Academy of PHYSICAL MEDICINE

Transcript

Myogenic Thoracic Outlet Syndrome – Ref 292

Steven Bruce
Good afternoon. And thank you for joining us for the second of this week's live broadcasts. My guest today joining us by video link from Tel Aviv and from Baltimore. And they are respectively Simeon, Neil Asha and Professor Bob going. Now Simeon, I'm sure you know, is an osteopath. He's made his name, really intriguing frozen shoulder and on the topic of trigger points. Professor Gerwin, on the other hand, is an MD. He's a neurologist from Johns Hopkins medical school out in Baltimore. And he is a world expert on trigger points and has used them to great effect and he has many years in clinical practice. Between them. They have also run a number of face to face courses on needling around the world, including right here in the APM studio. And in fact, they're running another one here in May this year. What's more, they have developed an amazingly helpful app which I'm sure we're going to hear more about as we go through things this afternoon. So gentlemen, great to have you with us. Simeon, I think you were going to lead off when you were the sort of an osteopathic, or a physical therapy take on this before Bob does some of the scientific stuff.

Simeon Niel-Asher
Yeah. So first of all, thank you again for inviting us in. It's always a pleasure. You're very polite. We're looking forward to that to the course the last course we felt went quite well. But but that was only you know, the start. Hopefully, the next one will be even better.

Steven Bruce
Sorry, I have to take issue with you there. The last course didn't go quite well. But the last course went amazingly well, the feedback was astonishing.

Simeon Niel-Asher
Okay, look, Bob and I have Yeah, we've come to talk to you today about Thoracic Outlet Syndrome now as an osteopath, you know, when I was when I was at college, a lot was spoken about the first rib, elevated first rib. And, of course, I love doing the prone side bending rotation HVT of the first rib that very satisfying manipulation. And it does actually improve for me, once we've screened the patient, properly, symptoms of Thoracic Outlet Syndrome, but of course, the question is, is it true Thoracic Outlet Syndrome? Or is it something else? And, and really, what are we doing when we're doing the HVT. So clearly, we're having an effect on the scalings that we will agree on. The anatomy of the scalings is,

you know, the anterior and middle scaling camp start in the first rib and the posterior scaling on the second the second rib, and the brachial plexus does go through it, I'm not going to go into the neurology. I'm going to save that for a professor go and but one of the things obviously, that I've been passionate about is trigger points and trigger points make the host muscle less efficient, they make it fatter, they shorten it. And they can have a kind of compressive effect, a watershed effect on the vasona forum and also on the plexus itself, Plexus apathy. So certainly from an osteopathic perspective, assessing it properly, getting that first rib moving, looking at the whole thoracic spine. But but the question is, you know, is it true thoracic outlet, what's true thoracic outlet? And I, you know, I'm happy to pass it over to Bob, just to say that when we Bob and I were talking about this, he said to me that it for the longest time one of the most commonly performed operations in America was removing the first rib. So of course, as I said, you know, the screening Addison's and Roos procedures. And with that, I'm going to pass it over to Professor go.

Bob Gerwin
Oh, thank you. First of all, Stephen, thank you for inviting me to join you today to talk about threat grassa gauntlet syndrome, which is a topic that is really as a great deal of controversy associated with it. I'm going to show the first slide, which is simply the title slide, but Thoracic Outlet Syndrome really is a problem of shoulder, arm and hand pain and associated in truth Rafic Outlet Syndrome are neurologic abnormalities related to nerve compression, nerve entrapment, resulting in loss of sensation, weakness, and atrophy. So the clinical diagnosis has of true Thoracic Outlet Syndrome as nonspecific symptoms of pain in the shoulder, arm and hand and nonspecific because they occur in other conditions. For example, in a non nerve compression condition and an autoimmune disorder of the brachial plexus called parsonage Turner Syndrome, you will get pain in the shoulder arm in hand. That's and with musculoskeletal disorders, you get pain in the shoulder, arm and hand so those are not specific. But in Thoracic Outlet Syndrome, the specific syndrome symptoms are neurologic paraesthesia is sympathetic irritation, causing Raynaud's phenomenon weakness, sensory loss, and ultimately atrophied.

Steven Bruce
Because ask a quick question. Can you just tell me what pulse nice Turner is?

