these were all of the considerations So these were all of the considerations that were swirling through the minds of that were swirling through the minds of the providers. Neurology was consulted the providers. Neurology was consulted by the medical team because they felt by the medical team because they felt that actually one of the other that actually one of the other considerations was possible psychoggenic considerations was possible psychoggenic non-epileptic seizures. Now this refers non-epileptic seizures. Now this refers to of course not epilepsy but to of course not epilepsy but seizure episodes or seizure- like seizure episodes or seizure- like episodes that are thought to be episodes that are thought to be psychologically mediated. And so the psychologically mediated. And so the medical team wanted to rule this out, medical team wanted to rule this out, wanted to exclude this possibility. And wanted to exclude this possibility. And at face value, it seems like it's a bit at face value, it seems like it's a bit premature to jump to that conclusion, premature to jump to that conclusion, but neurology was consulted anyway.

but neurology was consulted anyway. They also consulted us psychiatry um They also consulted us psychiatry um sort of urgently for this anxiety and sort of urgently for this anxiety and panic. So you can you can see the panic. So you can you can see the primary medical team already being sort primary medical team already being sort of biased towards a psychiatric or of biased towards a psychiatric or psychological explanation for the psychological explanation for the condition based on everything that we condition based on everything that we just reviewed. her normal CAT scan of just reviewed. her normal CAT scan of the brain, her relatively normal labs.

the brain, her relatively normal labs. The fact that she's able to talk at The fact that she's able to talk at times but not at others, which makes it times but not at others, which makes it makes one think this is inconsistent and makes one think this is inconsistent and it's maybe even selective. The fact that it's maybe even selective. The fact that she has a history of depression, she has a history of depression, anxiety, a number of medications in anxiety, a number of medications in board, that she has stressors that maybe board, that she has stressors that maybe could be affecting her in a could be affecting her in a psychological way. All of this perhaps psychological way. All of this perhaps understandably influenced the medical understandably influenced the medical team to think of a medical or excuse me team to think of a medical or excuse me psychiatric explanation.

psychiatric explanation. But labs and an electronogram were But labs and an electronogram were ordered by neurology and interestingly ordered by neurology and interestingly we found an abnormal electron or EEG in we found an abnormal electron or EEG in the awake and drowsy states. Something the awake and drowsy states. Something was off. four electroclinical focal was off. four electroclinical focal onset seizures were recorded arising onset seizures were recorded arising from the right frontal central region.

from the right frontal central region. In other words, actual epileptic events In other words, actual epileptic events were captured and recorded by the EEG a were captured and recorded by the EEG a brain wave test uh arising from the brain wave test uh arising from the right front part of the brain.

right front part of the brain.

Treatment Response and Follow-Up

Neurology actually started some Neurology actually started some medications, antiepileptics known as medications, antiepileptics known as Vimpat and Kera, loaded the individual Vimpat and Kera, loaded the individual with that and then changed over to a with that and then changed over to a different one or vaporic acid and were different one or vaporic acid and were able to stop the seizures. And in able to stop the seizures. And in

subsequent evaluations, she also subsequent evaluations, she also received an MRI of the brain and found received an MRI of the brain and found same thing parankal volume loss, some same thing parankal volume loss, some changes that came with age, but no major changes that came with age, but no major abnormal acute abnormal acute emergent findings. There's a lot of emergent findings. There's a lot of language on this slide, but I'll focus language on this slide, but I'll focus also on what's in bold. There was also also on what's in bold. There was also this possibility of marrow infiltrative this possibility of marrow infiltrative process such as metastasis which is of process such as metastasis which is of course what happens with cancer when it course what happens with cancer when it spreads and the radiologist reading this spreads and the radiologist reading this MRI said maybe multiple myyoma lymphoma MRI said maybe multiple myyoma lymphoma or other possible cancer cannot be or other possible cancer cannot be excluded and they recommended clinical excluded and they recommended clinical correlation in other words follow this correlation in other words follow this up do tests do labs and they did and up do tests do labs and they did and basically found u nothing nothing else basically found u nothing nothing else on other tests this is the rest of the on other tests this is the rest of the workup. They did a CAT scan of the workup. They did a CAT scan of the abdomen and the chest. There was no abdomen and the chest. There was no evidence of cancer thankfully and also evidence of cancer thankfully and also her hemat hematologic or cell lines were her hemat hematologic or cell lines were okay. They consulted hematology for okay. They consulted hematology for that. So we did not think the cancer was that. So we did not think the cancer was really um at play here and in fact she really um at play here and in fact she improved dramatically. No further improved dramatically. No further symptoms on the depico 250 milligrams symptoms on the depico 250 milligrams every 6 hours. She was tolerating it every 6 hours. She was tolerating it well too. and she connected with well too. and she connected with neurology as an outpatient once she was neurology as an outpatient once she was discharged and she kept taking the discharged and she kept taking the depico or vaporic acid. She did complain depico or vaporic acid.

