

Avoiding Joint Replacement - Ref 129FA

with Fahad Attar

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TRANSCRIPT

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Steven Bruce

Today I am joined by Mr. Fahad Attar who is a consultant trauma and orthopaedic surgeon, also a faculty member of the British Orthopaedic Association's training academy. Fahad, welcome to the Academy of Physical Medicine.

Fahad Attar

Thank you, Steven, love to be here.

Steven Bruce

You've got a particular interest in the knee and in regenerative surgery, which intrigued me and I think we're going to hear a bit about that today, aren't we?

Fahad Attar

Absolutely. My area of expertise is regenerative therapy for sports injuries and also osteoarthritis in joints. So, we're going to talk a little bit about that, the conditions it's used in, the indications and the patient.

Steven Bruce

Why is regenerative therapy only for sportsmen? Is it not applicable to other categories of patient?

Fahad Attar

I think at the moment, most of the data we have from research available for sports injuries. They've been using regenerative therapies such as PRP or fat cell therapy injections for a few years now, more recently, it's starting to be used for the general public and population, especially for treatment of osteoarthritis, for tendinitis, and also for sports injuries as well. So at the moment, there's a big trend and move towards regenerative therapy, medicine and surgical procedures to try and stay away from more invasive surgery, if you like.

Steven Bruce

What does PRP stand for?

Fahad Attar

It's platelet rich plasma. PRP is basically a modality of treatment where we use your own blood. We spin it in a centrifuge, we get all the healing factors from breakdown of the platelets, and then we inject it back into the area of concern. And it normally takes 15-20 minutes to do, it's done in a clinic setting. And we've seen some very good results for the right indications. the right conditions, like I said earlier, mainly for tendinitis, tendinopathies, for early osteoarthritis, for early degenerative changes in the joints, and also for some sports injuries and muscle tears to try and get rehabilitation quicker to try and get recovery quicker.

Steven Bruce

Now the title we gave this discussion was looking at early osteoarthritis and avoiding joint replacement therapy. And of course, I wanted you to put in the regenerative therapy part of things as well. Should we go back to dealing with earlier OA to start with?

Fahad Attar

Absolutely. I think osteoarthritis, like we're all aware and see, is a very common condition. We see most people suffering with joints, especially knees, hips, shoulders, foot and ankle with degenerative osteoarthritis. Now osteoarthritis is traditionally more of a wear and tear disease, where your joint progressively wears down as we grow older. Obviously, other impacts such as injuries, inflammation, and any other previous surgeries can accelerate the

process. And in the current day and age we live in, we're seeing a lot of people who are more active, who have had lots of previous joint injuries, who are attending our clinics with early to moderate signs of osteoarthritis. Now we have well known treatment for severe osteoarthritis, which is a joint replacement treatment. But at the moment, there seems to be a bit of a bridge and a gap for that period of play, if you like, where patients have got moderate osteoarthritis, they're struggling with pain, they're struggling with stiffness, they cannot get back and do their own routine things they like to do, play a little bit of football, play with the kids outside. And unfortunately, there's no treatment modalities for them. So, if they failed physical therapy or medication for analgesia, for example, they tend to be left and lost, if you like, till the arthritis gets worse and then they come back and then they're ready for having a joint replacement. So,, the regenerative therapy really tries to bridge that gap of those patients who are struggling with mild to moderate osteoarthritis, who fail conservative therapy. It's just to tell them that we do have modalities and options available now to actually help them with their pain, help them with their function, and try and delay the arthritis getting worse.

Steven Bruce

So, you mentioned physical therapies there, where does that fit in the sort of panoply of options that you have available for these younger osteoarthritic patients.

Fahad Attar

So traditionally, physical therapy always used to be an early stage of intervention and treatment modality. So, once we see people in clinic, we normally start them off on pain medication, which is almost like a bridging platform with increasing from the mildest pain medication analgesia and increasing it accordingly, depending on their pain levels. And with that, we add in the physical therapy programme for improving range of motion to keep the joints supple and mobile and also to strengthen the muscles around the joint, which take the pressure off the joint. But with regenerative therapies, what we're trying to do is to try and combine an approach where we're doing the physical therapy alongside the regenerative therapy, because we know physical therapy works, and it works well. And if you've got people who are more comfortable with regenerative therapy, the joint pain's a lot better, their mobility is more improved, they tend to do a lot more and gain a lot more out of physical therapy. So, I think it's a combination approach really, with the physical therapy and the regenerative therapy that we're looking at the moment.

Steven Bruce

And are you excluding certain categories of patient from this? Are you looking purely at the active population? Or if somebody younger, who doesn't fit the criteria of a healthy lifestyle comes in, would you be treating them as well?

