



Spine Cases - Ref148

with Bob Chatterjee

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TRANSCRIPT

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Steven Bruce

We got Bob Chatterjee back in the virtual studio with us today, we had an abortive attempt to run through the second half of his presentation on spinal cases some time back. What we want to look at is pitfalls in spinal assessment. And we're going to recap a little bit on some cauda equina information because it's so important in clinic, and then we're going to move on to some other interesting stuff that Bob has checked. Bob, great to have you with us. Lovely selection for you really, I mean, you've been a spinal consultant for quite some time, you've been on the show two or three times before now I think, so people I hope are familiar with you. And you are trained at Guy's and St. Thomas', and you're now at the Royal Free, is it?

Bob Chatterjee

Yes, I've got my medical degree from Guy's and St. Thomas' London. I spent most of my sort of training career in London, and then spent some time in Oxford, some time in Stanmore in North London, Cambridge, doing some neurosurgery and Norfolk and Norwich, which has got a long-established spinal deformity unit. So as is with training, you go around a bit and learn things from different people in different places. But I'm now based in central London at the hospital St. John and St. Elizabeth in John's Wood, and the London clinic, which is in Harley Street.

Steven Bruce

But you also, you're part of the Total Orthopaedics Consultancy, aren't you and we've built up quite a rapport with you and your fellow consultants down there. And I presume that, you know, part of this for you is the hope that more and more people in your catchment area will become aware of you and start referring patients.

Bob Chatterjee

Yeah, I just, you know, I see these things as a way of really introducing us, I think, you know, everyone chooses to refer to people who they feel happy with and *audio drops out* good quality advice. And, you know, there's a variety within doctors like all of us. So I'm very hopeful that some people like me and value some of my opinions and that we could develop some working relationships.

Steven Bruce

Well, I think one of the things that we've developed and learned in APM, quite different from your line of work, obviously, is that your responsiveness to clients, or customers or patients is key, because if they feel that they can talk to a human being, then they're much more inclined to do business with you. And what we found with total orthopedics is that, you know, you've been very responsive to our requests for help, whether it's, you know, presentations like this or anything else. So hopefully, people will find that when they start referring patients. I should say, we've already shared your presentation for today. But we'll make it available to everybody after the broadcast again, along with the graphics that came with it, because there's that really, really lovely graphic about cauda equina, which many people found useful. I told you, after the last presentation on cauda equina somebody sent in an observation, they have recently had a patient that the GP had said, no, this is not cauda equina syndrome, they referred them back again. And actually, the GP then referred on and the person was sent in for surgery. So, you know, it just goes to show that this sort of education is very useful in our practices.

Bob Chatterjee

I'm really pleased to hear that. It is all about you know, no one's perfect we've all learned and it always depends on what stage you are in your career. But yeah, the more we share this information around and the more everyone will know.

Steven Bruce

Shall I let you start off with your presentation?

Bob Chatterjee

So I just wanted to talk a little bit about cauda equina syndrome in the context of spinal assessment. I think spinal assessment is the most important thing all of us do, you and me because I always say that if you don't really understand *audio drops out*. You know, sometimes I think not enough thought process has gone into the sort of understanding of why someone comes to see you in clinic. There'll be a range of conditions, some sort of acute and some less so, but I think that the condition that is probably the most familiar emergency condition in spines is cauda equina syndrome, I just really wanted to have a little bit about that so that you get a handle on it. It's not an easy condition to deal with because, you know, it's rare and you don't see that many on them and whenever you see things not very frequently, it always rather tests your diagnostic skills. So the first thing I wanted to say is that cauda equina syndrome is a clinical diagnosis. It is not a radiological diagnosis, although the radiology certainly helps. And cauda equina syndrome really refers to acute compression of your spinal cord and mark that word acute. It's not something that happens over a long period of time or rarely so. Most of the time it happens rather suddenly. So the image I've got on the right hand side there, shows something that looks horrendous, that's a side on view looking at the spine, and you'll see the light things with the black rim around them are the discs, the gray squares are the vertebrae. And then you'll see in the L4,5 region a large black disc bulge heading over towards the right-side causing compression of the sort of gray spinal cord, you can see it like a tails coming down in the middle of that picture. Now that looks horrendous. And that might be cauda equina syndrome and it might not be cauda equina syndrome because the trouble is, it is not a radiological diagnosis. So a condition that you'll often see a scan looking like that is spinal stenosis. And when you got spinal stenosis, you've often got significant compression of the spinal cord. So what's the difference I hear you say, because they look the same on the MRI scan. So it's a question of time. Spinal stenosis is something that happens over years. And as it gradually occurs over the years, what will happen is, is that your spinal nerve elements have got a great deal of compensatory ability within them. And as a result of that compensatory ability, they can continue to function. Even if it looks like that there is significant compression going on, because the body's had time to react to that and keep the nerves working, working well. So spinal stenosis can give you horrendous looking pictures but may not have issues of cauda equina. Whereas to contrast that if you get an acute disc prolapse that suddenly comes out of nowhere and suddenly starts pressing on the spinal cord, suddenly the spinal cord and the nerves in it, are suddenly seeing stars and the spinal cord can't deal with that. And then you start to get these horrendous symptoms of cauda equina syndrome. And the thing with cauda equina syndrome is that the trouble is, is that you don't have much time sadly, it's something that needs to be done sooner rather than later. And it is virtually the only thing that I will sort of get out of the bed as an emergency to do something about because there's no question about it that the quicker you get on top of cauda equina to decompress the spine the better it gets.