Aphasia, Aphemia, and Speech Arrest

She did complain of some side effects and asking to come of some side effects and asking to come off of it but that's a whole other off of it but that's a whole other matter. She did respond well to this and matter. She did respond well to this and didn't have any further episodes of the didn't have any further episodes of the talking freezes.

talking freezes. So it was an important reminder of So it was an important reminder of the the the differential diagnosis that cause speech differential diagnosis that cause speech arrest. This image here is a reminder of arrest. This image here is a reminder of the different types of aphasia. Aphasia the different types of aphasia. Aphasia is a cessation of speech or an is a cessation of speech or an interruption of speech, abnormal speech interruption of speech, abnormal speech due to a neurologic or other medical due to a neurologic or other medical process. And you can see that the way us process. And you can see that the way us you know doctors are meant to organize you know doctors are meant to organize these is to think of uh what's called these is to think of uh what's called fluent aphasia, meaning is the is the fluent aphasia, meaning is the is the speech itself being communicated clearly speech itself being communicated clearly or expressive aphasia. you know, is the or expressive aphasia. you know, is the person not not even understanding or person not not even understanding or receiving the information, right? Um, receiving the information, right? Um, and can they repeat it back? And so, you and can they repeat it back? And so, you see all of these questions that we ask see all of these questions that we ask ourselves to then go down the algorithm ourselves to then go down the algorithm or the tree to see which one of these or the tree to see which one of these might be the aphasia at play. Now, in might be the aphasia at play. Now, in this case, she actually wasn't diagnosed this case, she actually wasn't diagnosed with a conventional aphasia because it with a conventional aphasia because it was temporary and it was reversed with was temporary and it was reversed with treatment. Instead, what we thought treatment. Instead, what we thought about with this case is what's called about with this case is what's called aphemia. Now, aphemia is a different aphemia. Now, aphemia is a different slightly different phenomenon than slightly different phenomenon than aphasia. And Broca, who's pictured here, aphasia. And Broca, who's pictured here, is a very famous uh physician who is a very famous uh physician who described aphasas, but also described described aphasas, but also described aphemia. Aphemia is something that most aphemia. Aphemia is something that most physicians actually don't think enough physicians actually don't think enough about. Most physicians do learn about about. Most physicians do learn about aphasia and broca and what part of the aphasia and broca and what part of the brain this is termed broca's cortex brok brain this is termed broca's cortex brok or broca's area what part of the brain or broca's area what part of the brain

is influenced or impact in impacted in is influenced or impact in impacted in aphasas but apheme is a different matter aphasas but apheme is a different matter and I'll just quote what broker wrote a and I'll just quote what broker wrote a long time ago long time ago basically he described that there are basically he described that there are cases where the general language faculty cases where the general language faculty persists unaltered where the auditory persists unaltered where the auditory apparatus is intact act where all the apparatus is intact act where all the muscles not even accepting those of the muscles not even accepting those of the voice and those of articulation obey the voice and those of articulation obey the will and yet where a cerebral lesion will and yet where a cerebral lesion abolishes articulated language. So abolishes articulated language. So that's a lot of speech to say everything that's a lot of speech to say everything seems intact and yet the person's unable seems intact and yet the person's unable to talk. This abolition of speech to talk. This abolition of speech constitutes a symptom so singular that constitutes a symptom so singular that it seems to be useful to designate it it seems to be useful to designate it with a special name a with a special name a deprivation of speech a speech. It is deprivation of speech a speech. It is only the faculty of articulating words only the faculty of articulating words that these patients lack. Right? So that these patients lack. Right? So they're thinking of the words and they're thinking of the words and they're unable to sort of articulate it.

they're unable to sort of articulate it. They hear and comprehend all that one They hear and comprehend all that one says to them. They all have their says to them. They all have their intelligence. They emit vocal sounds intelligence. They emit vocal sounds with ease. They execute with their with ease. They execute with their tongue and their lip movements much more tongue and their lip movements much more extensive and energetic than those extensive and energetic than those required for the articulation of sounds.