Fahad Attar

Not necessarily. I think age is not really a criteria, because I think at the moment, if you've got mild to moderate osteoarthritis and even though your activity levels and your age are variable, they're still suitable for the regenerative therapy procedures, so age is not really a cutoff. Secondly, activity levels, again, is not really cut off. Some people may be doing mild activity, but still having pain and discomfort, other people may be functioning at a quite high level, and they're still struggling with pain. So, the regenerative therapy is a standard approach that will help them both. And the only contraindications I would say is if you have patients who've got quite severe osteoarthritis. So, they've reached a stage where most of the cartilage is lost, they're rubbing bone on bone, then physical therapy, with regenerative therapy have limited place in the treatment and management because regenerative therapy really doesn't have the options or the criteria to start helping reduce inflammation, helping with cartilage protection, because the cartilage is already lost. That's one category, I would say is not really suitable. And we don't have much published data on them.

But for early to moderate, most patients, doesn't matter what age group, doesn't matter what activity level, will be suitable.

Steven Bruce

I'm tempted to ask, where were you 30 years ago when I needed you for my knee? But perhaps you were a bit young for regenerative surgery.

Fahad Attar

Absolutely.

Steven Bruce

What's the actual process involved in what you're describing?

Fahad Attar

So, like I said, there's two different modalities with regards to what we're trying to achieve. Now the simple outpatient modality is the PRP, which is platelet rich plasma. And the way this works is it helps reduce inflammation. And it also creates the right healing environment for the joint to start functioning and working. Now, if people have been following the PRP trend in the market over the last few years clinically, you'll see that there's lots of different products available. And PRP concentration is different and variable, the white cell concentration of the PRP is different and variable. So, we really need to know what we're treating and how we're treating it, before we decide what we need. So, for PRP, what we normally use for osteoarthritic joints, we normally use either a concentrated one-off injection in an outpatient clinic setting. But for tendinitis or tendinopathies, we use a PRP with white cell rich content. And again, that's basically to try and create inflammatory response for the body to heal. Now, that's the most common outpatient clinic option. Now the other one, which is starting to gain a lot more momentum at the moment, is your fat cell therapy injections. Now, the advantage of the fat cellular therapy injections is that we're actually providing the cellular content for the healing. So, most of us know, fat and bone marrow have a lot of cells which can differentiate and can regenerate cartilage. So, the theory behind it is to try and get as much of a cellular approach into the joint to help with inflammation, and hence give the protection and some regeneration potential to the joint itself. And also, alongside this, this will help with your pain and help with your function and your movement. So, at the moment there's more data coming across from the fat cell injection therapy, but what data we're seeing is very encouraging. We're seeing some good results. And we're seeing good long-term cohort and follow up of about three to four years at the moment. And we've got a video as well. If you want to just go through a patient's journey. There's a good video on the fat stem cell injection, which we could play.

Steven Bruce

Yeah, let's have a look at that video. If you could tell us what's going on while Justin runs the video.

Fahad Attar

So the patient's in this video is the patient with a knee osteoarthritis, he's had early to mild osteoarthritis and his knees. He's had analgesic therapy, which he has failed, he's still struggling despite that, he's had a physical therapy programme, which has partially helped him and hence he was a suitable candidate, we've already done the right investigations with MRI and x-rays to proceed with a fat cell injection. The procedure is done under sedation, it's done as a day case procedure. Initially starts off with our plastic surgeon colleagues harvesting the fat, this is either taken from the abdomen or the thighs. Then we put it into a sterile syringe and we run it through a centrifuge, as you will see in a minute. Now this basically spins to try and differentiate the different layers of fat. This is normally variable

spin time and once it comes out, it comes in different sort of sections. Now what we're more interested in, is in the aqueous fraction, so we remove that and then we're left with the concentrated fat. Now what we're trying to do here is we're trying to break down that fat into much smaller particles. So, this is a mechanical breakdown process. And once this is spun through both the syringes on numerous occasions, it's normally 20 is what they recommend with the system we use. So, we get a good nice, particulate breakdown of fat, which then we concentrate again in a syringe, and we're spin it in the centrifuge. Now the second spin really tries to concentrate all the cellular structures that we need, that will actually be used in the ultimate injection into the joint. So here we are putting it back into the sterile container and syringe and we're going to spin it again through a centrifuge for a second spin. And once we come out, whilst that's ongoing, what we also do is we add in the PRP, as I indicated mentioned earlier. The PRP is taken from the blood. This is again spun in the centrifuge, so we have about 15ml of blood, which will give us a yield of about five to seven ml of PRP. And we have about three to four ml of your fat cellular concentrate that's coming out now. So, we inject both the fat cellular concentrate with the PRP back into the knee joint. And that concludes your regenerative therapy. So here we're just trying to isolate the exact cellular content that we need from the syringes. That's all the fat that we're getting rid off. So, you see there's not much yield here, from the amount of fat we've taken we get about three to four ml of good high concentrated cells. And these are then injected into the knee under a sterile technique and following the injection of the cellular content, we also inject the PRP. So, what the PRP does is it increases the healing factors and the environment in which the cells will work. So, at the moment most of the practices are involving including both of these with the fat cell and also the PRP at the same setting. Now we already said this is a day case procedure, that normally takes about 45 minutes to an hour to do, it's done under sedation so you do not need a general anaesthetic for it. Once it's done within an hour or so the patient is up and about, once he's out of the effects of the sedation, he can start fully weight bearing and walking and he's discharged the same day. We'd normally say it takes two to three days to take it easy, don't do too much on the knee, rest it out and then slowly he can get back to his usual level of activities and back to the sport in about six weeks.