Steven Bruce

Can I ask, you said that, in the slow-moving scenario the nerve can compensate, what physically happens to them to help them compensate? Do they move? Or is there some structural thing around them to protect it?

Bob Chatterjee

No, there's no way to move to, they remain compressed. But what's happened is that the oxygenation of the nerves, because it's not been rapidly cut off, if you like, has got time to acclimate, so nerve cells can survive on low oxygen tension, but not as an acute change. It's a bit like higher altitude training, you can get used to having, you know, less oxygen at a higher altitude. But it's got to adapt to it. So if you suddenly go and do that on one day, then suddenly you will feel desperately short of breath and you weren't acclimatised to it. But if you do it over a slow period of time, that the nerves can accommodate it to a degree.

Steven Bruce

Bob, I've just had a message from Pip who says that she had a patient just last week who told her that previously she had an episode of low back pain so acute as she's described it that she lost control of her bladder, she went to her GP who was unconcerned and just told her to take painkillers. Pip says, she was alarmed to say the least and says that the patient tells her that her bladder has never been quite the same since. I don't know how long ago it was.

Bob Chatterjee

So that would be very worrisome to me. And one of the things I sort of see, now it may be that that particular lady that it isn't called cauda equina syndrome. But the trouble is, you don't know. And I always said this, you know, as a consultant in the NHS, I expect to get lots of negative referrals sent to me that that's not something that worries me. I used to sort of get run across with my junior registrars when they sort of used to say, oh, well, look, I've taken a call from a GP and I don't think it's cauda equina. And I always used to reply, are you happy to put your name to that just over a telephone call. Because if you're happy to put your name in your future career, then go ahead, if you think oh, I better check the patient, then bring them in. And I will be happy if I get 10 referrals and one of them ends up being a cauda equina, I'm delighted. And the reason for that is you expect to see lots of false positives here. And if you're not seeing lots of false positives, then your threshold for referral is too low. We just don't want to miss that one disaster. We know they'll come with a lot of other cases that nothing of nothing. In that particular case that you just mentioned, I would certainly be worried because how you can sort of say that one episode of you know, loss of control of bladder has got nothing to do with it, unless the GP did a very careful clinical examination and he or she may have done so and if they did it on that basis, fair enough, but if they did it over the telephone or without having seen them, I'm struggling to see how you make the diagnosis. I'd send them in now, though. I'd still send them in now, not the cauda equina syndrome, but you need to understand whether the bladder has got anything to do with the spine or not. So you know, there would merit an MRI in my book, even if to say that it's got nothing to do with the spine, at least that's a positive piece of information. And you can send the patient to the right sort of person. But you know, if you're getting an episode of loss of bladder control with severe back pain, that's gonna raise some alarm bells in your head.

Steven Bruce

But we've said this on when we previously spoke, I know and I hesitate to say things too many times. But I just don't think you can emphasise enough here that when you get these signs or symptoms, you do refer because as an osteopath, you can be very nervous about making this referral and having a GP or a consultant think that you're incompetent, because you referred someone who doesn't have cauda equina syndrome. But it's really reassuring to hear you say that, you know, that's what you'd expect us to do.

Bob Chatterjee

I definitely do. That is an utter failure of medical necessity, if I can put it like that, that all this nonsense, this hierarchy doesn't exist, the only thing that counts and the only thing that any of us are interested in is the welfare of our patients, mine or yours, it doesn't matter. And so you know, I've always been like this, even when I was a junior, if you feel there's something, then surely it's just my job to look into it. And you might be right, or you might be wrong, just like I might be right or might be wrong. So please refer and people who criticise you for doing so are talking poppycock, in my opinion.