required for the articulation of sounds. And yet the perfectly sensible response And yet the perfectly sensible response that they would want to make is reduced that they would want to make is reduced to a very small number of articulated to a very small number of articulated sounds. So, this is a long way of saying sounds. So, this is a long way of saying that the individual is really trying that the individual is really trying hard to communicate what is in their hard to communicate what is in their mind. They know what to say and they mind. They know what to say and they just can't get it out. And it's kind of just can't get it out. And it's kind of like having words at the tip of your like having words at the tip of your tongue, but instead when you you're tongue, but instead when you you're struggling and you have words in the tip struggling and you have words in the tip of your tongue, you can't quite imagine of your tongue, you can't quite imagine the word. In somebody with aphia, they the word. In somebody with aphia, they do imagine the word. They know what do imagine the word. They know what they're trying to say and they just they're trying to say and they just can't get it out.

can't get it out. So this creates a lot of clinical So this creates a lot of clinical confusion for physicians, doesn't it? If confusion for physicians, doesn't it? If somebody comes in and can't speak and somebody comes in and can't speak and frankly there have been reports like the frankly there have been reports like the ones I'm showing here of individuals who ones I'm showing here of individuals who have had a have had a which is arguably rare and it being which is arguably rare and it being confused for other things. For instance, confused for other things. For instance, this was a case that was published of this was a case that was published of somebody who had once again frontal lobe somebody who had once again frontal lobe epilepsy, what's called non-convulsive, epilepsy, what's called non-convulsive, so not shaking status epilepticus so not shaking status epilepticus uh or uncontrolled epilepsy.

uh or uncontrolled epilepsy. And the person had stuttering, had a And the person had stuttering, had a semi aphasia. So it was mixed and it was semi aphasia. So it was mixed and it was not a sign of what we also call not a sign of what we also call psychoggenic non-epileptic seizures in psychoggenic non-epileptic seizures in other spaces. Remember, the patient was other spaces. Remember, the patient was called for that.

called for that. And in this case, I'm not going to And in this case, I'm not going to review all of this. They described an review all of this. They described an elderly man who experienced personality elderly man who experienced personality changes and bouts of stuttering followed changes and bouts of stuttering followed by an arthria with preserved writing and by an arthria with preserved writing and then aphasia and then some confusion.

then aphasia and then some confusion. And the EEG there showed non-convulsive And the EEG there showed

non-convulsive status epilepticus. Again, this is not status epilepticus. Again, this is not not physically shaking, so you can't see not physically shaking, so you can't see it. uh uncontrolled epilepsy with it. uh uncontrolled epilepsy with focality in other words focused in the focality in other words focused in the left frontal region of the brain. Um so left frontal region of the brain. Um so it was very interesting another case of it was very interesting another case of sort of focal or localized seizure sort of focal or localized seizure activity that you wouldn't really activity that you wouldn't really understand or pick up unless you did the understand or pick up unless you did the EEG.

EEG. EEG. This is actually a normal EEG This is actually a normal EEG showing the brain waves at different showing the brain waves at different spots spots spots emanating in the cortex. These are all emanating in the cortex. These are all different markers for where the different markers for where the electrodes or the wires go on the scalp.

electrodes or the wires go on the scalp. Wires are placed with a, you know, a Wires are placed with a, you know, a little gel on the scalp and it measures little gel on the scalp and it measures electrical activity below the scalp and electrical activity below the scalp and skull. And you can see all of these skull. And you can see all of these different placements in the brain. This different placements in the brain. This is a EKG down here, electroc cardiogram is a EKG down here, electroc cardiogram that's done at the same time just to that's done at the same time just to correlate activity just to match it. And correlate activity just to match it. And this is a normal EEG.

this is a normal EEG. This is from the article that we were This is from the article that we were just reviewing. When the individual just reviewing. When the individual could not get his words out, he had could not get his words out, he had findings in the localized left frontal findings in the localized left frontal electrode. It says right here, cannot electrode. It says right here, cannot get words out.

get words out. Later he also couldn't name write but Later he also couldn't name write but did follow commands. So he's able to did follow commands.

