Dr. Travis Dekker:

Welcome to the Arthroscopy Association's Arthroscopy Journal podcast. The views expressed in this podcast do not necessarily represent the views of the Arthroscopy Association, nor the Arthroscopy Journal, and they're not meant to be used as treatment recommendations for patients. Welcome everyone. I'm Dr. Travis Dekker, coming from the United States Air Force Academy, and today I'll be talking to a leading surgeon scientist from HSS, Dr. Gregory DiFelice. He's well known for his ideas and research with ACL preservation, and repair surgeries, to facilitate faster return to activities and avoid greater surgical morbidity. He's an associate attending professor for both HSS and the Weill Cornell Medical College. He's been the mentor to countless medical students and residents that have helped shape and transform sports orthopedics. It's an absolute pleasure to be welcoming this world-renowned surgeon, and I look forward to speaking with him today about one of the topics he's extremely passionate about.

Dr. Gregory DiFelice:

Hey, Travis, thanks for the invite. Looking forward to having a good discussion.

Dr. Travis Dekker:

Well, sir, today we're going to be going through your recent article discussing a call for a change in the management and treatment of combined ACL/MCL injuries, and a call for an updated treatment algorithm. We'll be discussing your paper, the "Treating combined anterior cruciate ligament and media collateral ligament injuries operatively in the acute setting", is potentially advantageous, which is in preprint for Arthroscopy, to be published of this month. So let's get started. Dr. DiFelice, can you give us some background on what drove both you and your co-authors to write this paper, and a call for updated management of combined ACL and MCL injuries?

Dr. Gregory DiFelice:

Sure, I'd love to. A lot of people know my work looking into ACL preservation, and I'm the crazy guy who's started going back and repairing the ACL again. But all of that came from when I first went out to practice. I know you're a couple of years in, right? When I first went out, I was at a large level 1 trauma center up in the Bronx in a place called Jacobi Medical Center, and I was the only sports guy there, and I was charged with starting a program. And so I was inundated with multi-leg knee injuries. And we had some elective ACLs from the community, but I was really inundated with a heavily trauma of influence to knee injuries. And the trouble is, is that group, the city hospital crowd in every city is a lower socioeconomic group, and there's a lot of challenges that come along with taking care of that group, and all the healthcare disparities come into play.

And what you find is that if you have a patient with a severe injury like that, who are in a higher socioeconomic group that has more support, you might send them home in a brace, let things tighten up a little bit. You may go in and do a delayed reconstruction. There's a different way of playing things. But when you're in that community and you send people home with the idea that they're going to come back and we're going to do this in a controlled fashion, many times you lose them into follow-up, they come back, they're stiff, they have flexion contracture, chronic instability, and trying to get out of that jam becomes a very difficult one. So practicing in that environment, it didn't take me long to figure out that the benefit of treating acute injuries acutely. And so I quickly fell into a practice pattern where when folks came in with these multi ligament injuries, I would admit them immediately and get them on the table as soon as possible.

Now, originally I started out with doing what I was taught, just kind of like you're doing what you were taught, and you're just trying to make it work. So I was doing reconstructions for the ACLs and the PCLs, and sometimes we'd brace the MCLs and try and let them heal, because back then we didn't really operate on MCLs much at all. We were... the generation before us got burned very badly by operating on the MCL in open fashion and then casting them. So there was a tremendous amount of stiffness. And that middle generation in the '90s, they avoided operating on the MCL like the plague. I was taught you'd rather have a loose knee than a stiff knee, so don't mess with the MCL.

And so, that was what I brought into practice and what I found was doing acute reconstructions, et cetera, in these multi-legs, you could also end up with a lot of stiffness. And so I tended... I pared back on my interventions, and as you know, with my ACL work, I started to look at the how the ACL was torn rather than just if it was torn. And I started to incorporate some of the repair techniques that I've been known to talk about for the cruciates. And that was working so well, and the minimally invasive approach was working so well for proximal and distal detachments, that I started to do it for the MCL and found similar positive outcomes.