Steven Bruce

Yeah. As you said earlier on about people putting their names to something, I think we reassured one osteopath in a previous broadcast that, you know, if he's even mentioned cauda equina syndrome in his clinical notes, and he hasn't referred he better have a damn good reason why he didn't.

Bob Chatterjee

Yeah, I think so. I think the documentation is very, very important. Even if you're getting an obstructive doctor or whatever on the other side of that, please do document that you have made the call and you've made the referral. And sadly, when I've done medical, legal expert witness things in court, these things matter. So please, I do feel that you are very vulnerable in primary care, because you're sort of out there really without necessarily a sort of all the legal protections you get from the NHS. So please *audio drops out* time, even if they're not giving you the answer you're looking for.

Steven Bruce

Thank you. Sorry, I interrupted, and I should let you get on.

Bob Chatterjee

Not at all. I just put some charts up. As I said, hopefully, you'll receive a copy of the presentation, but you know the symptoms, but just a few things to add to sort of read through the chart, there's a few things here. So usually, the first thing that you're going to get is an onset of urinary symptoms. So things like bowel, for example, come later. So you know, if I see someone who's got loss of bowel through cauda equina, I'm already rather worried for them because I think it's too late. So the early signs you see is a disturbance to the bladder, as you see in the top left corner. And it's difficult because the urination is different, different to normal. And usually, it's they don't know that they need to go to the loo. And that's the sort of first sign that they tend to get to, and then they have the inability to control that comes a little later. So it's this loss of knowing that you need to go to the loo, the loss of ability to control it when you get to the loo, these are the sort of first signs that you're looking for. They often tell you about a subtle numbness as well, only because that's what they feel when they're sort of wiping their bottom with tissue

paper, they can't feel it so well. So it's definitely the upper two symptoms in terms of the charta of what tends to present first, the lower symptoms, the bowel function that comes later, sexual dysfunction is there, but often at later manifestation of cauda equina, and you may well get low back pain and weakness, but the difficulty with a low back pain and weakness is sometimes you have that and that symptom will come out of the blue and it sort of helps you to sort of understand what's going on. But often you'll see people getting sort of this problem on the background of a preexisting low back pain and weakness. So it's not often easy to distinguish.

Steven Bruce

You won't be surprised that I'm getting questions coming in. Interestingly, Louise has said that she had cauda equina syndrome sometime. But her problem was not loss of control. It was urine retention, is that common?

Bob Chatterjee

It is common, but that's later on. So when you get to urinary retention, that's further along that we'd like it, so it'd be interesting to know if she had absolutely any disturbance in her normal urinary function before that. So when you look at cauda equina, we often talk about whether they've got any retention or not. The sign of retention is a bad sign for us, it means that the cauda equina's progressing and we need to do something sooner rather than later. But usually, it's preceded with some symptoms.

Steven Bruce

Apparently she had surgery within three hours.

Bob Chatterjee

Yeah, no questions about it.

Steven Bruce

So I hope she's okay. Jacqueline has asked for clarification if we get somebody who we suspect cauda equina and should we the GP or should we send them to A&E?

Bob Chatterjee

I think A&E probably is my better bet because it bypasses all the other nonsense. So I would probably say A&E. Maybe it's just sort of my experiences of life, but usually these cauda equinas, they never come in civilised hours. I don't know why, but they rarely sort of trouble you between nine to five on a Monday to Friday, they're often late in the evening or whatever. I would say if you've got a good relationship with the GP, if you're sort of not certain, but you'd like someone to examine them, then you might be able to get a GP to have a look, I have to say, under the current circumstances that we're in at the moment, I'm afraid a lot of the GPs are doing things really by remote and sort of remote consultation, so forth. And this is something that you just simply cannot diagnose by remote consultation. It needs an examination. So I think certainly the current circumstance, I think A&E is the best bet.

Steven Bruce

I've spoken to a GP, MSK specialist in the past, commented that GPs are pretty much useless at musculoskeletal medicine, and I would have kind of thought that most osteopaths and chiropractors would be better at diagnosing this than a GP.

Bob Chatterjee

I absolutely agree with you without getting into trouble.

Steven Bruce

I mean, it's not a GP's specialist topic.

Bob Chatterjee

I think that's accurate in all honesty, don't get me wrong, you know, GP and my dad was a GP. GPs know tons and tons and tons of stuff about stuff that I know nothing. Okay. But if it comes to spine, no, they're not that great at it in all honesty, they're much better at things that kill you, you know, things like cardiology, oncology, but not so much spine.

