



## Managing Neuro-inflammation Spine Diseases and Adhesive Arachnoiditis

Featuring Dr. Forest Tennant; Hosted by The Monk and the Hedonist podcast #7 with Dr. Bobby Koneru and Dr. Deepti Agarwal

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[Opening monologue]

Welcome to the Monk and the Hedonist. A podcast that explores longevity, and resilience, and all the drivers that influence it from our cognitive to physical to emotional health. The show was hosted by Dr. Bobby Koneru and Dr. Deepti Agarwal. Tune in as we speak to experts, peak performers, and influencers on these important topics.

**Dr. Koneru:** Welcome to tonight's episode of the Monk and the Hedonist. We have a really special guest tonight, Dr. Forest Tennant, who will be talking to us about neuroinflammatory disorders of the spine. There's a very personal reason as to why I wanted Dr. Forest Tennant on, which I'll be going into. Before we dive in, I would like to first make a toast in our usual Monk and Hedonist fashion. Tonight I am drinking an iced chamomile tea and what are you drinking over there in Chicago?

**Dr. Agarwal:** Bobby, tonight I am having some kava stress relief tea. I think I've had this before in a prior episode, but it's just a nice tea to have as I'm winding down the evening, cheers!

**Dr. Tennant:** I am drinking a Diet Zero Sugar Seven Up (laughter).

**Dr. Koneru:**

Okay, perfect. We thank you for coming on tonight's show. Tonight we are going to be talking about neuroinflammatory diseases of the spine, with a special emphasis on Arachnoiditis. As you know, I have a very personal reason for bringing you on. My father, who is a retired anesthesiologist, was going through a routine epidural injection for lower back pain and he ended up developing Arachnoiditis. As an anesthesiologist, and myself as an oncologist, we really had very minimal understanding about what this was, outside of just reading about it in the textbooks.

Once my father got the diagnosis through an MRI, along with the classical clinical symptoms that come up from this, we started really diving deep into the treatment for it; of which there was a really big lack of information out there, but your name came up. Really, you have been a pioneer and a leader in this space. What blew me away was the number of people out there that have developed this type of neuroinflammatory disorder. They are just sitting out there without a lot of guidance and help. I scoured the Facebook groups and there's thousands, literally thousands of patients who have got this. It's much much more common than I've ever known, so thank you. Maybe we can start by just talking about your background and what got you into the space.

**Dr. Tennant:**

First off, I'm fundamentally an internist by trade. I took my public health fellowship,; actually in psychiatry, and my early interests primarily were in addiction, but soon pain came as a follow-up. So without going into a lot of detail, that's really where I came from-- out of addiction medicine.

I was one of the early people who started off by developing urine testing, methadone clinics and naltrexone, while trying to deal with those unfortunate individuals. I actually got into pain management because I think some people today are still confused. Back in the 70's when I got involved, everybody thought anybody who was taking an opioid drug was obviously an addict, but we soon learned that some of those people take opioids for legitimate pain purposes. Not for euphoria, or for some psychological reason. So early on, when I say early on, I'm talking about 40 years ago, I realized that we have to treat addicts over here and we've got to treat legitimate pain patients over there. We have a few people that are kind of a mixture of the two, but most people are pretty clear-cut. I have spent 50 years studying these people and staying with it. How I got involved with Arachnoiditis is a bit of history.

Most people today don't realize what Pantopaque was.

Arachnoiditis has an interesting history to start with, and no, it's not a spider bite. The arachnoid layer is part of the spinal canal covering or part of the brain covering. I'll just use the word covering because words like meninges and thecal sac is for us doctors, but everybody else calls it a spinal canal covering. Arachnoiditis is really part of the covering and there are cases that go back to probably the 1700's. I found one physician who probably treated cases in the 1700's.

In the 1800's, it was a frightening disease. The normal causes of it were syphilis and tuberculosis. Some of the physicians will recognize who Dr. Addison was. If you go back and look at his dozen or so cases that he published in 1855, about a third of those were Arachnoiditis cases that developed adrenal failure, and of course, they died. Arachnoiditis was actually defined in medical dictionaries in around 1860 and so it's been around a long time.

During the 1900s, what caused Arachnoiditis fundamentally disappeared. Syphilis was treated and tuberculosis was treated, so it was a dead disease. Then they introduced Pantopaque for myelograms and that dye was toxic to some people. During the 1980's, I was actually referred to people who already had the diagnosis of Arachnoiditis due to the Pantopaque dyedie, and gosh, they were terrible cases. I even had our first self-help group out of St. Louis and those people disappeared, because in 1987 MRIs were developed and that was a godsend. MRI technology has been wonderful. That technology is really why I'm doing this tonight. If contrast technology MRIs's had not come along, we really could not have characterized this disease and we would not have ever figured out that protruding discs were inflamed, that the Cauda Equina can get inflamed; and the covering can get inflamed.

Adhesive Arachnoiditis is the worst thing you can have because it's really a matter of spinal cord roots, known as the Cauda Equina, getting inflamed. The covering gets inflamed and the two hook together into int a mass; so that's the terrible disease. However, because of contrast MRIs and that technology, people who have typical symptoms can be diagnosed. Really, what is bringing us forward is the MRIs. That's really what has made the difference.