Steven Bruce

I was going to ask about that, because that's a remarkably rapid turnaround time for these new cells to improve what's going on in the knee. I was expecting you to say there would be six months of allowing the need to regenerate before you actually started doing anything weight bearing or load bearing on it.

Fahad Attar

No, absolutely not. Because it's actually doing activity and weight bearing has a mechanical stimulus as well to actually help regenerate the cartilage. So, we're relying a little bit on that, as well as the cellular healing that's going on in the knee. So, all we do is we avoid impact activities, such as running, using gym leg weights, so deep squats and things like that. But otherwise, routine non-impact activity, cycling, swimming, cross trainer, getting back to your walking, hiking, all that is absolutely essential.

Steven Bruce

So, for your football player or your rugby player or your long-distance runner, how long before they get back to their normal activities?

Fahad Attar

We normally say three to four months and we say in three to four months, you slowly start back in a controlled environment and slowly build up what you do. So, don't do too much too soon. And then within sort of six to eight months, they should be pretty much back to doing high impact activities and back to their competitive sport. We do have a lot of sports people come in to have these as well.

Steven Bruce

Shital's asked a question, which I imagine is on everybody's mind, how much does it cost?

Fahad Attar

Sure. So, the cost is variable and it depends on the PRP and the fat cell injection. So, for the PRP, the cost at the moment is about 1500 to 2000 depending on which system you use. And that's an all-inclusive cost. And for the fat cell injection is about 5000.

Steven Bruce

Why is it variable? You said because of those injections, is it just variable depending on where you go or on the type of your body makeup?

Fahad Attar

I think it depends on your condition, what you're treating it for. So, for tendinitis and tendinopathies, PRP is sufficient because that gives us good results. And we've got enough data that's been published to say that, but if you've got early osteoarthritis, I think what the general sort of people are trying to assess now is the cellular content is better than just the PRP, because we're actually giving the cellular structure as well. So, at the moment, there's a big trend towards using more cellular with PRP rather than just PRP by itself. And hence, I think if the patients are suitable for one or the other, they need obviously to be assessed properly, they need their full set of x-rays, they need an MRI scan, where we can assess the cartilage damage to see if it's localised, what grade of injury it is. And then we almost tailor-make a plan for them that is going to be the most effective, if you like, in regenerating and giving them pain relief and improved function.

Steven Bruce

I guess another important question is how widely available is the treatment?

Fahad Attar

So, there's not that many clinics at the moment around the UK who are doing it, who are geared and set up for high volume. So, we've got a couple of clinics down south in London, we've got our clinic up in Manchester and we've got one of our franchises in the Midlands and London as well. So, at the moment, although PRP is widely available, a lot of people are doing it, the fat cell injection therapy still is not. And I think the more people start using it, the more results start coming out and more data we start seeing, I think it'll be starting to get more and more incorporated in daily routine practices.

Steven Bruce

And dare I ask how long before it becomes mainstream NHS therapy?

Fahad Attar

I mean, if I was to predict, I'd probably say two to three years. PRP there was a lot of struggle over the last few years. But now a lot of NHS trusts are seeing the benefit of it and they see the benefit of it compared to the usual cortisone injection they used to be giving. So, a lot more trusts are starting to incorporate PRP in their treatment protocols. But I think what the fat cell therapy again, I think we're at least two or three years away before we start using it more routinely.

Steven Bruce

What do we need to know to be able to advise our patients appropriately? Obviously, we're talking about osteopaths, chiropractors, physiotherapists here. I am, even though I treat very rarely now in clinic, even so I see patients who come in and say I've just read this in the newspaper and I want this new therapy. Are we in a position to be able to do a bit of preliminary screening or should we just say you've got osteoarthritis make an appointment?