Steven Bruce

Somebody asked me whether saddle anesthesia is always present in cauda equina.

Bob Chatterjee

Not always, none of these always are. That's one of the problems, you don't get a consistent presenting sort of picture with cauda equina, it's a varying one and that's one of the problems with picking it up. It's a change from what they're normally like as much as anything but no saddle numbness is not always there.

Steven Bruce

Okay, we've got a question which I think I raised from my own experience with you in the past. Rob has said, what do you do when A&E still dismiss a suspected cauda equina and they refuse to MRI them? He says it's happened to him a couple of times. And you probably know, Rob, because he works closely with Total Orthopedics down there in London.

Bob Chatterjee

I know Rob very well. It's difficult. So from the point of view of the patient, you turn to go somewhere else. From the point of view of yourself, you document it, often, I mean, Rob and I actually is an example of what I mean by building working relationships, you know. I've got a working relationship with Rob, and I'm sure that Rob would have no hesitation, I'd like to think he'd have no hesitation to call me whatever time of day or night it was because, you know, we'll take it seriously. And he knows that. And it's sometimes difficult to do. So it shouldn't be the way but for Rob and sometimes what I've done for other colleagues of mine is that sometimes saying exactly what Rob had said, but unfortunately with my name at the end of it, the qualifications go with it sadly gets taken more seriously than Rob, and I know it shouldn't be that way. But that's the real world we sometimes live in.

Steven Bruce

I guess the nice thing from your point of view is that most osteopaths and chiropractors won't be open at two in the morning.

Bob Chatterjee

No, I think you know, if you genuinely, you know, Rob makes a comment that has happened, if you genuinely think it has, you call them again, or you send them somewhere else in some different A&E department or you get hold of the hopefully friendly, friendly doctor like me. So I put up here some of the sort of the symptoms that we talked about, you know, saddle numbness is not always there, the pain and the incontinence numbness, I think we've sort of covered that already, really. These are more sort of charts, if you like, for your workplace. I wanted to start on this particular one. So, you know, it says in the sort of 1,2,3 steps, just a few things so, I think they put it beautifully, if it's a possible diagnosis, you must investigate. Now that's, you know, for us if you like, but it equally applies to you. If it's a possible diagnosis, you must refer, just change the investigate to refer and those are the symptoms that with back pain plus disturbance of bladder plus the sort of sensory disturbance. So as you say there, it's an and or, not a have to be. And the rest of it is really for us and in terms of hospital things, in terms of we know we should be doing MRIs. There's a problem with that at the moment, because a lot of hospitals don't have ability to do MRIs out of hours. But we're changing that, we've got government approval to change that. But as with many things, you have to demonstrate the problem before you can actually change it. So it's in the process of that, but we have definitely made progress on that, and getting funding for every hospital to do an MRI out of ours for cauda equina.

Steven Bruce

I like the bubbles at the bottom there, the three myths.

Bob Chatterjee

Yeah, I was just gonna say. So I just like the sort of 3 myths, partly for us and partly for you. So one is that if there's no urine retention, as I was saying earlier, that urinary retention is often a slightly later sign by itself, but the patients who are on their way to urinary retention who haven't gotten there yet, are the ones that you would really like to pick up on, because they tend to have the best outcome. And by the time your retention is established, I'm afraid the prognosis is not so good. Anal tone, if it's normal, again, that is not a finding that has to be there, you have to put your, you know, I say this to the doctors, I'm afraid, you have to do a PR examination. You know, we say if you don't use your finger, then go to court. If you do not document a PR examination, you are going to be in big trouble. There's no query about that, that is an absolute standard of examination for us.

Steven Bruce

What are you looking for in a PR examination?

Bob Chatterjee

You're looking for the anal squeeze, you're looking to see if they can squeeze down on your finger, and you're looking for how good they can squeeze it for, and also the sensation in that area, but you must do it. And the last myth is really more for us. It used to be that the MRI could wait first thing in the morning. But we're now very much changing to the pattern that we want to know about it ASAP, because we may

well do something about it out of ours. The guidance used to be that the operation can wait till the morning on the grounds that you have a more familiar sort of staff who are used to operating with you and know where the equipment is, and so forth. But it's changed, we now feel that that's valuable hours lost, that can make the difference with their recovery and the lack of it. Any questions about cauda equina cause I'd move on to the rest.

Bob Chatterjee

The last one I have on that one is from Salome who says, are patients likely to feel better standing up or lying down or in any other position?