When I started looking at MRIs, I was totally confused. I couldn't make heads or tails out of looking at all those nerve roots. Because radiologists don't look at nerve roots, they look at something as surgical, as they should. I've learned to look at those nerve roots and a few other things. So, the bottom line is we're now diagnosing people that we never even thought had a problem and we've given it a name such as failed back syndrome, degenerative back; or neuropathic back. I've got a lot of names that we probably should have never used. But anyways, we now know that inflammation is in that spinal canal. It's kind of an exciting new thing and it's making medical practice a lot more fun, in my opinion.

**Dr. Koneru:**

So really, because of MRIs, we're catching a lot more neuroinflammatory disorders of the spine and making the diagnosis of this whole spectrum of neuroinflammation, the worst of which is Arachnoiditis. Is that correct?

**Dr. Tennant:**

That summarizes it very well. It's when you're a physician, or even a radiologist, and you start looking for these things you're quite confused. I can tell you that it's not like anything else. After you see a few and get the basics down, it's just like reading a chest x-ray. You can learn it easily

and should. In fact, it's kind of fun. You can see these different spinal inflammatory disorders on the new contrast MRIs, and so I predict that we're gonna go forward with it. Now that we can diagnose this, we can get some better treatments.

9:25

**Dr. Agarwal:**

Thank you for sharing that with us. I'm actually quite fascinated, as a pain physician. We're always looking at failed back surgery and degenerative degenerative disc disease, but Arachnoiditis is not something we routinely look for unless there's a reason for us to think about it; which we'll get into in a second. The etiology of it has expanded over the last several years, but just to clarify, so this is not something that radiologists routinely look for?

**Dr. Tennant:**

They are now, I can tell you that. When I started looking at MRIs five or six years ago, you never saw a radiology report with this diagnosis. Today you see it routinely. In fact, sometimes radiologists will call it, "yes, it's there" or "no, I don't see it" and vice versa because you can get into where you're not really quite sure whether you're just looking at inflammation in the cauda equina or not.

Nevertheless, it's still an inflammation and I know it'll happen because first off, it makes practice a little more fun. You can look at those MRIs in between patients or on the run; so it's no big deal really, it's clearly quite simple. This way we don't just have to sit there and say it's a failed back or it's neuropathic pain. We can put a little more substance to it. That's what makes it easier and better treatment. I could teach a fifth grader how to read those MRIs, they're not that tough. It's new and it's like anything else if. If you've never done; it's done it it's like driving a car. It's hard if you've never done it, but these MRIs are easy to read once you get the hang of it, of course.

**Dr. Koneru:**

For the audience, maybe we can go into the causes of neuroinflammation and Arachnoiditis. There's a lot of people who are learning about this now for the first time and they may be thinking, "well this is something that's pretty rare" and "I'm not having spine surgery, or an epidural, so I'm probably not at risk". But it actually ends up being a lot bigger than that. A lot more things can cause neuroinflammation than those invasive procedures.

**Dr. Tennant:**

First off, I think it's changing now, but in recent years a lot of the patients got it after surgery, or after an epidural, so they always blamed the epidural or the surgery; but that really wasn't the case. Why did they have the surgery or an epidural in the first place?.

Today, the main cause of Adhesive Arachnoiditis, and it's a cascade, is that almost all these people started start off with multiple protruding discs; so it's really a disc disease. The second most common cause we see today are those people who have genetic connective tissue or collagen disorders, of which the most common name is Ehlers-Danlos syndrome. Those two things appear to be the two main causes.

We still see a handful of people who have trauma. They've been in an auto accident. We also see a few people that we think were viral, but they're quite rare. We also see a handful of autoimmune diseases. And interestingly enough, something like psoriatic arthritis seems to be associated with these things. But basically we're looking at a degenerative spine issue in which people have protruding discs.

The research on this is fascinating and I don't know why we didn't put two and two together some years ago. But those protruding discs have now been shown distinctively to have inflammation themselves.

And so the protruding discs have inflammation. We don't know whether inflammation starts and causes the protrusions or whether the protrusions develop the inflammation. But once you get inflammation under the disc, that disc is pushing on the arachnoid dural covering; and that inflammation can spread just like cellulitis on the face. It's just like MRSA. So it'll start spreading and it can go from those discs to inflaming the covering and then maybe pick up some nerve roots.

Epidural fibrosis is an old diagnosis. In other words, the inflammation may go up into the epidural space, and if it gets there long enough in the cauda equina, that's when you can develop the Adhesive Arachnoiditis. It is my firm goal to let people know, and I'm letting myself know that you try to get these people at the disc level, or the cauda equina level rather than waiting till you get Adhesive Arachnoiditis; because that's a horrible disease. It's just the suffering, and early deaths, and everything is just terrible.

We're making some headway, but I think what's neww, and what's a little shocking, is that we have these common degenerative spine problems now, and there's a lot of reasons for it.

We're not sure why we see people all the time that have protruding discs, but we really don't know why. We know about sedentary lifestyles, we know about obesity, we know about no exercise, we know about lousy diets; but we've got literally thousands of people out there that all of a sudden are coming and presenting with these discs that are protruding, and we really don't know why.