Fahad Attar

I think you can, I think it depends really on the stage of osteoarthritis. If you feel that you've been seeing someone for long enough and you've tried all the treatment modalities that's available to you and they're not really progressing but the recent scans or investigations they've had do not show that they've got severe osteoarthritis. Now those are really the right candidates. Because there is some problem in the joint which is causing recurrent inflammation, they've got some cartilage loss, they're having some stiffness and they're symptomatically struggling. Those are the patients we're really after because a lot of people with mild osteoarthritis, who are not symptomatic, get on with it and we don't need to do anything but the small percentage of people who are, those are the right candidates. So, for them, rather than say, well, we've tried everything, we cannot help you now, sorry, off you go till the arthritis gets worse on an MRI or X ray, is probably not doing the right thing for the patient. So those are the kind of candidates to say, right, there are a few options available, you could look into it, because you may be suitable for regenerative therapy. If you then want to contact a specialist clinic, who will then take you through the procedure and give you some advice and guidance. And you could take it from there.

Steven Bruce

Ron has said, if this avoids joint replacement, why is it not available on the NHS? Is it just because the NHS takes a while to catch up on the research and the evidence?

Fahad Attar

Absolutely, I think there are two elements to that really. One is obviously we rely quite a lot on NICE, rightly so. NICE uses both the cost effectiveness versus and outcome analysis. So, at the moment the cost is still quite expensive, with regards to the overall gauge and advantage for long term benefit. So, the moment we haven't gotten the data up to about 12 years, 15 years, 20 years that we have with joint replacement. So hence, I think it'll take a little while to sort of change that mindset for people to say that we aren't really measuring like for like, and at the moment, we're trying to delay or even avoid joint replacement surgery. So, I think that concept will come slowly. But I think the more data that gets published to say that people with similar sort of osteoarthritis have had five years, six years, seven years' worth of good results, improved function and we've managed to stall the progression of the arthritis. And that's the sort of data that we're really after, and I think we're still about two, three years away from that. And once that starts coming into the mainstream, I think you'll get people, in the NHS and in the private sector, getting a little bit more interested and starting to take it more seriously.

Steven Bruce

Well, I know you say you're a bit of a way away from that and of course, this will presumably depend on the age and severity of the candidate, but Melanie's asked how long are you likely to defer joint replacement for?

Fahad Attar

Again, it's difficult to say because your starting point is important. So, if you have someone who we can catch early, in grade one, grade two, and treat them, then the hope is that we may not need to not proceed with anything further. Worst case scenario is we've had a few patients who've had it done five, six years earlier, who had some good results

have come back for a repeat. And when we've checked or investigated them again, they've not deteriorated much more than what we would normally have expected otherwise. So again, they're suitable candidates to have another injection in five, six years' time, if need be. So, it's difficult to predict, really, because we haven't got that sort of long-term cohort data to say at this stage when we intervene, and we gave them regenerative therapy, we're looking at cross matched aged and disease process comparable indicators, if the other group went on to develop more osteoarthritis or needed a joint replacement. So, at the moment, what we can confidently say is for early osteoarthritis, it helps with improvement in pain, in function, in movement and gets them back to their activity levels. Which normally a joint replacement, would not be able to do predictably

Steven Bruce

Jess has asked about the research for this therapy on small joints, toes, fingers, and so on?

Fahad Attar

I think they've done it in small joints, especially for hallux rigidus in the feet. And again, they've had some early good results and data from that. Wrist joints and elbow joints have had quite a lot of studies going through as well. So, at the moment, most usage has been in larger weight bearing joints, such as knees, hips and shoulders, knees being the most predominant and most trials and published data, but I think lots of other data from smaller joints is coming through.

Steven Bruce

Do knees get so much attention simply because more people are attending for knee problems or is there some other reason?

Fahad Attar

I think knee osteoarthritis is on the rise. And it's on the rise for two reasons really. One is because people are injuring their knees a lot more, they're more active, they're doing a lot more. And secondly, the knee is a very complex joint. So, if they've had meniscal tears, for example, and have had a partial meniscectomy earlier on in life, that speeds up the process of osteoarthritis. If they've had ligament injuries that have not been addressed and dealt with, it increases the progress of osteoarthritis. So, it's quite a complex joint and we always see now in literature is that previous injuries, previous knee problems and people who are slightly overweight, putting a lot of brunt and weight on to the knees, all have a predisposition for them to develop osteoarthritis. And because the osteoarthritis in the knees is on the rise, we are routinely seeing a lot more patients with the osteoarthritis in clinics, and hence, I think a lot more data is coming out from the knees.

Steven Bruce

Nick has asked whether you think there's a use for this in spinal OA?

Fahad Attar

I think there is, especially for facet joint osteoarthritis. There are a few colleagues and friends of mine who are doing it and again with some good results. Again, it depends on the disease and process and stage of the disease. But I think again, spine is another area which is still upcoming.

