

Q: A picture tells a thousand words.
Welcome to SBH Bronx health talk produced by SBH health system and broadcasts from the beautiful studios at St. Barnabas Hospital in the Bronx, I'm Stephen Clark. This is certainly the thinking behind a diagnosis and treatment of injuries and diseases using medical imaging aka radiology. Specifically these are x-rays and Ultrasounds, MRIs and cat-scans, Fluoroscopy and mammographies. Neuroradiology is a subspecialty of radiology and focuses on the diagnosis and characterization of abnormalities of the central and peripheral nervous system, spine, and head and neck using neuroimaging techniques. With us today to discuss neuroradiology this Dr. Razor Rahmani, Chief of neuroradiology and musculoskeletal imaging at SBH health system, welcome Dr. Rahmani.

A: Thank you for having me.

Q: So let's start out what is in layman's term a neuroradiologist and what kind of conditions do you typically see?

A: So neuroradiologist as someone who specializes in the branch of radiology which as he said deals with the central and peripheral nervous system, so that essentially includes from head to toe if you start looking at the human body your and brain your maxillofacial head and neck your neck and your entire spinal cord in the spine. So what a neuro-radiologist does is you know we specialize in diagnosing diseases of the central and peripheral nervous system

and we use these in various imaging techniques and they can range from CT to MRI to PET scans and other sophisticated imaging techniques and we figure out what really is going on inside the human body. So as to say like a detective you know if someone comes with a problem we figure out what is going on what are the other different options.

Q: The conditions you most commonly see are they traumas?

A: So a mix of all and all. I commonly you know like a CT exam is the main workhorse for neuroradiology and common things that we see is headache or seizures they're very common or someone with just sinus problems those are pretty seasonal and trauma because we are a level two trauma center so we do a bulk load of trauma cases day-in day-out.

Q: Do you see pediatric patients as well as adults?

A: Yes I do entire neuroradiology so that includes peds as well.

Q: And I guess very often the diagnosis is not really confirmed until after they see you correct?

A: That is totally true so like I said you know we are we are like the detectives trying to figure out what's going on and once we figure it out we kind of spread the information around to rest out the medical team.

Q: What should a patient prepare for before they see you?

A: So it really depends on the type of exam they are going in for. For example if it's a simple x-ray you really don't have to prepare anything you just show up. If it's something like a CT scan specifically you like if it's a CT with dye then there are certain prerequisites you know you would have an interview with your doctor you would let them know if you have any allergies, that's number one, and if you do have allergies we can still do the exam we can pre medicate the patient and still do the exam, or we can choose a different exam which doesn't require that contrast or the dye. Other thing is if you're diabetic or if you have bad kidneys then we need to know that, in that case we don't want to give you that dye because that that would put too much pressure on your kidneys which are not functioning too well. Other thing is the weight limit the main weight limit on a CT scan is here is about 350 pounds so that's another thing. In fact this morning I just had a case patient was 305 pounds and they were like "oh can we do an MRI?" And unfortunately our weight limit is 300 pounds.

Q: I've always been somewhat confused between the difference between MRI and a CAT scan, and I know when you're going for an orthopedic injury or something it's almost used interchangeably but that's not really right is it?

A: Not at all. So for orthopedic injury I personally feel like MRIs

bigger bang for your buck. You get really good soft tissue details with MRI for example when you're watching you know watching sports and you see all these sports injuries they talk about meniscal tears and ACL tears, so invariably that's only seen on MRI because MRI provides superior soft tissue resolution which we are not able to get with CT scan.

Q: What does a cat scan used for?

A: So CAT scan like I said it's more useful for bony injury so for trauma cases you know we would get a head and neck scan as a routine because you can have spine injuries and it's really good for blood, acute blood. If someone has a brain bleed we it's the test you look for. It's also very quick and very good for cases like stroke or infarc. So infarc is like a heart attack of your brain right so it's very quick it's a couple of seconds you get the images real fast and you are racing against time, so CT is the way to go in those scenarios.

Q: Again someone could spend, I mean some scans are done quickly like you mentioned and some take quite a while right?