One other thing that I want to say out front is that it's a big misunderstanding. The medical profession, including those of us in pain management and surgery, there's a lot of talk about unnecessary surgery and unnecessary epidurals. On the other hand, what do they want us to do, you know?

We had to do something. And I know this is not a pleasant statement to make among a lot of the advocates, but epidural corticosteroid injections into the epidural space have probably prevented more Arachnoiditis than it is caused. That's one of the potential risks, but that doesn't mean you shy away from it. I like to make that point out there because corticosteroids are an absolute essential compound for these spinal inflammatory conditions.

The reason is that most physicians have no clue about... and that is to treat these problems... you've got to take agents that get across the blood-brain barrier and get into the spinal fluid, and that menu is pretty short. We don't have a lot of drugs that do that. I hear a lot of complaints about medical care, but when I get into it I don't see negligence; and I know, I've appeared in a few malpractice cases. The, the doctors weren't to blame. They did what was indicated, and so these problems are getting worked out.

**Dr. Koneru:**

You bring up a really important point. When my father was initially diagnosed, there were several doctors that he saw that just told him to take opioids and go home. I think that there is a disconnect when people hear the word inflammation of the spine and really, neuroinflammation is very different. The management of neuroinflammation is very different from just your typical inflammation. I think that's the key and you have identified a protocol involving several different medications to effectively manage that, so maybe we can start going into that.

**Dr. Tennant:**

I'd love too because physicians... let me just throw out one thing that was kind of a clue to this. Most this., most physicians recall that years ago they brought Toradol onto the market and its primary use was by emergency rooms, or doctors who would treat acute pain flares in their office. Toradol worked very well, but you know nobody bothered to ask the question why, now we know why. It crosses the blood-brain barrier and it gets into the spinal fluid in high concentrations. So it's a wonderful drug to calm down spinal fluid inflammation, or inflammation inside the spinal canal, is more technically correct. Unfortunately, it's a compound that you can't take every day because it's toxic, but it's very potent. Interestingly there are 's about 13 commercial corticosteroids on the market, but. But only about two of them cross the blood-brain barrier and get into spinal fluid in very high concentrations.

And that's dexamethasone, which is being used for Covid a lot. And the other one is methylprednisolone. Those have also been ones that have worked well for us in the epidural injections.

Prednisone occasionally will work pretty well, but the others hardly do much. What I'm getting at, is that these drugs that get into spinal fluid and really work on something like Arachnoiditis have to be administered by a physician who understands what they're doing and understands the dosages. And the patient has to be aware of the risks and know what they're doing relative to a risk/benefit ratio. But on the other hand, if you don't do something with those... it's surely is unfortunate.

Let me say one other thing, and that is the greatest thing that's come out of this, some of the old herbal anti-inflammatory agents work very well. I mean old-fashioned turmeric or curcumin ought to be taken by everybody. It's a wonderful anti-neuroinflammatory drug. Some of the old drugs like boswellia and some of the homeopathic agents. There's one called serrapetase and andrographis. These are herbs, that for some reason or another, they will cross the blood-brain barrier and get into the spinal fluid better than a lot of the prescription drugs.

Of all the anti-inflammatory drugs on the commercial market, only three have found much use. One is the old drug Indomethacin. Somehow or another, it likes to get in the spinal fluid. And Diclofenac is one of the new ones that does too, although a lot of patients are reporting Meloxicam seems to be helping. But those are about the only standard anti-inflammatory agents that do much. The standard Motrins and Naprosyn, and stuff, they just don't get enough into the spinal fluid to help neuroinflammation; so that's our menu. It isn't long, but we've got enough that people can start getting some help.

20:25

**Dr. Tennant:**

Let me say one last thing about the other drug that really needs to be talked about and that's naltrexone. It's being used for a lot of things, but we don't really quite understand how this thing works. I was one of the original investigators in using naltrexone for heroin addiction, then later for obesity; and alcoholism. It has got a lot of multiple effects, and I consider it to be one of the first line treatments for Arachnoiditis. In a new case you certainly want to try naltrexone, and some low-dose toradol, and toradol; and methylprednisolone, or something like that before you go to opioids. You start out with safer, easier things. Unfortunately, those people that are tragic are gonna have to go to opioids, intrathecal pumps, and implanted stimulators. We're going to have some of that too, but in new cases you want to go with the safer, easier things that seem to work.

**Dr. Agarwal:**

Dr. Tennant, I love this multimodal analgesic plan that you've come up with for Arachnoiditis. Bobby and I are big proponents of turmeric to use as an anti-inflammatory, both in our own lives, and I recommend it to every single patient; but you brought up an interesting point that I actually didn't know that turmeric also crosses the blood-brain barrier.

**Dr. Tennant:** Yes.

**Dr. Agarwal:**

Okay. So that's another great drug to add to the armamentarium. I was reading your handout earlier. You also mentioned something about deer antlers. How does that work into this treatment regimen?

**Dr. Tennant:**

I'm so glad you asked. Two years ago I'd never heard of deer antler velvet Deer Antler Velvet and I thought it was a joke. When they told me that somebody took this as a medicine I said, "You've got to be kidding!"