Broader Differential and Seizure Mimics

So he's able to receive commands and yet wasn't able to receive commands and yet wasn't able to name right name right during that time and then he became during that time and then he became somewhat unresponsive mute confused.

somewhat unresponsive mute confused. This is where electrical activity as you This is where electrical activity as you can see gets quite abnormal in multiple can see gets quite abnormal in multiple spaces. There's spreading of that spaces. There's spreading of that phenomenon from just one or two phenomenon from just one or two electrodes to more.

electrodes to more. It just goes to show the progression of It just goes to show the progression of electrical changes in an individual. So electrical changes in an individual. So that was from that case report. Another that was from that case report. Another case report spoke about how case report spoke about how later in life you can have some denovo later in life you can have some denovo or new aphasic status epilepticus. So or new aphasic status epilepticus. So seizure activity that is causing seizure activity that is causing essentially speech problems. This is a essentially speech problems. This is a report from 2022 in which they described report from 2022 in which they described this. Um I actually looked back at this. Um I actually looked back at patients and over about eight years of patients and over about eight years of practice in this group only 19 patients practice in this group only 19 patients um with this aphasia aphasic status um with this aphasia aphasic status epilepticus had um no lesions in their epilepticus had um no lesions in their brain when they had full imaging done.

brain when they had full imaging done. Most of them were women 71% and most of Most of them were women 71% and most of them were of of advanced age 66 in terms them were of of advanced age 66 in terms of mean age. Six died actually during of mean age. Six died actually during these events. So this is a very serious these events. So this is a very serious condition. Um like all seizure disorders condition. Um like all seizure disorders or epilepsy conditions needs to be taken or epilepsy conditions needs to be taken seriously. It's an emergency and you seriously. It's an emergency and you need to abort the seizure activity. Give need to abort the seizure activity.

Give a bzzoazipene or an anti-epileptic drug a bzzoazipene or an anti-epileptic drug right away if you identify that.

right away if you identify that. It's interesting persistent aphasia that It's interesting persistent aphasia that that sort of lasts longer than 65 hours that sort of lasts longer than 65 hours according to this analysis and and other according to this analysis and and other experts. If somebody's really having experts. If somebody's really having that difficulty of speaking longer than that difficulty of speaking longer than than 65 hours, it's likely um that they than 65 hours, it's likely um that they could have this this condition. It is could have this this condition. It is rare, but it's a rare emergency. You rare, but it's a rare emergency. You wouldn't want to miss it. Terms of uh wouldn't want to miss it. Terms of uh what a female looks like over time.

what a female looks like over time. There's a hint here that maybe it is There's a hint here that maybe it is correlated with some neurodeeneration. correlated with some neurodeeneration.

All right? So, changes in the brain. All right? So, changes in the brain. brain is um you know involuting, brain is um you know involuting, degenerating over time, atrophying, degenerating over time, atrophying, losing mass, which is why you see it in losing mass, which is why you see it in older populations. This is a case report older populations. This is a case report from 2011 where they actually followed from 2011 where they actually followed an individual over time for many years, an individual over time for many years, a 70-year-old male who initially a 70-year-old male who initially presented with difficulty pronouncing presented with difficulty pronouncing and producing words. 's first problem and producing words. 's first problem was with speech and over time there was was with speech and over time there was an associated uh degeneration of brain an associated uh degeneration of brain matter. In other words, dementia of some matter. In other words, dementia of some sort. As you can see, this brain uh sort. As you can see, this brain uh really does have a lot of atrophy or really does have a lot of atrophy or black space in there where the cortex black space in there where the cortex used to reside. Um in younger times, used to reside. Um in younger times, this would have been all nice and full this would have been all nice and full and gray, but you see all of these black and gray, but you see all of these black interdigitations.

interdigitations. interdigitations. Um and that's because of the atrophy of Um and that's because of the atrophy of the of the brain. the of the brain.

And uh this was thought in this case to And uh this was thought in this case to be a precursor to what's called a be a precursor to what's called a praxia. A praxia is a a failure to to do praxia. A praxia is a a failure to to do various uh you know tasks, walking, various uh you know tasks, walking, talking, uh bathing themselves, eating talking, uh bathing themselves, eating motor tasks that is is seen in advanced motor tasks that is is seen in advanced dementia. So sometimes the earliest hint dementia. So sometimes the earliest hint might be speech problems and that's why might be speech problems and that's why it's important to attend to this. Not it's important to attend to this. Not not only because speech problems can be not only because speech problems can be part of a seizure disorder as we're part of a seizure disorder as we're talking about but also can be the first talking about but also can be the first hint the canary in the coalmine if you hint the canary in the coalmine if you will towards uh other signs of dementia.

