

Dr. Andrea Spiker:

Welcome everyone to the Arthroscopy Association's Arthroscopy Journal Podcast. I'm Dr. Andrea Spiker from the University of Wisconsin. Today I have the distinct privilege of speaking with Dr. Michael Dienst, who is joining us from Munich, Germany where he is a hip specialist at OCM Orthopedic Surgery.

Dr. Dienst was a senior author of the article titled, Preoperative Alpha Angles Can Predict Severity Of Acetabular Rim Chondral Damage In Symptomatic Cam-Type Femoroacetabular Impingement: A Prospective Observatory Study, which was published in the April 2022 edition of the Arthroscopy Journal. Dr. Dienst's co-authors include, Hao-Che Tang, I-Jung Chen, Mohammed Sadakah, and Nils Wirries. Welcome, Dr. Dienst, and thank you very much for joining us.

Dr. Michael Dienst:

Andrea, thank you so much for your kind invitation. It's a great pleasure and honor being invited to this podcast. So thank you so much.

Dr. Andrea Spiker:

Thank you. Michael, would you mind starting our conversation today by telling us a little bit about your practice?

Dr. Michael Dienst:

Yeah. So as you already announced, I'm Michael Dienst, I'm working as a hip specialist at the OCM Orthopedic Surgery in Munich. I did my Orthopedic Residency at the University Hospital in Homburg an der Saar, Germany. And actually I did a couple fellowships in the US at the University of Utah in Salt Lake City. I did one Sports Medicine Fellowship with Bob Burkes and one joint reconstructing fellowship with Chris Peters. And at that time I was already exposed with the open joint preservation surgery for FAI very early, it was in 2002. So 20 years ago before the first publication of FAI by the Bern group. So very early exposure with that topic. And since 2009, I'm working as a specialist in Munich and I do everything around the hip joint. I do arthroscopies, I perform open preservation surgery, including PAOs. And I also do lots of total hip arthroplasties, so everything in the hip joint.

Dr. Andrea Spiker:

Wonderful. And for the listeners who may not be familiar with some of the differences between our training in the US versus Germany, would you say that it's common that you have fewer subspecialties within orthopedic surgery and that you, for example, as a hip specialist doing the entire spectrum of hip surgery is something that is more commonly done in Germany?

Dr. Michael Dienst:

Yes, I would say that's basically correct, but also in Germany, I would say there's a trend to more subspecialties as it is probably more in the US. I would say that a few surgeons are doing hip arthroscopies are coming from the sports side, but most surgeons are coming from bigger departments, offering everything around the hip joints as I do, arthroplasty, open preservation surgeries, osteotomies and they all include also a hip arthroscopies. So probably that's what is also the development in Germany, usually there will be more, I think in the future also we will have more hip specialists as I am. I think in the US that's a little bit different. I think many for example there are many who do hip arthroscopies are coming from the sports side. This is a little bit different here in Germany.

Dr. Andrea Spiker:

Yeah, it's a very interesting perspective. I think in the US we're seeing a trend toward more and more subspecialization and you're absolutely correct. Many of us who do hip arthroscopy do a sports fellowship. There are hip preservation fellowships. I was one of those who did both a sport's fellowship and a hip preservation fellowship. And so I also do arthroscopic and open surgeries, but I don't do the arthroplasty component. And I think there's a lot of valuable interplay when you're able to offer the complete spectrum of treatment for people's hips.

Dr. Michael Dienst:

Yeah, I think it's very interesting because when you do everything, I think it's easier to decide what you do when, so you can offer joint preservation, you offer arthroplasty surgery and I think it's easier to decide for the patient what the best treatment is. You don't try to do everything for example, with the scope and you are also able to do open surgery. And for those patients who are not improving and where, for example, the joint is in a critical condition, it's easier for you then to say, "Okay, no, we need to do replacement." So I think if you do everything around the hip, I think you have the whole spectrum and you can offer everything.

Dr. Andrea Spiker:

Yeah, we'll see if that trend starts to occur more often here in the US. It is nice for the patient to have a one-stop shop where they can have all of their options at once here, we have to develop multiple teams of physicians when patients have problems that we aren't clearly able to treat with one type of treatment or another. So speaking of the differences between the United States and Germany, in the US we've seen many studies discussing the exponential increase in hip arthroscopy in particular over the couple of decades. And these are based on database studies in the United States, have you seen a similar increase in the types of hip preservation procedures, in specifically hip arthroscopies in Germany?

Dr. Michael Dienst:

Yes, actually we have seen that to my knowledge, there are no official numbers, but from my experience there was a significant increase in the number of hip arthroscopies, particularly during the years 2005 until, I would say 2012. At that time, I have seen lots of colleagues visiting us, scoping hips, doing hip preservation surgeries, et cetera. Also from Germany, many colleagues from Germany came over and wanted to see how we do it. But there was a change of the reimbursement, especially for hip arthroscopies. So between, I would say the years, 2012 and 2013, you may know that in Germany we use the DRG system and they have cut down at that time the reimbursement for the hospitals actually for hip arthroscopies and the reimbursement was reduced to less than half as it was before. And that did change the whole thing.