Anyway, there are two compounds out there that are interesting. One is colostrum, and the other is a deer antler velvet. Colostrum is secreted by women, or animals, right in a few hours after birth. But what colostrum has in it is all kinds of hormones: human growth hormone, human chorionic gonadotropin, insulin growth factor, and epidermal growth factor. In other words, if you lay out all the hormones in colostrum, and the same thing is the case with deer antler velvet; you've got all of these hormones that are pro-growth hormones. They're cheap, they're simple, they're safe. It gets awfully tough and awfully expensive to try to give somebody growth hormone and human chorionic gonadotropin.

There are apparently some deers, most of them in Australia and New Zealand, called red deers,; and their antlers have inside them this velvety substance that is essentially their pituitary, and it can be taken out.

Thousands of years ago, the deer antler velvet was known as the king and queen's medicine, because it was only available for the hierarchy of society. If you don't quite know what to do for these people, you can't hurt anybody by telling them to take these simple, inexpensive hormonal products. I like them to try that before you go to chorionic gonadotropin, testosterone or estradiol. I like those nice inexpensive things that have a lot of hormones in them. Do they really work and would they hold up in a double-blind study? I'm not sure, but nevertheless I like the theory. The theory is pretty good.

**Dr. Agarwal:**

Okay, great. That's really good knowledge for us to know.

**Dr. Koneru:**

I've also read your handbook, and for patients who have been diagnosed with Adhesive Arachnoiditis, or you have a family member that has it, I--I strongly recommend that you download Dr. Tennant's handbook. You can get that online if you do a Google search. It comes up very easily, and it is from the Tennant Foundation. It's very useful, and one of the best parts about this handbook, is that it really simplifies something that's very complicated.

One of the things you say in there is that the best way to treat this, and have the best outcome, is to catch this early and to start treating it early. You mentioned that there's kind of a multi-pronged approach to treat AA. You talked a little bit about the anti-inflammatory agents already, such as, , naltrexone, methylprednisolone, e; and dexamethasone. You also talked about the non-prescription anti-inflammatories, like curcumin. The next one is the neuro-regenerative agents. Can you talk about that a little bit?

**Dr. Tennant:**

That's where the hormones come in. I really believe in what I call an anabolic neuro-regenerative program, and not just the drugs. But these people need a diet that's high in protein, and some anti-inflammatory vegetables. Some of the vitamins are regenerative: vitamin C, B12, magnesium threonate, ; so I believe in these things for neural regeneration.

I haven't gotten into it too much, but I am a believer that if you're going to try to recover from some of these problems, you're going to have to probably take one of the things related to it,-- or one of the compounds called neurosteroids. Here's another new concept. The, the spinal cord and the brain itself, makes about four or five compounds; hormones if you will, they're now called neurosteroids, and the good Lord has put them there for the sole purpose of healing neural tissue. I'm going to rattle them off: pregnenolone, allopregnanolone, progesterone, estradiol and DHEA (dehydroepiandrosterone). I don't know that the spinal cord makes its own testosterone, but the estradiol , and DHEA convert to testosterone. Right now, that's part of my research. I know we need to be using these things, but I don't quite have firm recommendations. I hope to come back in six months or a year and give you some hardcore recommendations.

I'll give you a couple of simple things. I've been around medicine long enough to know that years ago, practically every woman who reached menopause took a shot of estradiol at her doctor's office once a month, or twice a month; and I think we saw less pain, and maybe there was something to this. Certainly the rheumatologists who treat lupus have found that DHEA, at a dosage of 200 milligrams a day, is very therapeutic. A lot of rheumatologists put every lupus patient on DHEA 200 milligrams, and there's a pretty good reason for that. DHEA converts to estradiol and testosterone, and maybe a couple of other hormones that heal inside the spinal column.

We are doing something else in research, and I'll go ahead and bring it up. If they do develop Adhesive Arachnoiditis, and the pain is so terrible they're disabled, even when you put a pump in them like an opioid pump or an intrathecal stimulator; they still may not do well. We are

finding that there are two hormones that doctors resist, and I don't blame them, because it takes time and studies. One is a human chorionic gonadotropin (HCG), and the other is anabolic steroids: nandrolone and oxandrolone.

Let me just say a couple of things about these two hormones. Human chorionic gonadotropin is what goes way up when a woman is pregnant, that's a pregnancy test. Why does it go up? Human chorionic gonadotropin has two wings to it, two amino acid chains. One contains the identical hormones of luteinizing hormone, follicle stimulating hormone, and thyroid hormone. Believe it or not, all those prohormones are one wing of HCG. The other wing is the hormone that a pregnant woman uses to grow the embryo's brain, nervous system and skin.

Those Adhesive Arachnoiditis patients that have found a cure, or almost a cure, have almost all taken HCG. HCG is controversial. It's been abused, used for weight and for sports, and now it's pretty expensive. You have got to get it under the trade name Pregnyl, but nevertheless it makes some sense. Anabolic steroids grow tissue. Again, it's been a bad word because they were abused in sports, so the word "anabolic steroid" has everybody thinking that the woman's going to start growing beards, the man's going to get testicular cancer; and they're scared to death of anabolic steroids.