Bob Gerwin
parsonage Turner Syndrome is an autoimmune disorder which affects some or all of the brachial plexus, usually on one side. What triggers it is unknown why it's localised to the brachial plexus is Unknown. It presents with usually with pain in the shoulder and the arm was century lost in the hand there may be weakness associated with it. It is not steroid responsive, but it is auto immune. And it is clearly not a nerve entrapment syndrome. So it is simply another brachial plexus neuropathy or brachial plexus itis, if you will. That is neither caused by muscle trigger points nor caused by nerve entrapment. And the nerve entrapment is really what I'm going to be focusing on in the next few slides. So this slide is simply a picture of the or cartoon of the anatomy. And at the top in the neck, you see the arrows pointing to the anterior scaling muscle, the middle skateable is hiding behind it. And then you can see the clavicle and you can see the first and second ribs and you can see the pectoralis minor muscles that run from the ribs to the coracoid process of the scapula on either side. And I think if we then look at this a little more closely, in the figure on the right side, you can see where it says a there's a space between the anterior and middle of scaling of muscles. And you can see the nerve roots from the cervical spine passing between those. Then at B, you can see the clavicle and below that is the neurovascular bundle. And below the neurovascular bundle is the first strip so that the neurovascular bundle passes between

the first rib and the clavicle and see as the pectoralis minor muscle and the neurovascular bundle passes between the pectoralis minor muscle and the thoracic cage or if you will of passes underneath Below the pectoralis minor muscle. And this anatomy is helpful in understanding the concept of true neurogenic thoracic outlet syndrome where nerves are entrapped. There is a vascular thoracic outlet syndrome that we're really not going to talk about that where the compression is in either the the artery or the vein but not so much the the brachial plexus there is a traumatic form of Thoracic Outlet Syndrome which is really caused by a fracture of the clavicle with Malyon which causes a large callus to form that that compresses the brachial plexus. And finally there is a disputed which is everything else, if you will, including what I call myogenic Thoracic Outlet Syndrome or thoracic outlet syndrome and muscle origin, just to spend a moment on true neurogenic thoracic outlet syndrome. It is almost always associated with a cervical rib, which is a long transverse process of the C seven and you can see that in the X ray image on the upper right of this part of the screen. And it is very often associated with the ligamentous bad that goes from the tip of the cervical rib down to the first rib. And the brachial plexus then is draped over the cervical ribbed or draped over the ligamentous band and the lower fibres. The lower elements of the brachial plexus to the cervical roots are then stretched and stretched to the point they become dysfunctional. So true narod nerd and true neurogenic or neurologic Thoracic Outlet Syndrome is not common. It occurs more in women than men. You may see it in women with sloping or men for that matter with with sloping shoulders that is a predisposing anatomic variation. As I mentioned in talking about the the illustrations here, it's most often associated with a bony abnormality the cervical rib or the ligamentous band where or the Lord truck is stretched over the rib or the band. But again, that is not very common true juris neurogenic Thoracic Outlet Syndrome is not so common.

Steven Bruce
Can I just ask about that bobbin in your surgical history, when you get cervical ribs, would you remove a host of ankle rib or just remove the ligament suspend?

Bob Gerwin
Well, you really you could remove the cervical rib, but what you really really do is remove the ligamentous ligamentous band, and you usually will remove the first rib. And that goes to the relationship or speaks to the relationship of the scalene muscles to the first rib, which really doesn't speak to the ligamentous band or the cervical rib. You answer your question is yes, you would, you would certainly remove the ligamentous band and the offending cervical rib.

Steven Bruce
What do you do aliens?

