RadioMD Interview with Adam Sheriff, MD

Melanie Cole (Host): [00:00:04] Welcome to the podcast series from the specialists at Penn Medicine. I'm Melanie Cole and I invite you to listen as we discuss the Penn Medicine Chest Wall Trauma and Slipping Rib Program. Joining me, is Dr. Adam Shiroff. He's the Director of the Penn Center for Chest Trauma and an Associate Professor of Surgery at Penn Medicine. Dr. Shiroff, it's a pleasure to have you join us today. First, tell us a little bit about chest trauma. What's the prevalence and the most common way that it occurs?

Adam Shiroff, MD, FACS (Guest): [00:00:33] Sure Melanie. And thank you for having me. Chest trauma in general, is an incredibly common problem we face in trauma surgery.Three quarters of all traumatic deaths involve trauma to the chest.

Host: [00:00:50] Well then as long as we're talking about chest trauma and slipping ribs for other providers, tell them what slipping rib syndrome is.

Dr. Shiroff: [00:00:57] Slipping rib syndrome itself, anatomically, is not actually a rib problem but it's a cartilage problem. So, the ribs as they become the costal cartilage on the anterior chest have multiple cartilage to cartilage junctions that are very thin and very easy to break and in the majority of the patients that I see, most of whom are very young, healthy athletic people, there's a single cartilage junction that's broken. It's often at the junction of the 8th and 9th or 8th and 7th costal cartilage and when that intercartilage junction breaks, it allows the inferior costal cartilage to move. As that costal cartilage moves, it irritates the intercostal nerve that lives just above or just inferior to the rib above causing a constellation of symptoms.

One of the issues with slipping rib syndrome being called multiple things, anything from clicking rib to displaced rib to rib tip syndrome to painful rib syndrome amongst other things; is that it makes it very difficult not only to study it but to communicate it's prevalence, characteristics and modern therapies.

Host: [00:03:56] Well then tell us a little bit about your program at Penn Medicine and what conditions are treated. What makes it stand apart as we're talking about slipping ribs and chest trauma? Tell us what's unique about your program.

Dr. Shiroff: [00:04:08] So, the Penn Center for Chest Trauma at large is a very big multi-collaborative, multispecialty program that really encompasses all of

the things that high level trauma centers do. The Trauma Center at Penn as really a quaternary referral center meaning we receive patients from other level one trauma centers in the region put this center together to really harness in a multi-collaborative way all of the intellectual and academic firepower that goes into each sort of subspecialty that treats the chest. And that ranges from trauma surgeons, obviously to neurosurgeons and spine surgeons, thoracic surgeons, pain and anesthesia providers, our rehab specialists and everyone in between and by no means should we forget the bedside providers, the advanced practitioners.

Host: [00:04:59] Well then what happens if the condition isn't addressed? Can independent bone become necrotic for example. Tell us about complications if it's left untreated.

Dr. Shiroff: [00:05:08] Sure so, the majority of patients that I see, have been left untreated for usually timeframes measured in years. This cartilage rupture occurs and then usually the pain worsens over time and then it sort of, it's almost the equivalent of a low back pain. You can try some things and maybe physical therapy helps for a little bit, maybe you are on your nonsteroidals for a little bit but in the end, nothing really takes it away, nothing makes it better. And patients usually by their own research end up finding myself and others at the center in a sort of desperate plea for getting their life back.

Host: [00:05:44] Well then let's talk about diagnostic criteria and treatment. So, tell us how advances in radiologic imaging for example have augmented your diagnostic capabilities for these types of chest trauma and what's the most common treatment for slipping rib?

Dr. Shiroff: [00:06:00] So, in terms of diagnosis, the most common imaging study is a CAT scan of the chest. It doesn't involve any contrast. It's done very safely with low levels of radiation these days. And it provides an enormous amount of critical information. A lot of that information is ensuring that it's not something else. We want to make sure that we're hunting down the right diagnosis and given the difficulty of obtaining this specific diagnosis and the work up that most of these patients have undergone, we want to certainly make sure that before we take someone to the operating room that we're headed in the right direction.