A: Sure so for something like MRI which is a much more sophisticated exam one issue is it's a longer exam, it can take up to 45 minutes even when we cut down sequences, and the other thing is you have to kind of lay still for that time. So that's hard even for adults and that poses a problem you know and in children especially like less than ten years old they would need

sedation so that's another issue. And even in adults who have very painful pathologies going on like a spine infection so it's very hard for them to stay still. In that case also we have to arrange for anesthesia before they get to the radiology department.

Q: You hear a lot about when we talk about radiology you talk of you here about false-positives and false-negatives, what exactly do they mean by that?

A: So it really depends on what the exam is and what it's used for for example mostly MRI or CT are the superior most exam. You can use tests for problem solving, for example, I see something on an x-ray and I'm not sure if it's a tumor or infection I might order an MRI of the ankle, and that usually is the ultimate test and 99% of the time it would give me an answer. There are very few cases for example, someone who's a diabetic, and also a smoker who has really bad vessels which could be from diabetes, which could be from this. On top of that he's a drug abuser, so you don't know if that's from infection or just bad vessels so that we call neuropathic joint and sometimes we can differentiate one or the other. In those few cases we might have to just go in and do a bone biopsy or something like that.

Q: So after somebody has their pictures taken, I guess you go into a room and you go over them and you have to, I mean obviously the proof is in the pudding at that time that's when you're actually the detective trying to determine what's going on.

A: Sure, so what we do in our

department is we are constantly monitoring the cases. So for example, when someone is getting an MRI done in real time, I'm in the background looking at other tests and I'm monitoring the exam if we need to add some extra sequences for that specific patient at that point in time we'll actually do that. And as we are reading out, we make fine-tuned changes, for example, I'm not going to talk to the patient directly and give them a bad news that or they got a cancer or something I would discuss it with the doctor. But at the same time for example I had a patient this morning who came as an outpatient a routine follow-up two weeks after his brain bleed, and this lady had a new bleed in her brain so what we had to do is we had to like have her go to ER right away and get the neurosurgery team involved. So that's what I mean by we are constantly monitoring these patients, some of them may have unexpected findings which may need specific intervention at that point in time.

Q: So I guess again the clock is always ticking we're very often ticking and you've got a deadline we just can't say you know check this out tomorrow, sometimes it's a real priority involved.

A: Sure, because we are dealing with human lives and you never know, I mean as far as I'm concerned every case that I open an image is the patient in front of me, it's the equivalent to one life so that's how it is.

Q: Has the technology improved dramatically over the time that you've been a neuroradiologist?

A: Yeah, it has improved so much I can't even tell you. All the radiology is you know a relatively new field of medicine it's only been around since the end of the 19th century, so that's only like 120 years and our field of medicine you can you know it's like predates the Stone Age, it's it's been around forever. Since I've been you know more sophistication on has been applied in different modalities and the latest I hear we have proton therapy, which is another addition to cancer treatment which only a few chosen centers are giving in New York City.

Q: If you're claustrophobic, is that a concern?

A: Yes, because we do not have open MRI at this time but hopefully in the near future we should be able to get that, but we do show you really nice CDs and music headphones when you're in the MRI machine but it's a long exam.

Q: Because that's that would be my concern I mean I had an MRI once and they said to me "are you claustrophobic?" And I said "hell yes." And they tried me on the one that wasn't open and I had a real problem with that and they moved me to the other one, but I guess there are ways that you can somehow get someone like me through the process without them freaking out right?

A: Yes, if you provide us with your favorite music ahead of time, whatever it may be, Beatles or whatever like, and also you know for peds patients I remember during my fellowship they would have really beautiful Disney themed CT scanners and you can make the environment a

little bit more user friendly till we get our Open MRI.

Q: So have some Crosby
Stills and Nash ready for me if I ever go down there.

A: Hundred percent haha.

Q: I'm curious now, a neuroradiologist,
obviously you did fellowship training
after you graduated your residency with
radiology. What made you decide to go into that
area?

*A: Oh I just loved brain I just I'm so
fascinated by all the things we know
about the brain the small little thing which
controls your whole body, and so many
things that we don't know so half of the
brain, the left side of our cerebral
hemisphere, there's very little we know
about what it can and cannot do and I
think the possibilities are just so many
so I'm just very fascinated.*

Q: Okay great well thank you Dr. Rahmani for joining us
on SBH Bronx health talk. For more
information on services available at SBH
health system visit www.sbhny.org, thank
you again.

A: Thank you.