Dr. Travis Dekker:

Welcome to the Arthroscopy Association's Arthroscopy Journal Podcast. Welcome everyone. I'm Dr. Travis Dekker, coming from the United States Air Force Academy and today I'll be talking to both a friend, an upcoming orthopedic superstar out of the University of Utah, Dr. Justin Ernat. He has been a prolific contributor to orthopedic sports medicine early in his career, helping guide treatment strategies through his various research articles as it pertains to both complex and common sports orthopedic pathologies. He serves as a team physician and assistant professor of orthopedics and served as an amazing host for the 2022 AANA Traveling Fellows at the University of Utah. Today we'll be speaking about one of his recent publications published in the April edition of 2022 of the Journal of Arthroscopy Sports Medicine and Rehabilitation entitled Shoulder Arthroscopy in Conjunction With an Open Latarjet Procedure Can Identify Pathology That May Not Be Accounted for With Magnetic Resonance Imaging. Welcome to the podcast Justin.

Dr. Justin Ernat:

Thanks for having me, Travis. This is such a privilege and a pleasure to be talking about sports medicine with you, my colleague and friend, and also for us to be able to share our research on a more personal level.

Dr. Travis Dekker:

Alrighty, Justin, let's get it started. Your article is extremely impactful for those of us performing both primary and revision open shoulder reconstruction procedures in the setting of recurrent shoulder instability. I know you performed this study with some of the preeminent current shoulder surgeons in our specialty. What did you notice during your time with them that led you to ask this question?

Dr. Justin Ernat:

That's a great question. Actually, this question had been brewing with me prior to even working with some of my senior authors. And as I was learning the technique of an open Latarjet procedure and leaning on the expertise of other colleagues that had performed the procedure more routinely, there was the commonly the question of whether we should be scoping these patients prior to the open procedure. And to be honest, it was quite a mixed bag of results. And then when I did get the education under my senior authors and noticed that all of them were scoping and these were people that were doing high volume Latarjets, it seemed to be making more sense that commonly we would be doing other little procedures at the time of the indicated Latarjet. And it really prompted me to wonder if this should be a mainstay of treatment and do we need to objectively identify what procedures or pathologies we need to be identifying and preoperatively preparing to encounter such things other than just correcting the patient's shoulder instability.

Dr. Travis Dekker:

That's awesome, Justin, and very observant from your early military career dealing with so much shoulder instability. So with that and with what you found with the senior authors, can you briefly summarize the findings of your paper and some of the key takeaways specifically from this paper?

Dr. Justin Ernat:

Yeah, of course. So we looked at this patient population from a few different angles. So the first angle was that we wanted to identify if our MRI reads in our preoperative imaging is correlative to what we find on a diagnostic arthroscopy. And then number two, we wanted to find if these differences were

clinically impactful. And so one example might be that there was retained anchors in the revision Latarjet patients. Well, that would seem obvious to a lot of people, and whether that was found on preoperative imaging or not really, might not impact the way that we approach the patient. So we were more interested in the additional pathology that we said would make a critical difference. And we defined critical difference as something that might alter the procedural time, procedural equipment or positioning of the patient or postoperative rehabilitation. And so these are the pathologies that we focused on.

And when we looked at it from those two angles, first looking at the difference between imaging and arthroscopy findings, we looked at it as basically, was the MRI over calling or under calling pathology? And when we combined basically a difference of pathology from MRI reads to arthroscopy, there was a 40% chance that there was a discrepancy, whether it was over called or under called. That can be pretty impactful both for your discussion with the patient or for your operative time planning or maybe even for positioning. For me, for example, if I know a patient has a posterior labral tear, I'm positioning that patient in the lateral position, but if I'm going in there to do a Latarjet, they're going to be in the beach chair position. So this could impact equipment, OR time, pretty significantly and 40%, almost half of the patients, there was a discrepancy here where it may impact our decision making.

The second half of this was, well, is our decision making impacting the patient or is there a clinical relevance? And this occurred in about 20% of patients where there was 52 additional procedures out of over 150 patients that were performed. The most common ones of these were ones that we would expect, but in the end it really prompted us to say, "Okay, one out of every five patients is going to potentially be benefited from this arthroscopic procedure, with procedures and protocols and pathologies, that might not be conducive to an open approach." And this is pretty impactful.