Bob Chatterjee

Feel better in terms of pain? So in terms of neurology, usually, leaning forward a little bit tends to make them feel a bit better. So that's something that you sometimes see in the patients, but that usually, that won't get rid of all the neurological symptoms. So feel a bit better in terms of discomfort and pain, sure. But in terms of would it improve the neurology, not when it's gotten to the stage of a cauda equina.

Steven Bruce

Okay, thank you.

Bob Chatterjee

So I suppose I'm going to flick really from the sort of emergency to the rare stuff and I was talking about pitfalls in diagnosis, because it's one of the things that I see a lot in my practice, where really, you know, someone comes to see me because things aren't as good as they should be, or aren't quite as they are. And I sort of, you know, put a lot of thought over the years into trying to understand why sometimes people have the wrong diagnosis. And I think there's sort of a number of causes for that. So one of the causes might be that there's a degree of misattribution of the signs and symptoms, the signs and symptoms are there. But you think it's coming from one source where it's actually coming from another. I think a different eye is a misdiagnosis where you've completely got the wrong system in the first place. And it does happen, although fortunately not frequently. Some of the things I encourage my students to think about is that the MRI will often show more than one pathology, have you got the right one, you know, and we've all got it wrong on times. You know, I recently saw a patient where I was absolutely convinced that the problem was coming from the slip disc in the L five S1 level on the right-hand side, but actually, it had nothing to do with it. She did have sciatica, but it was coming from the ischiofemoral region where there was an injury to the nerve, rare for sure, but that happens. So you know, make sure you try to get the right pathology. Be aware of the limitations of MRIs, you know they don't show everything, so the MRI is not very good at SI joints. It will show you if you've got inflammatory SI joint disease and it is sensitive at relatively picking that up. But if you got an overloaded SI joint because of problems elsewhere or so forth, then usually, you know, it's not going to show you what you need. An MRI is, I always say, you got to remember that the sort of standard MRI is taken with you in one position on one day, it's a single snapshot, it doesn't really reflect what your pathology is like in all the different positions you can be in. As many of your patients will tell you their symptoms aren't there 24/7, they sometimes sort of come and go in waves. So you know, there are limitations within MRIs, you've got to take them in with a pinch of salt. And as you all know, already, but just to re emphasise that MRIs are not gospel truth, they show lots of things that have got absolutely nothing to do with the symptoms.

Steven Bruce

Do you think it's a problem with MRIs that generally they are not weight bearing?

Bob Chatterjee

It depends on the clinical examination first, really, I think if the clinical examination, really, it's the history and clinical examination that buys the diagnosis for me, and the MRI is there to confirm it rather than the other way around. So I will use a weight bearing MRI, if I feel that the symptoms they've got are going to be accentuated on weight bearing, they might show up a bit better. But I don't think that every MRI has to be weight bearing. If they've got a very good story of spinal stenosis, then you know, you don't need them to be weight bearing, it will be there on a standard scan.

Steven Bruce

What other sorts of things were you thinking weight bearing MRI would be normal?

Bob Chatterjee

Spondylolisthesis for me, pars defects of spondylolisthesis where there's no alignment between the vertebrae that might catch on a nerve root, particularly when I see inflamed facet joints, when you see very, very inflamed facet joints that can also promote movement that when you put them in a lying down position you won't pick up. The other thing is to listen to their story. So when they tell you, I ask them what their symptoms are like in different positions. So they say to me, look, I never get it when I lie down, but I only really get it when I stand up. I'm gonna want a standing MRI because it's more likely to show me the pathology. So it's a bit about what they might have in a bit about their story.

Steven Bruce

I ought to know this, but do all MRI suites have the capability of doing weight bearing, standing MRIs?

Bob Chatterjee

No, hardly any do. Over 90% of all MRI centers have only got the ability to do a lying down MRI scan. So the weight bearing MRIs are few and far between. That's why you certainly won't get one on the NHS, certainly not routinely, we were able to send them on their way with them. But it was designed to create as much paperwork as possible before they give you approval. So you'd be really unwilling to do it. And so, you know, fortunately we got better access to them privately, but no, the majority of them don't have the facility to do that.

Steven Bruce

Can I ask you a couple of questions from our audience. Georgina has said she wonders if tarlov cysts can be a differential diagnosis that obscures cauda equina syndrome. She says she has a young patient who demonstrates all the CES symptoms but they've MRIed and said she doesn't have it, given her physio exercises and she's just deteriorating apparently.