The advances in technology allow me as the surgeon, the ability to take a CAT scan that's very good at looking at bones and solid organs and actually play with the windows of that CAT scan and bring out the cartilage itself. This is not something that's routinely done by our radiology colleagues and for good reason. Because it's incredibly uncommon for a radiologist to be asked to look

for slipping rib syndrome on a CAT scan. There are other modalities that are used. MRI can be used. Dynamic ultrasound has been used. I don't rely on those studies as much, because a good history makes the diagnosis the majority of the time.

If the patient is able to feel motion at that junction on the anterior chest, on the costal margin, popping, clicking that they describe, something poking out occasionally, something feels like it gets trapped on the inside; I don't need an ultrasound to tell me that there is something moving. The patient has told me there is something moving there.

The reason for the CAT scan is to ensure that I have all of the operative information needed such that I can when we do operate, treat not just the slipping rib but ensure that there's not another piece of cartilage that could be moving or slipping adjacent to that.

Host: [00:07:44] Tell us a little bit about your outcomes for slipping rib at the Penn Center for Chest Trauma.

Dr. Shiroff: [00:07:48] Sure so, outcomes have been really remarkable. We started doing this specific procedure about two years ago now. We've gotten incredible outcomes. Just recently, I operated on my youngest patient who was 14. She was brought to us from out of state as most of the patients I'm seeing these day are. And when we operated on her, and just to give you briefly the description of the operation, it's a relatively small incision right at the costal margin. We dissect down through and split the external oblique muscle. We don't divide it, but we split it along its fibers just for the providers in the audience. And we come down onto the costal margin and it's very clear right from the start what area is moving and it's remarkable that it's 2020 and we are just now sort of figuring this out.

That moving piece of cartilage historically has been resected. I've done that operation. The problem with that and it's supported by recent literature is that the resected cartilage leads to immediate relief but over time, that pain and that sensation although no motion or clicking associated with it any longer; the pain comes back. And part of me just sort of thinking about this in my mind, it makes sense that if you take something out, the body has to adjust for that change in anatomy. And all of the muscles that insert on that area have to scar down and insert on a rib above. That rib above now has the intercostal nerve, the one that was irritated, now exposed and it leads to recrudescence of that pain down the road.

That caused an evolution in this treatment. So, we started to figure out a way

to fix the cartilage back to where it belongs. And that's really the mainstay of treatment operatively for slipping rib syndrome is actually suture fixation. We use a very heavy orthopedic type of suture. Other options for more complex cases involve titanium plates and screws but that is sort of outside the scope of a regular slipping rib case.

In general, it's a relatively small incision. The operation is an outpatient surgery. Patients are home the same day. They do experience a decent amount of pain immediately postoperatively because of that dissection through the muscles and getting down to this area that's chronically irritated. But universally, by two to three weeks, they are feeling miraculously better. Resolution of their symptoms even from those who came in describing inability to eat because of a slipping rib on the left side. They are back to functioning at full speed and athletics at six weeks and we have had just fantastic outcomes from this operation so far.

Host: [00:10:16] What great information. So informative Doctor. Wrap it up for us. What would you like to summarize or what would you like other providers to take away from this segment about the Penn Medicine Chest Wall Trauma and Slipping Rib Program?

Dr. Shiroff: [00:10:30] So, my message to other providers would be just that this entity does exist. It does lead to life altering chronic pain and then for primary care physicians, when upper abdominal pain is not making sense and the hooves don't turn out to be horses, that potentially a costal margin rupture and motion at the costal cartilage could be causing your patient's upper abdominal or lower thoracic pain. And there's ways to treat it and successful ways to treat it. So I would ask to please do the research, seek us out on Penn Medicine's website and we'd be happy to discuss these cases myself with you on the phone and happy to see your patients and take care of them in the future.

Host: [00:11:08] Thank you so much Dr. Shiroff for joining us today. That concludes this episode from the specialists at Penn Medicine. To refer your patient to the Penn Chest Trauma Center at Penn Medicine, please visit our website at www.pennmedicine.org/refer or you can call 877-937-PENN for more information. Please remember to subscribe, rate and review this podcast and all the other Penn Medicine podcasts. I'm Melanie Cole.