Dr. Travis Dekker:

I think that the findings are extremely impactful and that they've altered my practice and how we did it and observing that from similar senior authors. But I think it's astute of you to look at the differences between things that we just simply find on imaging and those that actually actually make a difference and that can alter the surgical trajectory of the patient and ultimately even rehabilitation, return to sport and those critical dynamics. Can you go through some of the more common pathologies that were observed on arthroscopy but not MRI?

Dr. Justin Ernat:

Yes, of course. So it was some of the stuff that we maybe would think to expect but not truly expect. So the most common ones were additional labral tears, so superior labral tears or posterior labral tears or even more complex tears that were circumferential in nature. There was a fair share of additional rotator cuff tears. Now, some of these just required a simple debridement, they did not require a full repair. But again, going back to kind of our previous question, this could be impacted by your positioning. People that position in the lateral with the distractor in place might not commonly go look subacromially to look for these bursal sided tears that could use a decompression or a cleanup. And it was important to note that again, we were looking at over calls and under calls. So a lot of times, almost 50% of the time when there was a discrepancy, it was that the radiologists over called the pathology.

Now naysayers might say that, "Well, I read my own MRIs. I don't go off of what the radiologist says." And that's definitely the right practice. But we all have those patients that come in maybe from out of town or from another facility, and they'll come in and they'll say, "Well, I have my radiology report, but I don't have the images." And it's obvious this patient has had a prior arthroscopic labral repair and they have bone loss on their x-ray. We might just be thinking, "Okay, I'm going to go in there and do a

Latarjet." But we really need to be looking at these images ourselves and confirming, and this study would go to show that we can't rely on those radiology findings.

Perhaps the most interesting one to me were actually the most simple ones. And these were the ones that were more commonly under called than over called, and that was additional loose bodies in the joint and subscapularis tears, which I thought was fascinating. So the loose body thing, again, the naysayer may say, "Well, I'm doing an open procedure, can't I just fish out the loose body anyways." And that may be true, but I think with the open procedure for a Latarjet, we're not doing quite as much capsular dissection. We're usually using a subscapular split as opposed to a total shoulder arthroplasty or something like that. And we may not be able to as effectively look into all of the recesses, the posterior shoulder joint and things like that. And the last thing we want to do is go through this big glenoid reconstruction procedure and leave some loose bodies behind.

Same with the subscapularis tear. If we're just splitting the subscapularis muscle belly through an open approach and we're not looking at the articular surface of it as it attaches to the lesser tuberosity, we could potentially be missing a functional or pain limiter or a pain generator in a lot of these patients. And so I think those two to me were the most surprising yet most eye-opening of the importance of the diagnostic arthroscopy.

Dr. Travis Dekker:

I completely agree that the simple things or some of the things that matter most in terms of I think arthroscopically, we get much better views of the joint as a whole. And so by doing so, finding these things that might be much more subtle and that might not be reported are critical to optimize that patient's outcome. One of the interesting findings that I found and that I found most astounding, was the discrepancy between reporting of bone loss. So what method are you using to routinely measure glenoid bone loss, and what do you make of the discrepancy between the arthroscopic and radiographic measurements of the bone loss?

Dr. Justin Ernat:

That's a super and great question, because it's a question that as you and I know from our time at the same fellowship with our mentors, there's sometimes just clinical acumen that people are using to make the decision to do a bony reconstruction. There's sometimes people are using strict measurement guidelines. To me, actually, a lot of the times the clinical demographics and outline of the patient are equally as important as the bone loss measurement. When I'm doing bone loss measurements, I use it honestly Travis, more often in the primary setting where there's a worry about bone loss, where I'm trying to make that decision of, are we going straight for bony reconstruction as a primary procedure versus perhaps an arthroscopic soft tissue stabilization? I typically use a best-fit circle method like kind of the PICO method and on a 3D reconstructed glenoid with humeral subtraction, that's my go-to.

Honestly speaking in the revision setting, if there's even identifiable bone loss on an MRI or imaging and the patient has already failed a soft tissue, I have a low threshold to go right to a bony reconstruction or augmentation procedure. And in those scenarios, I'm not routinely ordering a CT scan just because if I know that this is a revision scenario and I'm going to be a little bit more aggressive in my treatment of the bone loss anyways, I don't want to expose the patient to radiation. As far as what I make of the radiographic discrepancy, I think likely, that comes down to probably a lot of these decisions were made just on MRI and the MRI was not formatted to where the radiologist would've been discreetly looking to report and recount the bone loss.

At a high level tertiary facility like the Steadman Clinic where this was performed, a lot of patients bring imaging with them or these decisions are being made in a revision setting or a unique bone loss setting.