30:31

The FDA label for anabolic steroids is "wasting disease" catabolic deterioration. At the time you get Adhesive Arachnoiditis, you've moved into a catabolic state. You're slowly dying, and your tissues are going. That disease just takes you over. We're using nandrolone, and that's the FDA indication for this kind of a disease, but it's hardly ever been used. We haven't done any blind studies, but we're certainly getting good open reports on the use of that. I know one physician that has got about 30 Adhesive Arachnoiditis patients and he's got them all on nandrolone 25 milligrams, twice a day. I've gone in and interviewed some of those patients and they're doing beautifully. I'm a little shocked, in fact, on how well they're doing. Any compounding pharmacy can make it and it's relatively inexpensive.

The bottom line is that I don't want to be a missionary about these things, but I do want to call people's attention to this; bringing a dimension to medical practice that's new, it's different, it's a little frightening. You'll wonder "can this be true?" but we've got diseases that we don't have anything else. It is new, and I think that a lot of doctors are just going to have to put their toe in the water and give it a go.

**Dr. Koneru:**

Outside of managing inflammation, which we talked about, the other step is to get medication that augments neuro regeneration; which is what we just talked about as well.

The other thing that happens, as you mentioned, is that the csf fluid can actually get blocked; there can be a blockage when you get Arachnoiditis. What do you recommend to help with that?

**Dr. Tennant:**

I'm so glad you asked. I have come up with another new term that nobody's yelled at me yet, I call it, "spinal fluid flow exercises" because what really happens in that bottom part of the spinal canal is when you get Adhesive Arachnoiditis, it's really a tumor. It's a mass of nerve roots and covering together. I must confess I never bothered to find out until a couple of years ago, when I started studying. I did not realize that the spinal fluid turns over about four times a day. All of us humans make new spinal fluid about every four to six hours. Now, that must mean that it's pretty valuable. Blood doesn't turn over except every three or four months, same with lymph,; but spinal fluid is turned over every few hours. It has physiological purposes of cleansing, lubrication, and carrying out inflammation that we don't even understand. It's rarely been studied, but we do know one thing, when you get that mass of nerve roots down in that spinal canal,; it's like putting logs, or a dam on a creek. It's going to back up the fluid or disturb it.

Incidentally, there have been some medical engineers who've studied this, of all things, and have actually shown that the flow gradient is changed with Arachnoiditis. Why anybody bothered to do this study, I don't know, but I'm glad they did. What do you do about it? I'm a great believer in exercises. There's simple stuff, for example: I'm a great believer in walking on a trampoline, swinging on a swing, or rocking in a rocking chair.

You may or may not know who Dr. Janet Travell was, but Dr. Janet Travell was a physiatrist..(unintelligible), and her father was one also. She was the physician who took over John F. Kennedy's care when he was ready to commit suicide after he failed all the surgeries, couldn't walk, and was going give up his Senate seat. One of the first things she did was make him rock in a rocking chair about four times a day, and she even brought a rocking chair into the White House Oval Office and said, "you're gonna rock several times a day."

Well I don't know whether she knew how it worked, but it apparently increased rocking motions. All these people that I used to see walking around my condominium complex swinging their arms knew what they were doing. Swinging your arms when you walk has been done for centuries, and apparently that gets some spinal fluid moving. The important thing to know about spinal fluid is there is no pump. The spinal fluid is made in the brain, actually goes down and has to turn around, and come back up, ; so it actually flows against gravity part of the time. How does it do that? There's debate over what it does, but some of these old-fashioned remedies apparently do have some merit. I'm a great believer in people walking on a trampoline, deep breathing, arm swinging, rocking on a swing or in a rocking chair. These are simple things. I also think everybody has got to do some stretching.

One other thing about Adhesive Arachnoiditis, which is just awful, is it's really misnamed. It really should be called 'Dural Arachnoiditis', and there are some old pathologists from the 1920's who called it that. They recognized that it wasn't just the arachnoid layer, it was also the dural layer, so the spinal fluid would seep through it into the epidural space; and then on out into the tissues. If you ever see somebody with terrible back pain, they may be having some "leakage" or "seepage" into the fluid into the tissues, and that spinal fluid is toxic. It's not supposed to get out, so they get a lot of problems exercise-wise.

Incidentally, I'm a great believer in several other things like water baths, and I like the old-fashioned magnets and copper. I still think those old remedies do some good, and I think people ought to try those. You get people who like magnets and rub magnets over their spine. You get people who like to put on a brace with magnets in it, or sleep on a mattress with some magnets in it. These are inexpensive old remedies that ought to be tried. People that were around a thousand years ago weren't as dumb as we thought. They came up with some things that still work, and so I like that. Of course, today, one of the things that's come along, has been the use of electromagnetic therapies, ; and I'm a great believer in those..

Pulsed electromagnetic energy is really something that I'd love to see everybody be able to get.

A lot of new things are out there. Bottom line, on any given patient I can't tell you exactly what's going to work, you just have to build a tailor-made program. It's still a rare disease. We don't have any controlled studies and nobody's going to put up the money to do them at this point. But I predict that one of these days we'll have biologics for AA. We'll have some really good stuff, but right now you just try everything you can.