Bob Gerwin
Well, you have to escape anatomy when you remove the first rib. And so you you basically disconnect the scalene muscle from its connection to the first trip, and it no longer attaches to anything. Right. So you just you're basically do without it. There is a blending, if you will of of neurogenic and what I call myogenic I have to say that I'm probably the only one in the world a uterine myogenic Thoracic Outlet Syndrome, although I've tried to correct that meaning that this is the thoracic outlet syndrome related to muscle problems. And they arise in three out of these four sites that are on the screen you have two scalene muscles attaching to the first trip the anterior and medial scanning muscles in between them as the interest gaining space. Now if you have a trigger point in a muscle with a a tight band of muscle that shortens the muscle, the volume of that muscle cast to remain the same muscle being 75 80% water you change the shape of a vessel but the volume is the same so if you

shorten the scaling muscle, then the cross sectional diameter cast to increase so the muscle gets thicker. And you can have if you have trigger points in the anterior and medial scaling muscles, you can squeeze or obliterate the interscalene space well that space as the brachial plexus elements that as the proximal nerve roots from the cervical spine passing through it so those nerves are compressed. The brachial plexus passes under the clavicle and above the first rib. So if you take that the scalene muscles and shorten them, and the anterior and medial skating muscles are attached to the first rib, you elevate the first rib, bringing the first rib up against the clavicle. And then you compress the neurovascular bundle elements that passed between the clavicle and the first rib of the final place of nerve entrapment that's related to muscle is the space underneath the pectoralis minor muscle. So we call the retro pectoralis minor space. And when you raise your arm or abductor elevate your arm, you're stretching that and we'll see that in the next the slide after this you'll see that the prep duction syndrome so those these are three places where muscle trigger points will cause a nerve compression oil SCREW YOU WILL neurogenic Thoracic Outlet Syndrome, which is not related to a cervical rib and which is not related to a ligament is bad.

Steven Bruce
So we've got a lot to get through Bob. I'm sorry. The time delay makes it difficult asking questions like this but somebody did ask earlier on Atsuko asked how do you distinguish between vascular and neurological thoracic outlet from the symptoms?

Bob Gerwin
Well, the vascular Thoracic Outlet Syndrome is associated usually with ulceration and in the fingers and embolize he could flame shape 10 bridges underneath the fingernails. You get small alterations in the fingertips for an arterial Thoracic Outlet syndrome and you will also get pain on on use of the of the arm you get essentially claudication symptoms for venous entrapment, you get swollen veins edoema. So that's an entirely different picture. It may be present concomitantly with a with neurologic symptoms, but they often occur by themselves. So when you have muscle involved, or myogenic, what I call my genic Thoracic Outlet Syndrome, you have a cause of neurovascular compression, as I mentioned in the interscalene space in the space between the first rib and the clavicle, and the space underneath the pectoralis minor muscle. But the other and I think much more common cause of Thoracic Outlet Syndrome symptomatology causing pain in the shoulder but without neurologic symptoms is a mimicry of thoracic outlet syndrome where the only symptom is pain. And it's caused by repaint by referred pain from trigger points in the any of these 26 shoulder related muscles or in the standing muscles in the neck. And we'll see that in the final slide. The present slide or simply shows the anatomy a little bit more clearly. In the left hand picture under the heading inter scanning compartment, you can see the two scanning muscles running from the neck down to the first rib, the clavicle has been removed here, you can see a cervical rib attached directly with a short ligament as bandha the first rib and you can see the artery with a post compression delimitation an enlargement of the subclavian artery. There is no nerve bundle shown in that left picture in the right cartoon under constant livecareer syndrome. You can see the elements of the brachial plexus as they go between the first rib and the clavicle. And then you can see that if you elevate the clavicle by this gaining muscles, shortening and pulling that clavicle up, and you can see the two scanning muscles in that right hand or tune. So you can see how the neurovascular bundle can be compressed in the coelicolor space. In this cartoon, you can see the neurovascular bundle as it passes beneath the pectoralis major muscle backbone with pectoralis minor muscle. And as you raised or abduct the arm, you can see how that would be that neurovascular bundle will be compressed under the pectoralis minor muscle causing what's called the hyper abduction syndrome. But I think what most of us will see is illustrated in this slide that