Steven Bruce

It all sounds very positive. Amy's asked whether there are any adverse side effects from this, so other complications that people need to be aware of?

Fahad Attar

So, the side effects and complications are minimal for the main reason really being we're taking your own cells from your own body and reinjecting them back in. So, the side effects of having reactions or not agreeing with you or causing a lot of inflammation, swelling is all nullified. So, the procedure is almost an outpatient procedure. So, it's minimal small incisions for the fat harvesting, it's minimal small puncture wounds for the injections. So, the risks are minimal. The only ones that patients need to be aware of it's a very small risk of infection, a little bit of bruising around the fat harvest sites, which is reasonably common, but takes one or two weeks before it settles down, they can get a little bit of swelling or seromas around the area of the harvest, which is rare, but again, they need to be aware of that. And sometimes injection in the joint itself, because we injecting about 10 to 12 ml of fluid in, they can have a little bit of an inflammation in the knee, it can swell up a little bit. Takes a few days for it to settle down, so they need to put some ice on it and obviously avoid any activities or sports for the first few days. But apart from that, it's a very safe procedure, which is done under very good controlled environments. And it's done under sedation so you don't even need any general anaesthetic for it.

Steven Bruce

Somebody called JH has asked about a two-year-old meniscectomy with 70% loss of the medial meniscus but minimal osteoarthritis, is that too much cartilage loss for this to be a relevant therapy?

Fahad Attar

It is not too much cartilage loss. But it depends again on the activity levels of the patient. And it depends on how much symptoms they have. Because if they've lost 70% of their cartilage, they may be more suitable for having a cartilage replacement or meniscal replacement surgery to give them much more longer-term benefit. And with that, if they have some degeneration and deterioration in the cartilage, we can back that up with the fat cell injection as well at the same time. So that'll be an ideal candidate to have the best of both worlds really, to try and get the best outcome in the future.

Steven Bruce

Lorraine has asked, and it's kind of related to that, whether this treatment will also works with surgical implants? I don't have any more specific details on what she's asking there.

Fahad Attar

Absolutely, I think I know what she's asking. And now I do quite a lot of cartilage reconstruction procedures, which are isolated cartilage defects. Now we use biosynthetic scaffolds to regenerate the cartilage. And with those, I actually do use the fat cell concentrate or sometimes the bone marrow concentrate to load up the cartilage graft before we implant it in the knee. So, we do use it with a lot of biosynthetic knee regeneration techniques for cartilage regenerative procedures and they work again very well with that.

Steven Bruce

Louise asked if you have figures for the success rates of this therapy?

Fahad Attar

Yes, for three to four years, I think the most recent published data says 80% improvement in pain, function, on the modality scoring that they did it. But at the moment, there's quite a few trials and studies ongoing to try and see results up to about six to seven years. And these are just with one off fat cell injection for early osteoarthritis.

Steven Bruce

And presumably that compares very favourably with the alternatives that people might opt for?

Fahad Attar

Yeah, absolutely. Because see the competitive pain scores for people who have not had anything done, which obviously means that they've dropped off their activity levels and are still struggling with some joint pain and stiffness, and also with any surgical intervention or surgical procedures. So, the moment we don't have a like to like comparison, for example, the state of arthritis and invasive surgery versus the fat cell, I don't think that will ever be possible because they're slightly too different grades of diseases we're treating. But I think with regards to just having a follow of cohort going more, from a starting position with early osteoarthritis going down to five years, six years, seven years with regards to follow up data, I think we've got good evidence to say that it does well from a pain perspective, and also from a perspective of improving the function. Now one other interesting element, what they're looking at the moment, is repeating MRI scans at that stage to try and assess cartilage loss, to see if it actually has a true regenerative potential and trying to regenerate the cartilage. And again, at the moment, we don't have enough quantifiable data to compare that with the initial scans they had. But again, that's work which is ongoing.

Steven Bruce

Any idea when we might see some results from that?

Fahad Attar

I think in the next year or two, I think there's a lot of studies that will be publishing most of the results in the next year or two. So, I think this is an exciting sort of field and opportunity at the moment. A lot of people are keeping their eyes open, because it's a very good modality for the right indication in that cohort of patients that I mentioned earlier on, which is sometimes just lost really.

Steven Bruce

You've answered this question, I think, Victoria has asked whether this treatment is useful for patients with a partial meniscectomy? Maybe it's worth saying, well, just how partial would be appropriate?

Fahad Attar

Yeah, I think it depends on how much meniscus they've lost. And if they've lost a lot of meniscus and they're quite young and active, then I will say that they do need a meniscal replacement, which will be the best option. And then if they do have some degeneration of the cartilage, we obviously back it up with a fat cell injection, which will be very helpful. But if they've only had minor meniscus taken away, let's say 10-15%, and they're starting to regenerate the cartilage, then yes, then they would be suitable for fat cell injection.