Bob Chatterjee

So tarlov cysts can, first of all, for those who don't know, a tarlov cyst is what's called a para neural cyst, it's a cyst coming off of the sheath of the nerve. Now they can be very, very large in size. And the thing with tarlov cysts is that they are often asymptomatic, but they can be symptomatic. I've seen a lady

recently who was complaining of sciatic symptoms, and she had a massive tarlov cyst around one of the nerve roots. And she'd been sort of effectively ignored by the NHS, she'd been told that it was nothing to do with the symptoms. But I sent her to one of my colleague neurosurgeons to marsupialise the cyst and it improved all her sciatic symptoms straightaway. Now that, to be fair, is the rarity, the majority of tarlovs don't cause it, but there are certainly some of those who do. It's not a common thing. So don't get too cross with doctors for not necessarily picking it up. But for those of us who sort of, you know, purely spinal specialists, it's definitely a possibility.

Steven Bruce

I've got another one which is about cauda equina and about inability to get a full diagnosis. Christina says that she's referred patients for cauda equina investigation, they only had a PR exam. They haven't had an MRI and they've been told they're fine. Do you think that she or we should be more forceful if that happens and say, hang on the PR exam is not enough, they need an MRI as well.

Bob Chatterjee

They should know that already. You're going through a phase here where we're actually trying to change the mindset, you know, education takes a long, long time to seep down through to people that often end up making the decisions. Quite understandably, I'm sure they've got lots of other things to do, but that's why we changed the guidelines that you should not be, you know, you can't just say, they're fine based on a PR examination. That's just nonsense I'm afraid. That doesn't have to be there. So if you suspect it clinically, you should be doing an MRI. The thing always previous has been is that oh, well, we can't get it. We need to change that. So you can get it, but no, you should be more forceful because, you know, or at least document it if nothing else, document it, but know the concept that you could say someone hasn't got cauda equina with a PR is complete nonsense.

Steven Bruce

Okay. Mel has just told me that the Bournemouth MRI Center, which is allied to what used to be called the Anglo European Chiropractic College, and now has a longer, more complicated name, they do upright scans apparently, and Georgina talking about that last bit, and says she has a very large cyst.

Bob Chatterjee

Yes, a very large cyst can cause neural symptoms for sure, I'm afraid I've seen that. We've seen few patients like that, I worked with a few of them in my time as well. So if it's a very, very large cyst that makes it a bit more likely that it can cause neural symptoms.

Steven Bruce

What about these anatomical variants that I see on your slide here?

Bob Chatterjee

Yeah, I've got a few just to show you that, if it's all right. These are some things over the years that have caught me up. So you know, I like telling you about all my own failures and things because it just hopefully, you get the impression that we all should be happy to discuss the things that we've got wrong, I think that's often now you learn a lot more than talking about all your successes. So a few things, so misattributed systems. So back pain and kidney stones, I've seen quite a few over the years, where

people have had problems with severe back pain, it's actually coming from the kidney stones. Kidney stones are intensely painful, really, really painful. It's one of the few things that gives you sort of, you know, back pain type symptoms, it's usually sort of a little higher up in the back, it's not usually the low, low back, but more sort of junction of middle and lower third of the back. And often you get symptoms associated with urination. So sometimes you almost think you may have something like a cauda equina, because the symptoms are partly urinarily related, as well as back pain, that's something that you'll certainly see from time to time. If you look at the picture on the right-hand side, I've put it in dotted lines, this large black thing, just lying to the left of the spinal column there. And that's an abdominal aortic aneurysm. And the aorta should be narrower than that and when it swells up like that, it causes pressure that can often present as back pain. And so that's something that you'll come across from time to time.

Steven Bruce

I'm curious about this, I've known people in the past who said before they could palpate abdominal aortic aneurysm, is that likely, how easy is it to palpate?

Bob Chatterjee

You can, but only when it's very big. So you can palpate it through the front. And what you feel really, you're feeling for a deep pulsation. So if it's very large, and when I'm saying very large, usually, you know, above eight to 10 centimeters, something like that, but if you palpate deep into the abdomen, you can feel that something is pulsing at you. In some ways, some of this is historical, if you like, this is the way I was taught. Sadly, I'm afraid I'm showing my age here a little bit but I was taught when half these investigations weren't that freely available. And therefore, you really have to rely on your clinical skills as much as anything. I suspect that these days history and scans tend to help with those but yes, you can feel them. I'm just gonna show you a few pictures. So this is a chest X ray. So this was a patient who was complaining of neck pain radiating over to the right, radiating to the right shoulder and a little bit in this sort of upper arm and they had an MRI scan that showed irritation of the right C4 nerve root. And so I looked at it and thought, oh well, C4 nerve root, that goes to the sort of shoulder, sort of what we call you know, regimental badge area on the side of the shoulder, must be C4 nerve root irritation. So this was a mistake that if all you recognise is nails and everything is a nail and what I really need to do is think a bit outside the box. And I'm very glad that a very smart radiologist, because I'd ordered a chest X ray as well, because he had some sort of coughing symptoms even though it wasn't quite my field. But if you look at the top of the picture here on the left hand side is you look at it, can you see there's an opacity in the top, that's a tumor of the lungs, it's called a pancoast tumor, it's a little unusual because it just sits in the top of the lung and it refers symptoms over to the shoulder and the neck area right up into the base of the neck so you don't see them very often fortunately.