**Dr. Koneru:**

When we're talking about neuroinflammation there's a spectrum, as we mentioned, with Adhesive Arachnoiditis being at the edge of that spectrum and being the most severe. But even amongst Adhesive Arachnoiditis, there's a spectrum within that where you have cases that are somewhat milder, versus cases that are severe; depending on when you caught it, and how severe it was at the time of diagnosis. Would you agree with that?

**Dr. Tennant:**

Yes. Just like in most diseases, I categorize them as: mild, moderate, severe, and catastrophic. We do have a lot of people out there in society who had no treatment. They've gotten into the severe or catastrophic categories. These people have got so much scarring, so much damaged tissue that our inflammatory agents that exercises aren't going to do a lot of good; and those people are going to require hardcore pain management. So I don't want anybody out there to think that we're done with intrathecal pumps for opioid administration, and we're not done with intrathecal electrical stimulators. We need those things in a lot of these people. We need everything we've got out there for these cases. You want to try to catch them in the mild and

moderate categories. Obviously I do think we are seeing a lot fewer people than five-six years ago when I started reading MRIs, there were just awful, just terrible scars, ; and you wondered how they could even walk, and a lot of them didn't. Today, frankly, I don't quite see that. Maybe I'm just optimistic and Pollyanna, but I think we're seeing these people get better. Now they may be getting treatment with just something like Gabapentin or Motrin for all I know, but they're getting something. I don't think these people are being ignored in medical practice anymore. They're getting some treatment, and the social media groups, they're spreading everything every day and that's been a big help. Like I say, everybody can go down to the vitamin shop and get some procurement. Everybody can get something and I think they're doing it, so that's been great to see.

40:28

**Dr. Koneru:**

In the mild to moderate groups, have you actually seen reversals, and what we call cures, where they're off some of these pain medications?

**Dr. Tennant:**

Yes. I would like to think it has a lot to do with my treatment, and every doctor does. I've got some patients that fundamentally are cured, and are not taking opioids. They're hardly taking anything else. Some have taken some odd treatments. Most of them have taken the HCG somewhere along the line. We do have people now who literally look like they've pretty well reversed the condition.

What's interesting is when you look at the MRI, the nerve roots still may look like they are... ,so so, what I think may happen is some of those nerve roots may grow around the scar and give them back their normal function.

I think the big thing about this is everybody should be given some hope. This is just not a hopeless disease, and we can do something for everybody. We can get some relief and recovery for everybody. It may take some rather dramatic treatments. Some treatments you don't like and some risks you don't want to take, but nevertheless, we can get something for everybody regardless of where they are on the spectrum.

**Dr. Agarwal:** That's so important to emphasize. There's something for everyone, especially for someone like me who works with a lot of chronic pain patients...

**Dr. Tennant** interrupts: You probably get the worst...

**Dr. Agarwal** continues: ...not to have that hope can really cause a lot of mental anxiety. If anyone has ever experienced chronic pain, I'm sure you can appreciate that.

One thing I wanted to ask you is that you've come up with a nice cocktail, sort of a therapy for people to try with Arachnoiditis, and do you think some of those things are (extendable) to patients that are suffering from intractable low back pain? Such a common issue that most of the population faces, even something like electromagnetic therapy. I was curious what you thought of that?

**Dr. Tennant:** The answer is 'yes'. I think today there's so many back patients that I don't know how many doctors want to do this, or can do this. I think that probably everybody who's got chronic low back pain ought to probably have a simple inflammatory panel of acetate, CRP, white count. And if they can get it an MRI with contrast certainly would be in order, if the finances are there.

I used to think it was just Adhesive Arachnoiditis, but I've now come to the conclusion that if they get inflammation in the cauda equina nerve roots they're going to have some specific symptoms. If a person can't get an MRI, or these things, you can at least get started on some treatment. Rather than just calling it chronic low back, you can at least get them started.

When they get inflammation in the cauda equina, even before it goes into AA, those people have some interesting symptoms. Almost all of them complain about burning feet, they're burning somewhere. So the burning seems to be typical. The second thing, which I used to be mystified about, is that they all complain about either water dripping on their legs or some kind of insect sensation on their legs.

The third thing is they'll get some kind of bladder impairment. That may be anything from hesitancy to dribbling to where they can't stop. I didn't know this, but I looked it up, there are 21 nerve connections in the cauda equina to the bladder. So it doesn't take much inflammation in the cauda equina to affect the bladder. If they've got a little bladder problem, even though it's kind of minor, and some burning in the legs; along with any kind of water or insect sensation, you can pretty well bet they've got inflammation inside the spinal canal.

You could certainly justify some simple anti-inflammatory treatments to get them started. But again, ; it's expensive and time consuming. Today, anybody who's got chronic back pain , and needs medication every day; they don't make it at their chiropractor, at their physical therapist, and they're in your office or mine. It would be nice to have MRIs on all of them.

**Dr. Agarwal:**

The other thing I wanted to ask you was regarding the recommendation for the high protein diet, and that serving as an anti-inflammatory. You know we do a lot of podcasts here discussing things like diet and what's considered anti-inflammatory for the body. So far, I don't think the high protein diet is going to win in that category, at least in the more recent literature. So what's your take on that? I'm just more curious, both from a professional and personal standpoint.