Fahad Attar

What about a high-grade tibial plateau fracture? Sue's interested in whether you could use this to help there.

Fahad Attar

For the healing of the fracture itself?

Steven Bruce

She says it's an old fracture. So, I'm guessing she's talking about-

Fahad Attar

Degenerative changes, secondary to the old fracture. Yes, again, it depends on how quantifiable the arthritis and the degenerative changes are. Sometimes when you've had previous fractures, which are intra-articular, you do tend to lose quite a lot of cartilage and you lose it quite quickly. So, if it's still in its early stages, and if it's not yet gone down to grade three, grade four, then yes, they would be a suitable candidate to have it done. But obviously, we've got to assess in these kinds of situations, the overall alignment of the patient, because sometimes they've had a fracture and they've fallen into either varus or valgus alignment, that may need correcting as well. So, these are slightly more complex patients that we need to look at, step back and have more of a holistic approach. Even though the stem cells will work for that indication, if they've got other problems, such as ligament problems or alignment problems, all of those need addressing at the same time.

Steven Bruce

Jess says, has it been used with Cartiva implants? Which I'm not sure I'm familiar with. Often those implants have a limited lifespan so could this be an option instead of fusion down the line?

Fahad Attar

No, not to my knowledge. I don't know of any cases or any studies alongside that. Joint fusion is a slightly different indication, it depends on what joint she's talking about specifically, but it's a slightly different indication. And that's, again, mainly for arthritis that's quite severe and in younger patients. So, you know, rather than doing any joint replacement procedure, for gaining more function in a younger patient, you'd normally do a fusion. And again, more common in smaller joints in the hand or something like that. So, I need a bit more specifics on that. But as far as I know, it's not really used in conjunction with that.

Steven Bruce

Yeah, I was surprised, we had Professor Bill Ribbons on the show some time ago, I was surprised to hear that fusion of the hallux doesn't actually completely ruin people's gaits. Perhaps Sue's actually thinking about that. Or Jess, sorry. Nick's asked a question about the serious weekend warrior and whether you would advise the trainer for the rehab process for someone like that? Now, again, that's quite an open-ended question.

Fahad Attar

Yes, I think I would actually, because I think we've been seeing a lot of people who do lot of active sports over the weekend, and most of our patient cohort, include those patients, we actually see very few more competitive patients now, we're seeing a lot more weekend warrior type of patient. And I think they are the right patients really, who are still reasonably young, physiologically, not really from a chronological perspective but physiologically, because they still like to be active, they want to get on and do sports, they've got a family, they want to go and play with their kids. And I think if they've got problems with early to moderate osteoarthritis, I think they're suitable candidates. But again, if you're going to include physical therapy programme, with their treatment option, I think it needs to be more directed and it needs to be more professional rather than just telling them go to the gym and get on with it, because I think they need a little bit more direction for that. I think they do need a good specialist input, because they will really benefit from a good combination approach of regenerative therapy alongside a good physical therapy regime or programme.

Steven Bruce

So given that that's the case, how much extra training do we physical therapists need to make sure that the rehab we suggest to people is appropriate?

Fahad Attar

You mean sessions wise or time wise?

Steven Bruce

No, in terms of understanding what it is we're trying to achieve and how rapidly we should be trying to get our patients through their rehab.

Fahad Attar

Okay, so what I normally say is they need at least two to three months of good well directed programme. Now once they come in for any treatment, they lose a lot of muscle bulk straightaway, because they're inactive slightly before because of their pain and problems and they're slightly inactive afterwards because of the treatment options they've had. So, I think within sort of four to six weeks, as you will be aware, they lose a lot of muscle bulk very quickly. So, they need a good structured programme, which should be at least two to three months to try and get them back to where they should be. And then a well-directed advice programme with regards to what they should be doing, they shouldn't be doing and that tailored in conjunction with what they've had done and the problem they've got is ideal.

Steven Bruce

Poppy's asked an interesting question. She's asked whether this is appropriate in patients with an autoimmune condition?

Fahad Attar

I would say no. And the short answer to that because at the moment, we don't have any trials or any results or data from that, I would also sort of include rheumatological patients as well, because we've had a lot of queries and questions from rheumatoid arthritis. Now their disease process is completely different and we cannot really justify or have enough data to say that using the fat cell approach will help it because it's more of an autoimmune problem, they have a more destructive process, that joints deteriorate quite rapidly and quite fast. So, at the moment I would say no, but again, there may be some trials upcoming regarding that to see, if you catch them early, can you protect the joints, but at the moment, we don't have enough data to go down that route.

Steven Bruce

I suppose it's also interesting to talk about where this might also be appropriate. And Jane has asked whether it could be used for an undisplaced libram. Are there other areas where you see being used in the future?