Steven Bruce

Is that central area normal, Bob?

Bob Chatterjee

The central area of the picture?

Steven Bruce

Yeah, there's quite a sort of a circular opacity at the top of the thoracic...

Bob Chatterjee

On the right? Center right? Yeah, that's the knuckle of the aorta. It's a bit calcified.

Steven Bruce

Right. Oh, I see, it's calcified.

Bob Chatterjee

Yeah, it's just a bit calcified that's why we're seeing it. So beware of lung tumors, okay with sort of upper shoulder, neck presentation. I don't know if anyone can see anything wrong with this. But I'll give some clues as we go along. So this patient had weird nerve symptoms that sort of work really typical of any particular nerve roots. It was a bit of bit of sort of numbness everywhere of the legs, bit of pain, area of a bit of weakness in different areas. You know, sometimes when you're trying to get a diagnosis, you want to attribute it to one nerve root or something, you couldn't do that. But if you haven't spotted it by now, and this is what's called a tethered cord, so if you remember, the cauda equina, usually sort of commences around about sort of L one, L two region. So the sort of solid spinal cord then becomes just the horse's tail, as we call it. But if you look here, can you see this is extending all the way down, right down to the L5, S1 area. So that's a congenital failure of development of the spinal cord, and you get a whole weird, weird neurological symptom with it. So sometimes when you look at the scan, just make sure that the cauda equina does finish where you think it finishes and doesn't continue further on downwards. SI joint, SI joint is the chameleon of the spine, as I call it, it mimics so many things, you know, it can mimic disc prolapses, facet joint problems, hip problems, it can radiate pain all the way down the leg. So, I think it's one of those things that needs to be in your mind when you look at patients. And I think to be honest, doctors have been a bit slower at picking this up. I think the new guys on the whole, but they're difficult to diagnose. We always like to have objective diagnosis, but the CT SPECT scan is probably the best method of diagnosis. If you look at this picture at the bottom, can you see the left sacroiliac joint highlighted with a red arrow there and that yellow highlighting that you don't see on the sacroiliac joint on the other side is typical of sacroiliac joint. So often your plain MR, plain X ray, plain CT don't show an awful lot, unless it's really bad. I mean, if it's really bad that it's eroded your sacroiliac joint away, then that's different, you might see it on some of those modalities, but if it's more like a biomechanical overloading, CT SPECT scan is probably the better test to go for, although it's not that widely available. I put this question, this picture up, rather, just to explain to some of that nerve roots, really. So sometimes you get the wrong nerve roots. On this picture here, you can see what we talked about the sort of the lateral recess, so if you look at the blue arrows on the left hand picture, it says traversing L5 nerve roots, so that is one area of compression, and we call that area, the lateral recess, or paracentral, if you like, but the nerve roots then travel laterally outward. So if you look at this sort of area where it says the neural foramen sort of almost guided by the pink purple lines on that picture, so the nerve root can be entrapped further out. And I've seen some operations unfortunately, done for the wrong nerve root. So the L five nerve root sits in the lateral recess of the L four, five level, but it's the L four nerve root that's traveling out on the side where the purple area is. So if you look at the picture on the right hand side, you see a disc part that's affecting the lateral recess where the L five root is, but can you see that the black stuff also extends further over to where the purple designated area is on the picture. So that's affecting L five and L four nerve roots. So you've got to be certain that you've got the right nerve root that you're treating either with an injection or an operation because otherwise you may treat one that's asymptomatic, and we see quite a lot of those nerve root areas if you'd like to know which