The interest in hip arthroscopy really went down at that time. And I would say nowadays 80 to 90% of my visiting surgeons are coming from abroad and not from Germany anymore. So if, of course the reimbursement is bad and you always think, what do you want to do? Do you want to do make money? Do you want to do fast surgeries? So for example, when you perform a total hip arthroplasty is usually a procedure that does not take much longer than one hour, or do you do complex joint preservation surgery such as arthroscopy, it takes in a difficult case, usually is a procedure that takes two hours. And if reimbursement is also for you as a surgeon, only 50% of what you will get for arthroplasty and of course you decide that you do something else. So this is, I think it's a political influence impact on this development and I would say for the past 10 years the numbers have not been really going up anymore.

Dr. Andrea Spiker:

That's very interesting. I think you make a good point and going back to the fact that you offer hip arthroscopy, hip replacement or PAO. I like to joke that I think of hip arthroscopy as detailing versus hip arthroplasty as demolition. So a little bit faster to do the demolition than detailing. And if you do have the option, as well as the less reimbursement, then surgeons may be opting a little bit more for the arthroplasty.

Dr. Michael Dienst:

That's correct.

Dr. Andrea Spiker:

So shifting gears a little bit and talking specifically about the study that you've published in arthroscopy. Can you please tell us a little bit about where the idea behind this study came about and why you decided to investigate this question?

Dr. Michael Dienst:

I have a relatively long experience with hip arthroscopies and open hip preservation surgery. I started to do that already during my residencies, during my residency in, I think the first arthroscopy I did was in 1997 or 1998, so about 25 years ago. And during those years, sometimes we saw really bad cartilage elimination in FAI already in very young adults and adolescents. And so sometimes you look in those hips, even if the patient is 15 or 16 years old and you see big cartilage eliminations, and you question yourself, how can that be?

And what I thought of some years ago was that I thought that the medium alpha angles were even more dangerous, but this was only a belief. I expected that if the cam deformity was bigger, the patient was not able to flex and rotate the cam deformity so much into the acetabulum to create damage. So actually I expected that analyzing, we would gather result that shows that the cartilage damage would be more prominent in medium alpha angles, and then with a higher and smaller alpha angles a little bit less. So this was what I expected, and so we did this study and something else turned out, so interesting.

Dr. Andrea Spiker:

And we'll get to those results in just a second. But two things I wanted you to describe for the listeners based on your study was the Lowenstein view as well as the retroversion index, because those are two things that I'm not as familiar with in my practice. Would you mind just explaining those first?

Dr. Michael Dienst:

Yeah, so I mean the preoperative radiographic evaluation is very important of course, and there have been discussions in the past. And to my knowledge, there have also been some studies, especially from the Bern group evaluating which lateral view is the best one. And so the Dunn view to my knowledge can be done in a different projections and different degrees of flexion. I think there's a 90 degrees and 45 degrees Dunn view. And I think the hip is abducted to about 20 degrees. The Lowenstein view actually is the hip is flex only to 70 degrees and abduction is 40 degrees. So the important aspect is when you x-ray the patient in order to diagnose the cam deformity, it's very important that you must not abduct and rotate the hip joint too much. The problem is when you abduct to 45, 50 or 60 degrees and externally rotate the hip joint, then you will see the anterior head-neck junction and usually you will miss the cam deformity.

The maximum cam deformity usually is at, I would say one o'clock, maybe one 30. And so it's in-between anterior and lateral. So you must avoid to abduct and externally rotate the hip joint too much. And with a Lowenstein view, flexing to 70 degrees and abduction to 40 degrees, usually you will get the anti-lateral head-neck junction where cam deformity is usually present.

Your second question, the retroversion index. I mean, when you evaluate position of the acetabulum, we all know there are different angles that you need to evaluate LCE angle, acetabular index, extrusion index, sharp angle, et cetera, crossover sign, retroversion index, posterior wall sign, issued spine sign. And of course you can also measure anterior and posterior coverage.

So when I assess retroversion first, usually I look at the crossover sign and the issued spine. So if there's a high issued spine, so if the issued spine projects into the lesser pelvis and the crossover sign is positive, then there's of course a high risk of retroversion. And then I measure both the posterior wall sign and the retroversion index. And from my experience, the retroversion index is very important. This index comes from the work of Klaus Siebenrock and Moritz Tannast from Bern. And it's, it is the ratio calculated from the length of the retroverted acetabular opening to the anterior entire length of the lateral acetabular opening. So it gives you a pretty good value about the amount of retroversion, that to my knowledge, there are two great publications of that from Moritz Tannast, I think one is in the American Journal of Ophthalmology of 2007, and one has been published in Clinical Orthopedics in 2015.