will towards uh other signs of dementia. And these are images showing changes And these are images showing changes over time. U the patient was imaged um over time. U the patient was imaged um at age um uh 75 and then was uh had at age um uh 75 and then was uh had another image five years later. that's another image five years later. that's in in B. And then one year later, so one in in B. And then one year later, so one year after that, that's C. And so you year after that, that's C. And so you can see the reduction in these can see the reduction in these highlighted areas. That's brain activity highlighted areas. That's brain activity from what's called a functional MRI. You from what's called a functional MRI. You can see the reduction over time. Sadly, can see the reduction over time. Sadly, just as age marches on, the brain loses just as age marches on, the brain loses its spark, if you will. You can see a its spark, if you will. You can see a petering out, if you will, in terms of petering out, if you will, in terms of that brain activity. means it's no that brain activity. means it's no wonder of course that there would be wonder of course that there would be changes in speech or in um other changes in speech or in um other activities.

activities. activities. The case that I just described, I The case that I just described, I actually uh published in an academic actually uh published in an academic journal, the journal of the academy of journal, the journal of the

academy of consultation, less and psychiatry consultation, less and psychiatry um as a brief report to raise awareness um as a brief report to raise awareness about this finding aphia and to suggest about this finding aphia and to suggest that we should not jump to conclusions that we should not jump to conclusions and say this is psychological or this is and say this is psychological or this is psychoggenic.

psychoggenic. psychoggenic. It's important to rule out all other you It's important to rule out all other you know conditions. In this case, the EEG know conditions. In this case, the EEG was very helpful, of course, in was very helpful, of course, in identifying frontal seizures that were identifying frontal seizures that were causing mutism. And so we we published causing mutism. And so we we published it with some of my colleagues that are it with some of my colleagues that are listed there in order to increase that listed there in order to increase that kind of awareness. And you're welcome kind of awareness. And you're welcome to, of course, review the article on to, of course, review the article on your own. This is an important task your own. This is an important task actually for consultationally as a actually for consultationally as a psychiatrist. People might think that psychiatrist. People might think that psychiatrists are really just there to psychiatrists are really just there to quote shrink heads and label everyone quote shrink heads and label everyone with depression and anxiety, but with depression and anxiety, but actually we advocate for thorough actually we advocate for thorough medical evaluations. We advocate that, medical evaluations. We advocate that, you know, no stone goes unturned, if you you know, no stone goes unturned, if you will, and that we exclude all of the will, and that we exclude all of the other possibilities before jumping to other possibilities before jumping to conclusions. And in that way, conclusions. And in that way, paradoxically, we're actually more like paradoxically, we're actually more like medical sleuths, if you will, or medical sleuths, if you will, or investigators than than traditional investigators than than traditional psychiatrists. So, psychiatrists in the psychiatrists. So, psychiatrists in the medical setting or consultation leads medical setting or consultation leads and psychiatrists really do something a and psychiatrists really do something a little different in that respect. So, in little different in that respect. So, in summary, summary, summary, speech changes can have many, many speech changes can have many, many causes. If you remember that list of causes. If you remember that list of possible diagnoses and presentations, possible diagnoses and presentations, speech in fact is a very complex speech in fact is a very complex neurobiological phenomena. We didn't neurobiological phenomena. We didn't even talk about volume and tone and rate even talk about volume and tone and rate and and accent and all of these other and and accent and all of these other components of speech. But when speech components of speech. But when speech goes ary, many different things can goes ary, many different things can cause that. It's important to expand the cause that. It's important to expand the differential diagnosis when we do that, differential diagnosis when we do that, of course. And that organic or what we of course. And that organic or what we call medical workup, not just call medical workup, not just psychiatric considerations, but organic psychiatric considerations, but organic workup is essential. Of course, we workup is essential. Of course, we should trust our own awareness of what should trust our own awareness of what epileptic seizures are and what they epileptic seizures are and what they aren't. Right? So, epileptic seizures aren't. Right? So, epileptic seizures are not just seizures involving people are not just seizures involving people flapping around dramatically flapping around dramatically uh with their whole body shaking or what uh with their whole body shaking or what we might see in the movies. Uh that is we might see in the movies. Uh that is part of seizures, right? Those are part of seizures, right? Those are called grand mild seizures or tonoclonic called grand mild seizures or tonoclonic seizures. But there are other types of seizures. But there are other types of seizures that are smaller in nature that seizures that are smaller in nature that only impact speech or other areas of only impact speech or other areas of functioning. And it's very important to functioning. And it's very important to not forget those seizures that we not forget those seizures that we sometimes call focal or partial sometimes call focal or partial seizures.

seizures. seizures. [Music]