And so that would be my best speculation as to what the discrepancy was. But again, I think it all kind of wheels back to the fact that we as the surgeon have the pleasure of seeing the patient in person, piecing all the puzzle pieces together, whereas our radiologists are simply having images in a closed environment situation where they don't have all of the puzzle pieces. And even more importantly why we need to be the detectives that are reading the images ourselves, taking the clinical vignette and coming up with the right treatment plan and diagnosis for these patients.

Dr. Travis Dekker:

Justin, I think that bringing us back to what is best for the individual is always good. I think that we learned from one of our mentors, shout out to Dr. Thomas Hackett, is that you treat the patient not the images. And there are a lot of very high risk patients that may need primary bony reconstructions and may not just fit down this nice neat algorithm. And I think with complex shoulder procedures and recurrent instability, I think that matters even more. And I recently did a podcast with Dr. Dickens, another army surgeon like yourself, that looked at the failure rates of revision arthroscopic Bankart repairs after a failed soft tissue procedure published in the Journal of Arthroscopy. And they found very a similar approach to what you're discussing. We don't know whether or not this is simply a bony problem versus that of a capsular issue, soft tissue problem, but that treating the individual is for what they're coming in with and what their goals and desires are, probably the most important aspect of treating these individuals successfully, much more so than our academic numbers that we love talking about.

But because we do love talking about academic numbers, the University of Utah, I was blown away with your all's program there, and I think adding you to that system is just going to make University of Utah a powerhouse for years to come. You guys perform a lot of high-end surgery as a tertiary referral center, near a lot of ski hills themselves with a lot of people just like we saw in fellowship with bad shoulder problems. So have you all worked out with your radiology department or do you have protocols or do you put in specific requests to help correlate some of these radiographic findings and to help look for further things that may require intervention?

Dr. Justin Ernat:

Yeah, so I don't think that we have any specific protocol per se. We have about five people here that are doing open bony glenoid reconstructions, and we kind of all have our own algorithms and approaches to such, both open and arthroscopic, autograft and allograft. And again, as you alluded to, very patient specific decision making. So with that in mind, I don't think we think we have a specific global protocol. What I will say is, probably more importantly even, is that we routinely have open discussion with our radiologists, both patient specific or patient in specific. And so it's not infrequent when ordering imaging for a unique complex problem like this that within our own medical record system, either I'll reach out to the radiology department or the radiologist on staff, before conducting the study or before formatting the images, will reach out to me. And we have an open dialogue like, "Hey, what are we looking for? What do I need to do to format these images? Do you want 3D reconstructions or not?"

And so it's as simple as just introducing yourself, talking about your practice, creating that open dialogue that makes all the difference. And so now after having kind of established that rapport, when I go to order, say my 3D CT with reconstructions, it's as simple as putting it in the comments as, "Please obtain formatted sagittal CT scans on phos to the glenoid with additional 3D reconstructions and humeral subtraction per Dr. Ernat's routine." And I put that in the order comments and they know. They know that from previous formal informal discussions that, "Okay, this is Dr. Ernat, he's looking for glenoid

bones and this is how we're going to format it." And it's just that professional relationship that's been established that goes a long way in patient care.

Dr. Travis Dekker:

Being new back out to the Air Force Academy, one of the key relationships that I've tried to develop is with our musculoskeletal radiologists and having an open dialogue regardless of what the pathology is. And sometimes they catch things that I don't on the MRI despite trying to, just as you said, look at all the images ourselves. And that open dialogue I think ultimately helps the treatment of the individual. Sometimes more eyes on an individual the better to help bring in the expertise of multiple individuals. And then Justin, there's a lot of really key and critical findings that came out of this paper is specifically some of the recommendations that you all have made. So with those recommendations, how have these findings impacted your practice?

Dr. Justin Ernat:

So I think most importantly what this has impacted for me is the preoperative counseling of patients, number one. And number two is the preparation of my OR. And so from the preoperative counseling perspective, I am of the mindset where it's never a good idea to tell the patient or even in your own mindset and go in there and say, "Hey, we'll see what we see and we'll adjust accordingly." And kind of a laissez-faire attitude to the approach. When I see these patients, I tell them, I said, "Our primary objective is your anterior shoulder instability and we're going to do this bony reconstruction and we'll do some soft tissue stabilization, and that is our goal. But about 20% of the time we encounter additional pathology and I need to have a real world conversation with you right now that I am going to assume the responsibility that if we encounter this additional pathology, and it's pathology that may even impact your rehab or your recovery or your long-term prognosis, that you have the trust in me to address this pathology at a single surgery rather than potentially a staged procedure."