So from my experience, I would say if the retroversion index is smaller than 10%, so then the crossover is usually in the superior portion, then this is more or less with the normal limits. If the retroversion index is between 10 and 30 or 10 and 35%, then usually the problem can be addressed by arthroscopy or let's say a surgical dislocation. But if the retroversion index is higher than 40%, then you should consider a reorientation osteotomy such as a reverse PAO. So very important from my experience.

Dr. Andrea Spiker:

Yeah, thank you. That was a very clear explanation of those. So let's discuss your results next. You found that the alpha angle on the anterior posterior pelvis or Lowenstein's view nor the head-neck offset ratio were associated with the severity of the labral tear, but that both views alpha angle positively correlated with the severity of the acetabular rim chondral damage. So going back to what you had thought might be the results and then what you found. So can you talk up to us a little bit more about the significance of your findings and then also your findings related to that retroversion index that you were just describing?

Dr. Michael Dienst:

I mean, this is actually what our operative experience is, and I mean to knowledge, and this is also what was being reported from many other studies. And actually we did not expect that the results were so clear. We know from the pathogenesis that the cam part is leading to cartilage damage of the rim. I mean the labrum can escape from the cam, but the cartilage cannot escape from the cam. So, I mean, that's explaining this finding and the study, I think relatively clearly showed that. So the more cam we see on a patient, the more damage we can expect on the cartilage side. So, I mean, preoperatively when you see a clear cam and a big cam, and there's not so much pincer deformity, then usually what you can expect that you will have more cartilage damage than labral tear.

I mean, we both know that usually there's not only a cartilage damage and there's not only labral tear, usually we see both, but not every labral tear and not every cartilage damage needs to be treated, but if you have a big cam then you can expect more damage on the cartilage side and it's very likely that you need to do something on the cartilage. And I mean, the more the problem progresses, so the more

cartilage damage you have, the bigger the control labral separation is the larger the separation is then usually also the adjacent labrum gets unstable, even if you have only a cam deformity. So the pure cam is rare, so very frequent we see both, we see a combination of both of cam and cam deformity, and sometimes it's difficult to say what is predominant.

Dr. Andrea Spiker:

Yeah, it's a very challenging concept, I think. And the larger the cam lesion, I think oftentimes leads me to operate sooner on patients for the exact reason. I love your analogy of the labrum escaping and the cartilage unable to escape because ultimately with hip preservation, we're trying to preserve the cartilage. So I would ask you then in closing, as we're running low on time, do you see based on these findings and your clinical experience, that perhaps there will be a future in which we screen young adults who have large cam lesions and then prophylactically correct their cam-type impingement, or how else do you think we can apply the findings of your study to improve our outcomes of patients after hip arthroscopy?

Dr. Michael Dienst:

Yeah, I mean, that's a good question. And this is always the question which usually comes up in an FAI session. I'm still very hesitant to recommend a prophylactic surgery when you see a cam. So usually I say, "No pain, no surgery." And probably all of us, we have seen patients that were operated hopefully elsewhere, where the patient was asymptomatic and the patient had been recommended to do surgery because of diagnosis of cam deformity. And then the patient was complaining of pain post-operatively.

To my knowledge, there are no studies yet to justify that we should recommend prophylactic surgery. So we need to wait for further studies to evaluate that, probably it will take many more years before we have such studies, but I think at the moment we should be very careful. However, I think we need to look further into the development of FAI. I mean, so far to my knowledge, we know only for the cam deformity how this deformity is developing at least in the young active athlete patient group.

So we know that if you perform impingement sports activities during your adolescence, there's very high risk that you are developing a cam deformity. On the pincer side, the knowledge so far is very small. And to my knowledge, there're no studies yet that prove that actually a pincer deformity has a higher risk of developing secondary osteoarthritis. So coming to the question of screening, yes, I think it's very important that we screen young patients when they're very active. I think we need to scan the patients in the club, in the college, in sports to see if there are any clinical signs of impingement and with respect to the high risk of developing FAI with secondary damage. I think it's also very important that we need to find out training modalities for those patients who are at the risk to develop FAI. So I think it's very important that we avoid secondary damage on the long-term by creating FAI patients by high impact activities during adolescence. I think that's very important for the future.

Dr. Andrea Spiker:

Those are all excellent points. And I agree with you completely. We have a lot more to learn about how to prevent and save our young patients' hips. Thank you so much, Dr. Dienst for sharing your thoughts and expertise with us today, it's really been a pleasure speaking with you.

Dr. Michael Dienst:

Yeah, I thank you so much for inviting me. It was a great pleasure being part of your podcast. Thank you so much.

Dr. Andrea Spiker:

Dr. Dienst's manuscript titled, Preoperative Alpha Angles Can Predict Severity Of Acetabular Rim Chondral Damage In Symptomatic Cam-Type Femoroacetabular Impingement: A Prospective Observatory Study, can be found in the April 2022 issue of the Arthroscopy Journal or online at www.arthroscopyjournal.org. This concludes our episode of the Arthroscopy Journal podcast. Thank you for joining us. The views expressed in this podcast do not necessarily represent the views of the Arthroscopy Association or the Arthroscopy Journal.

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