**Dr. Tennant:**

I'm delighted you asked. I mean when I say high protein diet, this is coming on a matter of practicality. Gluten-free diets, Wahls diet, I could give you a diet, ; and I'm sure that's what you're talking about. There's a whole lot better diet than just taking high protein. What I have found out from a practical point of view, sad to say, and I've taken a lot of dietary histories--you find out that these people haven't eaten an egg. They haven't had a piece of chicken, or a fish, or anything in days. Sometimes they almost look like they have a pure sugar diet. And so when I say a high protein diet, what I really mean is, would you mind eating a piece of chicken or an egg or a piece of fish eachfish each day? I really ought to call it 'eating a protein a day diet'. It's not what you want. I know where you're coming from and I agree with you. I just found that, from a practical point of view, people in America have a lousy diet. I just want to call it like it is. I can't get people to follow a good diet.

**Dr. Agarwal:**

Point taken. Basically you're saying the further you can get away from the standard American diet, the better. I think people do have poor nutritional IQ, and so I see what you're saying. You're just trying to give people a well-balanced diet.

**Dr. Tennant:**

Everybody buys fast food, particularly with the Covid virus. Everybody is driving through any number of fast food places. So the diet has probably gotten worse in the last year. You've got to get some protein because all your neurotransmitters that are involved with healing come from an amino acid..

Whether W Whether it's dopamine, serotonin or endorphin, all. All those are protein based. I tried to get them to eat some protein, but now that you brought it up, I haven't been very successful. So if you have got a better idea, let me know about it.

Let me say another thing too, I hate to bring this up, every time I send somebody to a nutritionist, they give them a nice complex diet that they don't follow. And so we need some kind of a simple diet that'll get something done, I'm all ears. I've been a little discouraged trying to teach people diets, I'll be honest about it.

**Dr. Agarwal:**

I think it's very challenging, especially because the standard American diet has evolved. We have a lot of work to do now to overcome some of our long-standing thinking. So slow changes. We're hoping that people will get good information from this podcast

**Dr. Tennant:**

I got a letter yesterday when somebody wrote to me and said they were on the Wahls diet, plus our protocol, and they were clear off almost all medicines and were we're only in pain some days. She's almost down to cure status, and was really following a really strict low carbohydrate diet. She's really doing it the right way. I'd like to clone her and have her teach everybody. I think we've got a lot of work to do on diets, and it may pay off. Maybe we're not putting enough effort into it.

**Dr. Koneru:**

One of the symptoms I've been hearing a lot when I go onto social media, and look into some of these groups, is that they find it hard to sleep. With all of these protocols, and regimens of medications that people with neuroinflammation take that really impacts their sleep, what kind of recommendations do you have to help with that?

**Dr. Tennant:**

If they have constant pain, 24/7 pain, they're gonna need some kind of medication. We'd love to be able to give everybody 10 or 20 mg of melatonin, and a couple of valerian roots, or a couple of tryptophans and hope they would sleep.

I'm afraid that we physicians are going to get the difficult cases, and those people are going to need sleeping medications. I'm always amazed at the panorama of ones that seem to work. You've got a lot of patients these days taking old-fashioned amitriptyline, nortriptyline, and trazodone. Plus they're taking the newer ones: the Ambiens, the Lunestas, the benzodiazepines, are still out there. I think that a lot of these people, by the time they get Adhesive Arachnoiditis, they're probably going to have to have medicated assisted sleep.

**Dr. Koneru:**

Yeah, that makes total sense. From your experience, when patients are taking drugs like naltrexone, is there a time limit as to how long they can stay on it or is naltrexone a pretty safe drug?

**Dr. Tennant:**

Looks pretty safe. But you know, everytime we say that, drugs are funny. They get down into the one year, the two year longevity, and then you see the complications. I get asked all the time, "How long am I going to need to take these medications?." Let me answer that, if a person gets to where that pain is gone, and they're ambulating, I think they ought to cut back. I hate to see them stop something like their curcumin, deer antler or some of your natural safe things as kind

of an insurance policy. If they can get to where they get that pain down, I don't see any reasons why they should stay on the corticoids, and a lot of these other medications. You wanna try and take them off.

I don't want to tell people that I think it's a lifetime for you. My pitch to the patients is we've seen too much progress with inflammation in the spinal canal, so. So let's not talk in terms of this being a lifetime proposition.

Let me tell you my basis for saying this, like I said, I'm an old internist. I remember the days with rheumatoid arthritis we used to give them a shot of gold. We used all these terrible old medications for rheumatoid arthritis, and now we've got these new biologics. In some ways we've got these long term trends, or patterns of rheumatoid arthritis, and spinal canal inflammation are kind of the same. They're going to go into remission. They're going to go into relapses, but I don't think we ought to be telling these people that they need to keep taking these things their whole life while we're trying to get them into remission. You can always restart a drug.

Anyways, that's kind of where I'm at on things. I think we're getting more and more people like that. People are coming forward. Let's say they are one of the unfortunate women who looks like they're developing AA, or a similar condition after epidurals for delivery, after surgery,; even trauma, what have you. We're getting a lot of those people early now, and they're getting a pretty good result. I just would hate to see them told to stay on all these medications for life. I think we want to try to tell people no. That's why we call it hope. We're going for cures and we hope we can make it.