it simply brings together many of the muscles that control the shoulder, I do not intend anybody to look at each picture and try to dope it out, figure out what it is. But using the technology from the trigger point 3d programme the Simian has developed you can see that referred pain patterns from these muscles will reproduce all or part of pain in the shoulder and in the arm that you will see with a compression of the neurovascular bundle. So you can see pain in the proximal shoulder pain down the arm pain into the hand. And since trigger points usually involve more than one muscle, you can see how a combination of trigger points in the number of these muscles will produce pain syndrome that will mimic Thoracic Outlet Syndrome. You'll also get points of transient weakness which goes away when you get rid of the point but you do not get the entropy loss or atrophy the way you get with true neurogenic Thoracic Outlet Syndrome. So that in conclusion, I would say that the truth harasser gauntlet syndrome is rare has neurologic signs of sensory loss, weakness sympathetic nerve irritation is Raynaud's phenomenon. There are objective laboratory abnormality, MRI scan, and electro diagnostic testing. And they're often associated with cervical rib, or trauma such as the fracture of the clavicle with a male union and callus formation. But myogenic Thoracic Outlet Syndrome is not rare and is very common. It's associated with trigger points. There are no neurologic abnormalities unless you have significant entrapment of the neurovascular bundle in the interscalene compartment or in the costal publicat or clavicular space or under the pectoralis minor muscle. And all the laboratory studies, MRI scans, for example, and electro diagnostic testing is is normal. And the treatment for the myogenic Thoracic Outlet Syndrome is to treat the trigger points either by stretching or lengthening the scaling muscles, or by an activating the trigger points. So that in a nutshell is the thoracic outlet syndrome. Now, I will tell you just a very brief anecdote about the acceptance of myogenic Thoracic Outlet Syndrome. I was at the first Aspen conference on the medical problems of musicians and dancers. This is many years ago, and they had the folks from the University of Colorado both the neurologists and the Serbs, wrestling surgeon, they're talking about Thoracic Outlet Syndrome. And they made the point that this was rare and that the most common problem was disputed, which is what I would call myogenic. And I got up and I made the comment that much of what we see is related to muscle and not nerve compression. To wish all of the ballerinas present at the conference and there were many applauded but the neurosurgeons in the thoracic surgeon looked at me and said, Hey, you're crazy. And b this is a highly controversial disputed topic. So the neurologist and the neurosurgeon was Razak surgeons went out to lunch with each other and I went out to lunch with the ballerinas

Steven Bruce
sounds like sounds like a winning and to me.

Bob Gerwin
They appreciated the problems of muscle because they deal with with muscle pain all the time. And they're they're aware of these issues. And Simeon you treat the this manually and was made?

Simeon Niel-Asher
Well? Absolutely. You know, there are two manual techniques that we we employ the trigger point techniques. One is called inhibition compression and the other one's called Deep stroking massage. You know, I'm just wondering if it's possible to try and share my screen.

Steven Bruce

While Simeon is trying to work out the technology, we could be here for a long time. Bob, you talked about this mimicry of true Thoracic Outlet Syndrome? Does that mean that people are having scaling or tummies and first ribs removed unnecessarily?

Bob Gerwin
Well, at one time, the answer is absolutely yes. As it Simeon mentioned, in the 1960s, removal of the first rib was the most common surgical procedure performed in the United States and sort of hard to believe that. That was before the era of MRI imaging. Now I think you really want to go look for anomalies. Anatomically, before you do that, however, I still think that in many of the cases where pain persists, and I think is because people are not being treated appropriately. There missing the muscle component. And I think they don't understand the role of trigger points in the scanning muscles for example. The there's a tendency if you can't get rid of it with with standard with what they call standard physical therapy, which does not involve trigger point. Treatment and a persist I think the tendency is then you got to desperation. You go ahead and you do a first job removal of scale anatomy and release the the and

Simeon Niel-Asher
I'm going to jump in now just quickly. I can't I can't figure out how to share my screen. However, you know one of the interesting things about the scaling muscles is that the maps that Trevelyan Simon's developed they getting trigger points can mimic see five six ridiculous Pathak pain. So you know, there are there's a kind of confluence of symptoms that you can get from the trigger points, you can get the myogenic, sort of my sort of compression symptoms. And you can also get referred pain that can mimic C five, six radiculopathy as well. I actually am treating someone that had a ski not to me at the moment. And I think the other thing that is important to say with the scalings is that we always have this relationship between agonist and antagonist. So you're going to have some sternocleidomastoid problems, if you're going to get the scalenes also the upper trapezius, there's this kind of triangle between the three with the three muscles, you know, remembering that the middle scaling as the most sort of depart sits on the vertebral bodies. So with the trigger point work, you know, we're always looking at I'm sure but we'll agree it's it's never in isolation. And then just to pick up one other thing, which is absolutely what I see a lot is this first rib elevation, this and this is with pec minor. So I meant the pec minor clavicle. And the of course, pec minor comes from the from the coracoid process, you know, quite next to the short head of bicep, short head of bicep, correct a bracket alias. So, we're always gonna get with a pack that's tight as well trigger points there, compression of that neurovascular bundle. I think Bob calls it like a double crush. So we're getting sort of the interscalene space getting that's kind of under the pec minor, retro, pec minor. But again, not to treat it in isolation.