And I think just being open with your patients and using objective data to solidify your thought process and your decision making is both reassuring for me as the surgeon, but also reassuring for the patient. And then that carries over into the OR preparation. And so knowing whether your surgery center or your facility has anchors for a rotator cuff repair or for additional labral repair or being comfortable with repairing a posterior labral tear in both the beach chair and the lateral position. Or just things like that and being prepared for the unexpected, has how it's impacted my practice. Because according to this data of over 150 patients, one in five times, it's going to be impacted

Dr. Travis Dekker:

Patient counseling and preparation helping lead to the success of the treatment of the individual. I think that's a great takeaway away from your manuscript. And Justin, out of interest, to your knowledge, did you come across what percent of surgeons routinely perform diagnostic arthroscopy prior to performing Latarjet? And are there any downsides in your opinion into performing a diagnostic arthroscopy?

Dr. Justin Ernat:

That's a really good question, Travis, and to be honest, I don't know the answer. I told you about how this thought process evolved from early in my time in the military and anecdotally speaking, it was probably a 50/50 split of people that I picked their brain about Latarjet and who was scoping and who was not scoping. And the people that weren't scoping would commonly say that the objective of their surgery was recurrent anterior shoulder instability with bone loss, and that they weren't going to waste

time, energy, or resources looking at other things. There was also some that would say that they didn't like the idea of a scope fluid altering tissue planes or visualization or things like that.

To me, I think those are fair points, but I guess I would sway the other way. Kind of how most patients when offered the chance to have a one and done surgery or just a one-time surgery, rather than being told postoperatively that they may need to have a second surgery, most patients to me are going to say, "No, let's do one and done. Do whatever you have to do." I think that would be the majority of our experiences. So to me, that answers the first kind of pushback on arthroscopy.

The idea of the scope fluid altering tissue planes maybe makes sense a little bit, but at the same time, we could look at this conversely and say, "Okay, well 80% of the time, you're not going to have to worry about doing an additional procedure." And probably for the majority of us that are indicating patients for Latarjet, we're very proficient at a quick diagnostic scope arthroscopy, and we may not even have to violate the rotator interval for that matter. Just using a posterior viewing portal might be all we need to do to confirm this pathology. And I would say that the impact of three to five minutes of arthroscopy prior to going open, really is not going to be that impactful on the tissue planes and if anything more impactful on ultimate outcome and patient satisfaction. And so for me, I would say those would be my rebuttals to those arguments.

Dr. Travis Dekker:

Justin, I really appreciate you taking the time to go through your article with us and how it's impacted not only your practice but your clinical decision making. So as we get ready to part ways, do you have any words of wisdom for us and maybe future directions of research as it pertains to open shoulder reconstructive procedures in the setting of recurrent instability?

Dr. Justin Ernat:

Thanks for having me, Travis. I would say parting words of wisdom is that as surgeons, we always tend to reflect on our worst case scenarios, not our successes. I would not say that this is an article that talks about failures or worst case scenarios, but any time in medicine where there are deviations in our standard of care of up to say 20%, like in this article, that's a significant deviation. And so I would say along those same themes and thought processes, I would use this article to reinforce your decision making for those not so common scenarios and only optimize your patient care.

As far as future directions of research, I think this is probably bridging a lot of the push towards alternative bony reconstruction procedures, those specifically which are arthroscopy based, whether it's arthroscopic Latarjet or allograft glenoid reconstruction. I think this is only going to kind of translate into those fields as well. Perhaps having those tools in your toolkit and being able to do everything arthroscopically could make this sort of decision making of converting from an arthroscopic to open procedure, less complex. So I think as we learn more and more about shoulder instability, we've become more savvy at it, less patient time in the operating room, less morbidity, and hopefully less complication and great results.

Dr. Travis Dekker:

Well, Justin, this is one of the podcasts that I've definitely taken the most away from and have really learned a lot from. And your article published in the Journal of Arthroscopy Sports Medicine and Rehabilitation entitled Shoulder Arthroscopy in Conjunction With an Open Latarjet Procedure Can Identify Pathology That May Not Be Accounted for With Magnetic Resonance Imaging from April, 2022, can currently be accessed at www.arthroscopyjournal.org. Thank you all for joining us today, and I hope you all have a great day.

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