Dr. Travis Dekker:

The literature and what you contributed to all of our practices, especially in the ligament and less invasive procedures, has been astounding, and very much appreciate the contributions that you continue to make along those lines. Specific to this injury pattern for ACL/MCL, prior to you kind of going from that natural progression, from doing what you learned, to now what this new algorithm that you're calling for, what was your more go-to treatment algorithm for these combined injuries of the ACL/MCL pattern? And did you base that... I saw in your paper that oftentimes you'd base that off of where the tear was for the MCL and how you treated it.

Dr. Gregory DiFelice:

Yeah, so early on what I would do is just what everyone does right now. If you had an ACL/MCL, you'd probably sit on the MCL and treat it in a brace for six or eight weeks, and then you would go in and do an ACL reconstruction. And that works just fine. And a lot of people do that. In fact, that's the standard of care. We've all been taught over the years that the MCL will heal and yeah, that's true. The MCL will heal, everything will eventually heal, but the question is, does it heal anatomically, is the knee stable, and did you suffer any consequences by waiting the six or eight weeks, sometimes even more, to get the patient in to then do the reconstruction? And I would say that from my experience, a lot of times you let those folks heal in their MCL and you check them at six or eight weeks. And yeah, a lot of them have an endpoint, but a lot of them also have a one plus opening and maybe a little more.

And then we tend to downplay it a little bit. If you look at the... there's a good study from the Swedish National Registry that looked at, I think it was like over 18,000 isolated ACLs, and then they looked at almost 700 a ACL/MCLs that were treated with the algorithm I just mentioned, with conservative. And then they looked at 140 or so that operated on the MCL. And what they found was that, the ones where they did non-operative treatment for the MCL had a much higher failure of the ACL. And that gets back to stuff that we learned a long time ago that I think I might even give a little credit to my institution. And Dr. O'Brien looked at that, when they found that one of the bigger causes for ACL failures after reconstruction, was an unrecognized posterolateral corner. So the point is very straightforward. If you have some residual instability in the coronal plane, that's going to affect you in the ATP plane.

And so that algorithm for me, waiting months to several months to let it heal and then being frustrated that it was still a bit loose, and then you didn't want to take it down and do a reconstruction, because the only other option most of us have is to do a hamstring reconstruction/augmentation. And so that's

not something you just want to throw in there because that adds a lot of morbidity to the procedure. So when you combine all that, and then you add into the fact that, in my practice, I repair a good number of the ACLs, it was just a natural flow for me to say, "You know what? Why don't we just repair the MCL, because now we can do it in a minimally invasive fashion. We can use some modern day tricks so that the patients can get up and walk on it and move immediately, and maybe we can change the natural history of the way we do things."

Dr. Travis Dekker:

Well, one of the things that I, from what you had just said is, besides the concern of the unknown of what happened six to eight weeks later with residual valgus laxity, and the not-so-benign treatment, if there is residual laxity of needing to add in either a full reconstruction or augmented reconstruction/repair, there you had, you've discussed in your algorithm, that there is the concern, there are additional concerns of other problems and secondary issues that arise by waiting. Can you go through some of these and what you've seen in your practice, in terms of, have you seen residual meniscal pathology, cartilage pathology that occurs, that you have to then address, based off of waiting versus getting them repaired and moving sooner?

Dr. Gregory DiFelice:

Well, yeah. Look, the more that you wait, it's just like letting a young kid go to rehab for three to six months, and doing their ACL in the summer rather than in January, you know? You have problems, because the more that you do on that knee, when the knee is loose, the more likely you are to have troubles. Now that may not be the case if you're waiting six weeks and then going directly into a reconstruction, say for example, with an adult, who doesn't want to protect their summer, or who doesn't have those issues. But it really comes down to, at the end of the day, with my treatment algorithm is that, many times... let's take for a skier for example, right? A lot of times they have an ACL/MCL, and the standard treatment algorithm would be to brace the MCL for six to eight weeks. And at some point in the coming month when you can get them on the schedule, do an ACL reconstruction. We're going to say that they're active and they're an appropriate candidate for an ACL.