Steven Bruce
So we had a question from says anto here. Could there be muscle atrophy due to nerve entrapment? By pec minor? Or other muscles? I guess?

Simeon Niel-Asher
It just depends on the degree of nerve entrapment, doesn't it? I mean, you've got the depends how far down that sort of axon or whatever is being compressed. Generally, the first as I understand it, Bob's gonna correct me I'm sure that pain is the first symptom, or paraesthesia. After that, and then of course, you know, weakness and the motor component of the nerve has to be compressed for for weakness and muscle atrophy.

Steven Bruce
Yeah, you were talking earlier, about vasona voran being affected. I wonder what the overall effect of that might be?

Bob Gerwin
Bob, yeah, that sort of leads to nerve damage. But you know, it's interesting question about the pec minor because with skating muscle trigger points and obliteration of the inter scanning compartment, the compression of the neurovascular bundle is more constant. That's also true at the cost with COVID cutter space between the clavicle and the first trip when the first trip is elevated. But for the neurovascular bundle passing beneath the pectoralis minor muscle. It's really aggravated when the arm is abducted. So it's really much more intermittent. I can't say that I've actually ever seen atrophy that I could really relate to pec minor alone. But on the other hand, I can't tell you that I do often see pec minor, alone without scalings. Now the the one condition where that would be a real problem would be careful with forward shoulder positioning. And with shortening the pec minor but more than that, people will have chest breathing rather than abdominal breathing. And when you have chest breathing, you use the scalene muscles to elevate the birth driven elevate the ribcage and and use the pec minor is one of the many muscle groups to expand the ribcage. And

Simeon Niel-Asher
I'll come in on that also, which is I know you had that very interesting conversation with Matt Walden about sort of middle cross syndrome. So of course the upper cross pattern sorry my cats about to appear. The upper cross pattern No, not at all. might the Uppercross pattern involves often, you know, the head forward postures sternomastoid, scaling, shortening. And, and again, you know, can lead to that kind of false Thoracic Outlet Syndrome, which, again goes back, you know, clinically, it's one thing to treat the trigger points. Everything in context, obviously, is what it's all about. Just to pick up on another thing. Sorry, last thing that we missed a segue, Bob, which is the pain maps that you put up there, from the software from the app, which are the trigger points 3d, which we would love you to have a look at. But but one of the things about them is that often these trigger points wrap around the body in three dimensions, especially the scalings, you can have referred pain in the posterior parry scapular. Anterior. So one of the great advantages with the software is that you're able to sort of look into 3d and turn the body around and look at where those those maps are.

Steven Bruce
Yeah, and every time we do a show with you, I do recommend this to people because it's it is a superb app. And it's a wonderful, wonderful visualisation of how these things happen. And very, very user friendly, I think. And I'll point out to everybody, I don't get any commission on on the use of the app either. So that's just a genuine opinion. Give you a question or two from the audience. Please send me an Darcy's asked whether Botox is being used to treat Thoracic Outlet Syndrome, if there's a problem of muscle contraction, do you know?

Simeon Niel-Asher
Yeah, for sure, for sure, you know, Botox. We use IMS needling a lot. And in fact, you can needle quite comfortably into the scalings. I think on our course we even cover the middle scaling. And in terms of dry needling, IMS, we can use that in terms of wet needling. You know, Botox, for sure is one of the ways of treating it. I think Bob's keen to speak and on Botox, botulinum toxin, Bob.

Bob Gerwin
No, I think that's absolutely correct. If you can get temporary relief with dry needling or kneeling with lidocaine, but it tends to come back over and over again and for whatever reasons, structural or or work related or whatever the reasons are, it tends to keep coming back. And you do not wish to proceed to scale anatomy and first trib removal. You can treat with botulinum toxin, it lasts anywhere from three to six months. And for this condition. Sometimes as long as a year you get relief from this. It is under those circumstances cost effective. Although individual treatment seems to be high cost in many places. But when you compare it to skate anatomy, and remove the first strip it then becomes cost effective. So the answer is yes. botulinum toxin is a reasonable approach.