Fahad Attar

It can be, yeah, I think, we use them for rotator cuff in the shoulders quite routinely, labral tears in the hip, again quite routinely. So, it can be used. And it's got a wide variety of indications. So, like I said, it's one of those things, which is upcoming. And the more indications and the more patients we have with different pathologies we're trying to treat, we're trying to increase the success rate, trying to monitor their outcomes. I think that'll increase the indications we use them for, and again, it'll negate the need for surgery for arthroscopic hip surgery for labra tears, for example, arthroscopic shoulder surgery for partial rotator cuff tears, for example, all those could be negated, when we have enough data coming through that shows that the regenerative therapies work.

Steven Bruce

Nicola's asked whether this is a once only treatment?

Fahad Attar

It is. As for now, with regards to the fat cell injection therapy, it's just a once only treatment. Very rarely, you need to top it up, especially they've done well and they have had it five or six years earlier. But most patients we're doing it for, it's just a one-off treatment. With the PRP is slightly different, with the PRP most published data and most of my personal data show that it will give you some benefit for about 18 months or so then people start developing the symptoms again, and they may need a repeat injection at that stage. So, for the PRP group of patients, we've had patients who've had two or three injections over the last four to five years, as top ups after 18 months or so. But for the fat cell it's just a one-off injection.

Steven Bruce

And Joseph whether there might have been a role for this in ankylosing spondylitis?

Fahad Attar

Again, I personally have not come across any data where they use it for ankylosing spondylitis. So I'm not really aware of that.

Steven Bruce

The costs that you mentioned earlier on seem reasonable compared to say joint replacements. But Amy's actually asked whether the private health insurers are covering this sort of therapy at the moment?

Fahad Attar

That's a very good question. Now, private health insurers, since I've been sort of really pushing the regenerative therapy treatment modalities across, we've been speaking and having meetings with a lot of private insurers and PRP seems to be something they've taken on board over the last year to two years, because that they weren't covering before. So, I think it's just a matter of time before the fat cell and the bone marrow aspirate cell therapy starts coming into play and them starting to accept it. We've had a few cases where we've pushed through with some clinical guidance and evidence and a lot of discussions and toing and froing from the insurers that they've accepted it. But again, it's not common, but we're trying our best to try and increase that and to change their mindset.

Steven Bruce

Geraldine's asked about elbow OA, can we see it being used there? I think you mentioned it briefly earlier on.

Fahad Attar

Yeah, elbow osteoarthritis, as long as it's sort of early to moderate osteoarthritis, is a suitable indication.

Steven Bruce

And Nick says, would you work yourself directly with specialised therapists who are dealing with rehab?

Fahad Attar

Absolutely, I think that's very important because I think the relationship between the surgeon and the therapist is vitally important, because we all need to be on the same page, including the patient, I think that's when you get the best results. So, I think most of the therapy is obviously well directed. So we get a lot of patients coming from far and

wide, who their therapists refer across to us. But once we get that, we actually have a meeting with the therapist themselves to try and find out what they've used and what they've done, to get a little bit of a programme detail. And then once they've had the treatment and they go back, we liaise quite closely with them for progress reports, outcomes and if they're struggling, it's always a two-way relationship because I think that's the best way really to get the most out and benefit for the patient. So, we work very closely with all our therapists.

Steven Bruce

That's interesting. I'm thinking back a very long time, when I had the first surgery on my knee, I remember that the consultant then would tell the physio exactly what he wanted done on the knee. I'm not entirely sure that physios even then listened, they still did the therapy as they thought was appropriate. But it sounds like a much more collaborative, or it is a much more collaborative approach these days to that sort of thing. Jackie says would someone that's had a number of cortisone injections into joints or other significant steroid use over time, prednisolone for example, for lung conditions, would they be suitable?

Fahad Attar

I think they would. Again, it depends on what we're giving the injection for, and what the state of the joint is when we assess and give the injections for. Now I'm not a big fan of cortisone steroid injection into joints, for the simple reason that it actually has more of a detrimental effect on the cartilage in the long run. And obviously, it has effects that we know about, tendon ruptures and things like that when you give multiple injections. So, I'm not really a big fan of them. But we do see a lot of people who have had one or two previous steroid injections who come back to see us and if the joint condition is suitable for the regenerative therapy, we tell them, it's better to progress to regenerative therapy than having a further cortisone injection,

Steven Bruce

Sue has actually asked for the name of your Manchester clinic, but I was going to go further than that and say, well, assuming that we've got patients who we think are suitable, how do we get the details of the clinics where this is offered?