**Dr. Koneru:**

Of course we want to be respectful of your time because we can continue to talk about this complex disease for a long time. But to be respectful, I just want to summarize really quickly what we talked about. These neuroinflammatory diseases have a spectrum of severity, anything from just mild inflammation, all the way to Adhesive Arachnoiditis. The best way to manage them is to catch them early. Once you catch them there's a multi-pronged approach. Number one, you have to manage the neuroinflammation by taking neuroinflammatory agents such as steroids. We have to help facilitate CSF (cerebral spinal fluid) flow because that can get blocked. Then you talked about exercises, stretching and even a rocking chair can be effective. You talked about neuro-regeneration, because some of those nerves can get damaged. You mentioned hormones, so certain hormones can help with that. Then we talked briefly about some being able to manage the pain effectively. We didn't really go into specific pain medications, but I know that there are several, such as gabapentin and opioids when they get really severe. Is there anything I'm missing? Is there anything else you would like to talk about before we get off?

**Dr. Tennant:**

No. You pretty well covered it. And the multi-pronged approach is what they're gonna need. Most of these things could be done and I just would like to say this... patients seem to respond to something that I've sort of been telling them... I tell them you got to build your own program. One of my great pet peeves today is the American public, and I suppose this is true in other modern countries. Because of pharmaceutical and medical device advertising, we have been given the erroneous belief that there's one drug for one disease, one procedure for one disease and there's a magic bullet for everything! Right now it may be stem cells or maybe something like that.

We have this burden today,-- and we have to tell people that there is not a magic bullet. You're gonna have to approach these things by several different things, and you have to continually work to build a program for you. You've got to tailor your own program, and your doctor will work with you. Just let them know that you're willing to do that, but not looking for that magic bullet. I think that with some of this advertising on television, you'd think there was one drug for everything. From erectile dysfunction, to diabetes, to dementia-- and that's just not true, and I hate to say it.

You don't see many practicing doctors out there on the advertisements anymore. We're kind of in the shadows, along with the patients. But we've gotta try to let them know that-- that's the way it is. I will help you try to build your own program, but it's not going to happen fast, and it's not going to happen with any one treatment. You're going to have to put together a package, or a program, and I do think that's my pet peeve. I think I spend more time talking about that, or writing about that, because they all have got this thing in their mind that we're holding back that one treatment that'll cure them, and it's just not the case!

**Dr. Agarwal:**

You bring up a really good point Dr. Tennant, because you know, especially with certain syndromes like chronic pain syndromes, there is not a one-size-fits-all. And we know that the direction of medicine needs to change into more personalized medicine because everyone's a little unique in dealing with different issues, different stressors in their life which may be compounding their issues. I do think it's very important for people to understand that it is a multi-pronged approach.

I wanted to also thank you for elucidating the details of this pathology in more detail and potentially helping some people to identify what the next steps for them are. I have two last questions:

"If someone was interested in finding you, or getting a consultation from you, where can they reach you?"

**Dr. Tennant:**

They can contact our Foundation office, and if they really want to be seen, I've got doctors that take them--and I'll consult with them on that.

Let me tell you another thing., I don't want to say I discourage people from calling me, but in some ways I do to some extent, and I'll tell you why.

This problem is in every community in the world. We're going to have to have physicians in every community learn about this disease and take these patients. Of course I enjoy it like any other doctor, I love it when they see me, and they give me accolades and tell me what a great job we're doing. On the other hand, from Maine to Miami to Montrose, .. we need doctors, nurse practitioners, and chiropractors. We need the medical field to understand they've got to look at the spinal canal differently.

These people are here. You just can't pick up the phone, and find a high-powered specialist across the country, put somebody on a plane to go there and see them. That kind of gets into that one-way thing. My goal of my Foundation is to bring a treatment of Arachnoiditis to every community in the world.

**Dr. Agarwal:**

Wonderful. The last thing I wanted to ask you is that this is a longevity podcast, and we're very big on self-care. You are a busy, very busy man, doing all the research you do, and the people that you help. What do you do for fun, or what is your guilty pleasure?

**Dr. Tennant:**

In reality, medicine is really my hobby. I have another business that I run. I live in Wichita part of the time, in Los Angeles part of the time, and I have a business that I love dearly in Kansas. I finance rural real estate. I have our Foundations. I also have a bunch of collections of antiques and stuff that I also deal with, and then I have the world's largest collection of antique shoe horns.

Anyway, I have some corny hobbies like everybody else, and my wife and I enjoy those things.

**Dr. Agarwal:**

Did you say shoe horns, you have the world's largest collection of shoe horns? Very interesting. Whatever brings you into your flow state, that's wonderful.

**Dr. Tennant:**

So anyway, my wife and I take a lot of time out and do some traveling, so don't feel sorry for us. We don't even consider ourselves old. We're going for a hundred.

**Dr. Agarwal:**

So that's perfect, that's what we love. Well, thank you Dr. Tennant. We have taken enough of your time and we will cheer you.

**Dr. Tennant:**

Thank you for the good work. I sure appreciate what you're doing, thank you.

**Dr. Koneru:**

Thank you for all you've done for the community!

[Music]