Steven Bruce
Okay. Kim's often interesting, when do you find that the problem is usually on the left side with the first rib? Is there a bias to one side or the other?

Bob Gerwin
Not aware of

Simeon Niel-Asher
I know in general shoulder problems tend to appear more on the left side that that I for sure. I don't

Bob Gerwin
You're a major league pitcher in the United States. It's the pitching arm that's the problem.

Steven Bruce
So it's an activity related thing rather than a bias to one side anatomically.

Bob Gerwin
Right because if you're activating trigger points in the in the scaling muscle, anything where you are mentally tilt your neck activating the muscles on one side more than the other. I mean, does that

Simeon Niel-Asher
and I know you were talking about ballet dancers but but of course you know the other group that you've mentioned. violinists, people that have this, you know, occupational postures where they're holding the head to one side. Actually dentists you know, dentists often work unilaterally only on one side, their head to the side. But for sure violin is VO violas tend to have the best the worst out of all of it, because that's an awkward instrument to play. And then the bulk of all the jokes in the orchestra always as well. So it's like a double crush syndrome.

Bob Gerwin
I had a practice built on treating dentists to eventually move to working with the patient rather than the side of the patient. But yeah,

Simeon Niel-Asher
that's very good advice.

Steven Bruce

We didn't have sign up. Send the question in earlier on Simeon, Chris. elsewhere osteopaths have an adjustment for rib one, please. And I thought, well, we know we've got Laurie Hartman here in a couple of weeks time and he'll have 17 different adjustments for rib one was something else is outside the scope of this, this show.

Simeon Niel-Asher
I must say though, it's incredibly satisfying that rib one adjustment, I do it prone. I mean, I learned with with Laurie was, thankfully was one of my great teachers, as his doctor go in. And, you know, I've been very blessed, but the route one adjustment when you when you get it, right. It's a very, very useful technique. And of course, you know, and it's a question I haven't really run past, but you don't have to answer it now. But it seems to me that when we're when we're doing an HVT, a high velocity thrust, we're changing the sort of neuro dynamics to the local reflex loop, which is maintaining these trigger points, and that somehow, we're kind of overloading the or we're increasing this sort of temporal summation, if you like, at the sort of Axanar level, and somehow, we're getting a reflex change in the scalings. It's certainly true in my experience, a good HVT on the first rib as a sort of C seven, here comes Willow apologise, a good a good HVT can actually have a reflex change in the scalings. You can palpate the difference in the screenings immediately. So I know if you've got a thought and HVT, by the way, is high velocity thrust. It's a manipulative technique, as you know, sorry.

Bob Gerwin
I would agree with that. I will also tell you that palpation when asked to be careful, I was told by a physiotherapist from Switzerland that the most common muscle felt baited in the neck by Swiss physiotherapist was the first rib make the distinction about what you're helping but yes, you will always

Simeon Niel-Asher
between physios and osteopath.

Bob Gerwin
Your lower the first grip and you increase the space between the clavicle in the first trip and you relieve the nerve compression and neurovascular bundle compression? Yes, that's

Simeon Niel-Asher
it. And again, I think Bob mentioned it before this kind of hyperventilation syndrome, very much connected because you know, the scalings, or excessive muscles of respiration. So we don't, wouldn't use them generally, unless people have, you know, chronic, you know, COPD, or they have some kind of chest pathologies, or hyperventilation syndrome. And again, you know that you the corollary is that if you, if you increase the tension in the scaling, you can elevate the first rib and then you can get into this kind of syndrome as well.

Bob Gerwin
So, me and I think and then Steven, I think one message here is that, when you have shoulder pain, and you detect the scanning muscle trigger points as as relevant to shoulder pain, or thoracic outlet syndrome, or what looks like it, look at the way the person breathes, and pay attention to the pattern of breathing and see if they're just breathing or they should be abdominal breathing. That's what we need to move the majority.