Fahad Attar

So, the clinic we run at the moment is run in the northwest, in Manchester. And we've got three different clinic setups there. And we've also got a franchise, as I said earlier, in the Midlands and in London, so it's the Regenesiss Clinic, is the name of our clinic. And we've got a website and we've got a contact number with the secretary details on there. And we've got a form as well, that'll come directly through to query to one of the consultants, we work as part of a close-knit group with three to four orthopaedic consultants, with a professor radiologist with us, who's a specialist in musculoskeletal care. And obviously, a few therapists and anaesthetist as well. So any query that comes through is contacted through our clinic, and then the secretary picks it up, she flags it up to one of us and then we arrange, at the moment with the current COVID situation, we're doing quite a lot of E-consultations, which have been very helpful and easy, and it minimises any exposure, any travel for the patients, and it helps also patients who are coming from far and wide, because they only need to come in for that one off treatment option once everything else is done through the consultations.

Steven Bruce

And I'm presuming that the referral process is straightforward. You don't need to go through your GP, we could refer people straight to your website and they can make their own appointment?

Fahad Attar

Absolutely. We don't need any GP details, because we know that's a big hurdle for a lot of patients, trying to get GP appointments, trying to get that referral letter come through and they tend to wait a long time for that. So, at the moment, I'm quite happy we get contacted directly from the therapist, we get contacted directly from the patients. So, all those channels are open.

Steven Bruce

Would you expect them to have already had MRIs, X-rays of the joints concerned or would you arrange that anyway when they come to you?

Fahad Attar

Not necessarily, we arrange them ourselves. And we get, again, a wide cohort of patients who've had various different stages of investigations done. Sometimes they come in very early, sometimes they come in after everything is done. And my secretary is very good, she chases up all the results, brings them onto our system within a few days. So, once we've had a look at them, we've had an E-consultation, we have a clear idea and indication of what the suitable candidates are, what the best tailor-made plan for them is, and then we contact them and we take it from there.

Steven Bruce

Nick's asked where you take bone marrow from? I don't recall you actually saying that you do take bone marrow.

Fahad Attar

We used to take bone marrow. That's a good question, actually. Because when I initially started off into my regenerative therapy approach, we started off taking bone marrow because being an orthopaedic surgeon, getting into bones is easier than getting into fat. So, when we go into bones, we normally go in the pelvic and the iliac crest and most of our bone marrow comes out of that. But more recently in the forums I've been in, discussing with more specialists in the regenerative sector, we found that the cellular content, the differentiation cells is a lot higher in fat compared to bone marrow, and it's not age dependent. And hence over the last few years, my practice has tended to move towards the fat aspiration rather than bone marrow. But there's still few cases we see at the moment where I do cartilage reconstruction, regeneration with bone marrow is a little bit more appropriate. So, we still take some bone marrow for those cases, but majority now are from a fat cell harvest.

Steven Bruce

When you showed the video earlier on, it seems that a fair old quantity of fat was being drawn out, are there patients where you would struggle to get sufficient fat or is there always enough?

Fahad Attar

No there's always enough, we do get caught a lot of lean sportsmen who come in, who when the plastic surgeon sees them, their jaw drops and they go, oh my god, where am I gonna get fat from, but they always tend to get some from inner aspects of the thighs, outer aspects of the thighs and a little bit from the side of the abdomen. So, we've never reached a situation where we feel we've not managed to get fat. So, there's always there's always a place despite you know how thin and how fit people are.

Steven Bruce

Yeah, for people like me, we could kill two birds with one stone, perhaps.

Fahad Attar

A lot of people say that.

Steven Bruce

Take a bit more fat. There's one more question, if I've got enough time. Poppy's asked, how about patients with osteoarthritis and an existing non MSK autoimmune condition? Would immune suppression medication needed to be paused to get the full benefit of induced inflammation of the treatment?

Fahad Attar

I think it would be, if you're treating degenerative osteoarthritic conditions in a pre-existing inflammatory autoimmune condition, then yes, it depends on what therapy you're on, how long the therapy has been going on for, and we need to closely discuss and speak to the rheumatologist or which other specialists they're under, because it's a slightly more tricky situation. But sometimes when we speak to the rheumatologist and they say, well, they're more in sort of remission, we're not really actively treating it. We're happy to stop the medications for a while to see how things go. Those are the kind of patients where, yes, you can you can try for.

Steven Bruce

Fahad, thank you so much for giving up your time. What we will do obviously, we will publicise the contact details for Regenesiss Clinic so that people who need to refer people on they've got easy access for that. But of course, they can go straight to your website. I really look forward to hearing more of the results as they come in on where this might lead us. And perhaps one day, you might want to take out your crystal ball and come back and say where you think orthopaedic surgery is going over the next few years because there have got to be other things in the pipeline, which might help us all.

Fahad Attar

Absolutely. It's been a pleasure coming on your programme.

Steven Bruce

Entirely our pleasure. Thank you.