Now, many of those patients in my practice, what I would do is get them on the table within the first week or two, repair the ACL, repair the MCL, get them moving immediately, and by the time it's six or eight weeks out and you're getting ready to do your reconstruction, my patient's actually running and is essentially done healing both of them. And so there's a dramatic difference when the cards are played correctly and you can get to an all-repair algorithm, that you can basically be done healing, back to life as you knew it, by the time you're getting ready to have your reconstruction.

Dr. Travis Dekker:

I think a large hole in the literature is how do we get people back to function earlier? There's a significant amount of morbidity and secondary, I think psychological and emotional, issues that occur with the patients with these long extended rehabilitations, and need to recover and to get back to sport, especially in that younger patient, I think that we sometimes underplay, and the way that you're going about doing this and getting people back safely, it's making a difference in how we look and treat our patients. Now, as you know, my background, I come from a very reconstruction-heavy background in teaching.

Dr. Gregory DiFelice:

Sure.

Dr. Travis Dekker:

We had talked about, even before getting on, the vast array of literature that goes out to lump in all of these injuries into kind of one pot, that then spits out the, "This is what the standard is." One of the concerns that I've had, or that I hesitate with just because I am so fresh, is the concern of MCL repair, versus reconstruction from Stannards' work in the mid-2000s, reporting like a 20% failure rate versus a 5% failure rate in the reconstruction versus repair.

Dr. Gregory DiFelice:

Yeah.

Dr. Travis Dekker:

Can you talk a little bit about the literature, which I know we could spend hours about, but also about you had mentioned modern technologies, modern implants, modern techniques that have changed, because there's been a lot of change since that time that have allowed us to get better and have more acceptable results when using and utilizing this algorithm and utilizing repair?

Dr. Gregory DiFelice:

Yeah, that's great. Yeah, it's a good segue. Look, Stannards' paper in the 2000s or whatnot, was based on patients done in the '90s and early 2000s, open techniques, very heavy trauma. Over 80% of his patients were skank, class four or five, with other bony fractures. So that group was a bit of a hot mess. And that's one of the troubles is that's, oh, that's one of the only repair versus recon papers. So everybody reads it and goes, oh look, repairs got a bigger failure rate. And you're like, just wait one second here. Okay, you're talking about an incredibly severely injured group of patients, and you're talking about older techniques, lower strength sutures, anchors that were just rudimentary, the basic things we started with.

One of the big modern advances in all of this is the suture augmentation technology, and the suture bracing. So I can go in and anatomically repair these structures through two small little incisions using a percutaneous approach instead of flaying the whole inside of the knee, and I can put the anatomy back where it needs to be, and then brace it, so that the patient can get up and walk on it the next day, bend it and straighten it without worry that they're going to loosen everything up because you've got a reinforcing brace running right along the MCL. I personally think that's a game changer. And I talk to a lot of my patients, and some of this you can catch on my Instagram at drdifelice@drdifelice, and you can catch some of these cases where I interview the patients five days post-op from grade three ACL/MCL that were both repaired, and the patient stands up and says, "Doc, my knee feels stable. It doesn't bother me anymore. It doesn't hurt."

And those are the things that I've learned over the years. And now there's some people, some of the old school guard who, what the hell are you doing putting patients on the internet? And this kind of shaking their finger at me. And my reason for doing that was like, "Hey, if nobody ever sees this, and nobody ever hears the patient saying, "My knee feels 100% better", and then they, so they can see the difference. If nobody sees that, what I see in my practice, then no one's ever going to believe it because you got to wait 10, 15, 20 years to get your paper together and do all that. So I have the papers, we write in that, we write the techniques, we write the follow-up, especially with the ACL repair. And when you combine all that with the newer technology, the better understanding of the anatomy, the critical understanding that we need to move these people immediately so they don't get stiff, right?

Now, look, we learned all this from the guys, the giants who went before us. So it's not that you and I are smart, it's all the generations of surgeons. We're just building on it. And so you get to this point and

you're like, "Wait a second, the body can heal. Let's just help it to heal. I mean, what's the difference between an MCL that you wait eight weeks and it's loose, and an MCL that you wait eight weeks and it's stable? I'll tell you what the difference is, how disorganized the tissue was when it started to heal. And as a surgeon you can sneak into a little window and go down and tack the deep MCL down with a little knotless brace, put the superficial MCL down, pull the MPFL over all with a little tack, run an internal brace so they can move immediately. Now you've organized the tissue so that the body doesn't have such a heavy lift to heal it, right?