Steven Bruce

Yeah, yeah. Charlotte actually asked earlier on whether you could tell us why you think one structure would be affected more than another in these points of compression. For example, why why neurological compression? Not vascular or so? Is that just anatomical variation? Or I think

Bob Gerwin
I think that's correct. I think it's just anatomical variation.

Steven Bruce
Okay. Darcy says nerve roots tend to cause symptoms when being stretched or tense, just as much as compressed. Is that true? Yes. Okay. But the problem here is with compression.

Bob Gerwin
As well with, with the exception of the cervical ribbon, the ligamentous band where the nerves are actually stretched across the Mantis band to the cervical rib.

Steven Bruce
Okay. And we got a couple of observations came in Evelyn says that, oops, just that she has thoracic outlet syndrome. It was diagnosed before she trained as an osteopath. She had a scaling, autonomy and removal of partial cervical rib on one sign it didn't resolve. So she was offered offered a sympathectomy, which she refused. And she's still symptomatic. And if you'd known then what she knows now, she'd never had the surgery, but she's looking forward to hearing what you said could be done to improve.

Simeon Niel-Asher
I mean, coming back to the needling, Bob of of the scalings. You know, it would seem it would seem quite when you understand the anatomy, you know, seemed quite a dramatic thing to do. But of course, if with the proper technique, you can needle the middle and the posterior Ischia. I think Bob, very cleverly on our course talks about, you know, the sniff test to palpate the second rib, how you can actually focus on the posterior scaling. I've done posterior scaling, needling, and had incredibly good results with that on the second ribbon as well. So yeah, I, I think it's personally, I think it's always worth trying the non operative stuff first and there, you know, it can also be, of course that after the operation that she's got some, you know, mechanical dysfunction in the neck where the scalings of what she did partial scaling or to me, but what were some of the structures are compressing, you know, secondary trigger points to that.

Bob Gerwin
But the real question I would have is where the problem remains pain, which could be trigger points in any of the shoulder muscles radiating refer down into the arm, having nothing to do with the neurovascular bundle at all.

Simeon Niel-Asher
On that point, Bob, and again, forgive me, but, you know, one of the things about trigger points is that they're quite complex to remember to remember all the maps, you know, I, and I've been doing this for 32 years now, you know, sometimes I can't remember all the maps. So it is handy to have some sort of a memoir, where you can look at these things, we put some of those maps, you'll see them on the slide. But the many, the thing about trigger points is that often they're referred pain map is distal to the to the trigger point itself. scalings is a classic one, you know, you're getting pain into the thumb pain into the sort of digit. And Bob and I've sat and talked about why, you know, the pain maps of trigger points, map in

these ways. You know, I remember, I don't know if you remember, Bob, I showed you that 3d The person on all fours and we looked at, you know, some of the some of those maps imagine us as a kind of four legged creature. So in terms of referred pain, I think, as Bob said at the beginning, it might be better to call this neck, shoulder arm syndrome, you know, as opposed to, you know, thoracic outlet.

Steven Bruce
Well, Simeon, here's a quick case for you then before we close, Wallace's said, I have a patient with swelling in their hands, fingers and thumbs. She describes a fizzing sensation and pins and needles except for the little fingers, insidious onset, and he's due to have a cervical spine MRI, could these symptoms be some form of Thoracic Outlet?

Simeon Niel-Asher
I'm gonna answer first, but I'll go first, my instinct is to look at Complex Regional Pain Syndrome, one mild kind of that's what the thing in terms of cb cb RS one and again, Bob, forgive me, I have a technique that I use on that which involves a scalings involves the also subclavian. So subclavian can also have, of course, elevate, brings up the down the clavicle can also have an effect on that. So I would definitely think worth looking at the scaling and the subclavian. And also some of the the other ones, but I would I would definitely want to rule out some kind of symptom that sort of sympathetic tonus.

Bob Gerwin
As I think Complex Regional Pain Syndrome is part of the differential diagnosis, but certainly venous Thoracic Outlet Syndrome is a diagnosis.

Steven Bruce
Book guys, we've got 475 people paying close attention to you today. And I'm getting lots of feedback through my chat line here saying that everybody's they've lapped up the anatomy, they love it. They love the theory behind it and everything else. And I can only say thank you very much for your time today.