one to treat. This picture shows what's called a facet joint cyst, synovial cyst. So if you look at the picture on the left hand side, you'll see these high white signals on the facet joints, a large cyst coming out on the patient's right hand side, and that's pressing on their nerve and that can cause similar symptoms to sciatica, but not be due to a prolapsed disc. So there are a few weird and wonderful things that you will see then and it's important just not to miss that. Cardiac pain can often be confused with left sided arm pain if you like. Always think of the brain and make sure they haven't got things like multiple sclerosis. So if you're seeing neurological signs that don't quite fit everything it may be due to problems coming from further up, and then it may be due to intrinsic pathology. And what I mean by that, is that a lot of things that we treat about things pressing the nerve from the outside, whereas actually, they can be problems within the nerves themselves, or they can be tumors within the nerve, we talked a little bit about nerve sheath tumors already in terms of tarlov cysts, you get infections in the nerves and so forth. So it doesn't always have to be something pressing on the outside. And I always say just always remember to examine the associated joint, I think you guys are very good at us perhaps are less so. So neck problems can be from the scapular, can be from the shoulder, can be from the clavicle, problems in the low back coming from the sacroiliac joint, can be from the hip, and can even be from the knee on occasions. So there are a number of other locations that might be causing your symptoms. So that's really all I wanted to say really, sort of about assessment, just want to leave a little bit of time for questions, but just remember that still, for me, the history is the most important thing. That's what raises your index of suspicion about things and taking a detailed history, that's the easiest thing to do ever, and we need to put time on to that. Cauda equina syndrome is a clinical, not a radiological diagnosis. Please do refer if you suspect and do document it. MRI is still the most useful way of diagnosing things, but you just have to remember that they're not infallible, and they have limitations. And don't forget to consider the rarer causes, some of which I've sort of been through with you today. So I'll stop sharing my screen there.

Steven Bruce

Well, that's been great. Yeah, we've not gone through this presentation before, because we've always had so many questions. I've got three more on my feed. Pierre has said, is there a time frame for decompression of a confirmed cauda equina case? NICE guidelines suggest 48 hours. Is that still realistic?

Bob Chatterjee

No, we've changed a bit. So always be a little bit careful of NICE guidelines.

Steven Bruce

You're being diplomatic in the way you phrased it?

Bob Chatterjee

Yes, I am. What I mean, NICE guidelines have to be delivered. So whenever you sit on the NICE guideline committee, it's not always about what is the best thing for someone, but what you can deliver in the structure you have, which isn't quite the same thing. So I think it's quite interesting, if you ask any spinal surgeon, whether they could confirm cauda equina, decompress it to 36 hours or 48 hours, every single one of us would say 36 hours, time matters. And actually, although that used to be that sort of feeling, it could wait for 48 hours and no longer. As I said, it's the one thing I really would do, even if it was midnight, I would do it because time makes a big difference.

Steven Bruce

Okay, this is a bit off topic. But Claire has asked whether you know if thermal imaging is used for diagnosis of injuries in humans, because it's apparently quite popular in animals.

Bob Chatterjee

Thermal imaging?

Steven Bruce

Yeah.

Bob Chatterjee

Not quite, all you can see with thermal imaging in humans really is, you can see areas of relative high metabolism. Or sometimes you can see evidence of localised trauma because of the heat that's generated from it. So it's good at picking up inflammation and trauma, I suppose the problem that we have is, it doesn't tell you so much about what causes it. And so it hasn't really gained an awful lot of popularity. I've seen it used in human location things in sort of mountain rescues and so forth. But that's not so much to do with treatment of the problem, but more location of lost people.

Steven Bruce

Final question, Robin says, are there any tests or any other methods by which we can improve our diagnosis of kidney stones?

Bob Chatterjee

So, there are a few things to say. So often, probably not so easy for you to do, we often give them a shot of something called glucagon. And what it does is it significantly improves kidney stone pain, but it doesn't improve anything else. But obviously, you won't be able to get hold of that. In terms of the examination, what you tend to find is that they don't have any neurological issues beyond the fact that they're not passing water very well. They're actually more due to pain rather than anything else. There's a common phrase that they say that they often feel like they're passing razor blades, it feels that painful. It's a deep seated, discomfort really in the loins, and there usually isn't any specific areas of tenderness. So the examination is quite different, actually from somebody who's got musculoskeletal back pain, you'll find that you know, with musculoskeletal back pain you can put them in certain positions and it will ease some of your symptoms, whereas kidney pain is fairly unremitting. So they're different in many ways.

Steven Bruce

Well, thank you very much. We're slightly over time, and I'm very grateful for you for doing that. I think I dropped out in the middle of this. I thought it was your signal that had gone but I think I dropped out. I missed a little bit of what you said myself. I'll catch that up on the recording. Great to have you on the show. Hopefully, we'll get you on again sometime in the future. *audio drops out* in London, easily findable through the internet, but also we'll share that with the presentation for you after the show.