So what I do is, honestly, just give the body a helping hand, you know what I'm saying? And that's the thing is like, in the past... and the tough thing about interpreting the literature, is that the literature is a hot mess of different techniques done on different types of clinical scenarios with different amounts of follow-up with different rehab. And as you know, it's very hard to draw conclusions. I know this from my 15 years of ACL repair, and publishing everything on that, is that one of the hardest parts about getting people to understand and consider what I'm suggesting, is the fact that the literature is all over the place.

You can even look at the paper that you were on. You were on a pretty heavy duty MCL paper, right, Prospective, randomized study, with you, and LaPrade, and the gang, Engebretsen, I think, was on that and stuff. And the paper was presented at AOSSM as Repair versus Recon. And I was listening to the paper when I was at that conference and I was like, wait a second guys, this isn't repair versus recon. This is recon versus recon. It was done two different ways. And so what I'm talking about is literally tacking back each individual torn part to where it's supposed to be, with a minimally invasive technique, bracing it so that you can move immediately, and then getting on with it. And only using these bigger reconstructive techniques when patients fail, right?

Now, I'm not saying do it for everybody. Certainly there's times when you have a very mild laxity and you let them heal, when the anatomy isn't very disordered. Okay, that one's probably going to heal. We can wait a little bit. But if you're going to go in, and acutely repair the ACL, because now you have a minimally invasive technique to let the person heal the ACL with an incredibly fast recovery, for certain, well-chosen individuals, notice how I mark my words, because I've been attacked so many times. But if you can do that and you're going to go in and repair the ACL and try and get it to heal, well, heck, throw a little suture anchor in the MCL, and tack that one down and so that they can get up and they don't have to worry about it.

I have a great case for this one. It was an amazing case. So I played a lot of rugby and I played for over a decade for the New York Athletic Club, and I took care of a lot of the patients. And nowadays, they have the PRO Rugby, Major League Rugby. And one of my patients from back in my playing days, was playing for the PRO team, and he was playing against San Diego and somebody took out his knee and he had an ACL/MCL grade 3, ACL and MMCL. And he also tore his lateral meniscus. And he was sent to the team doctors who all said that, "Oh, you should be in a brace for two months and then have your reconstruction and then we'll trim the meniscus and then a year from now you can play again."

And the guy said, "Doc, the World Cup's in four months. I want to play. This is my last chance. I'm 30 years old, I'm not going to be able to play anymore." And he knew me because I had treated a broken ankle he had a while back, and he called me up and he said, "Hey, what can we do?" And I said, "Well, look, the only way you're going to have any chance whatsoever to play in four months is if we try and repair it. And I think it's a pretty good tear. I think we can repair it."

And sure enough, we went in, and I repaired his ACL, I trimmed his meniscus, and I repaired his MCL acutely. The kid... he showed up to my office within a week or two, and he was running up and down the hallway, hopping from side to side because his MCL was stable, because we had braced it and repaired it. And sure enough, he was ready to play at three and a half months with a stable knee, ACL/MCL. His

knee felt so good that he decided to play another year of professional rugby and told me straight away that his other knee felt worse. That was just beat up from playing for all those years. So these are the cases that you learn from, you start to believe, and this isn't just something that I just picked up a week or two ago. I mean, I've been treating patients like this for 15 years.

Dr. Travis Dekker:

We'd like to thank all the listeners this evening for tuning in. We'll be breaking this down into two parts, and we look forward to having you tune in to the next podcast for part two with Dr. DiFelice.

And the views expressed in this podcast do not necessarily represent the views of the Arthroscopy Association, nor the Arthroscopy Journal, and they're not necessarily meant to be used as treatment recommendations for patients. But we really thank you all for joining us and hope you were able to learn something tonight in the innovation, and how we can continue to look at new avenues and ask, and continue to ask questions.

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