

# The Older Shoulder - Ref

## 57RD

with Rupen Dattani

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### TRANSCRIPT

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**Steven Bruce:**

We're talking shoulders today and I'm joined again by Mr. Rupen Dattani. Rupen is a consultant trauma and orthopedic surgeon in London. He has a special interest in the shoulder and the elbow, and he's also a surgical tutor for the Royal College of Surgeons. So, he's pretty knowledgeable when it comes to shoulders. Rupen, thank you so much for coming back again.

**Rupen Dattani:**

Thanks for having me.

**Steven Bruce:**

I got a question for you before we even start, which is purely to do with COVID and protective equipment. And I've been asked that since we osteopaths, chiropractors, physios are now having to wear facemasks and so on, we're actually finding it really, really unpleasant and difficult. And somebody asked me, how do you guys, who spend all day in one of these facemasks, cope with the claustrophobia, the heat, the feeling of oxygen starvation and the pain in the ears?

**Rupen Dattani:**

No, it's a great question and it's difficult, especially when performing surgical procedures. So I'm finding any procedure that's longer than two hours, it's becoming really difficult because you've got the mask on, you've got the protective goggles on and sometimes even a shield. What we'll be tending to do now is most patients are screened so they've been tested for COVID prior to the surgery and then asked to self-isolate for 14 days. And as a result, I have now stopped wearing the shield. I'm still wearing the FFP3 mask and the goggles, which has made it slightly easier. Well, I totally agree. It's a new way of working and there's no easy way around it. It's quite difficult.

**Steven Bruce:**

You've always had to work in simple surgical facemasks, haven't you? Is that not in itself, quite a hindrance?

**Rupen Dattani:**

I think the surgical mask itself, it's a lot more easier to wear and you just become used to having that around. And I've always wore a visor. I think what I've found with the FFP3 is they're so tight fitting, so they can make you sort of claustrophobic and you just have to learn how to breathe within that. So, the first few times you wear that it's quite difficult, we were only doing trauma cases at that stage and shorter cases. So, it was a bit easier and once you become sort of used to it, but I still haven't done some really long cases with that.

**Steven Bruce:**

Yeah. Okay. Well, we're going to be talking about the older shoulder today. So, I guess there's two questions, one has been sent in apparently by a number of viewers saying, is this presentation designed to help us help our patients, or is it just for us after we reach our middle age and have treated so many patients ourselves? But more realistically, I guess, one of the questions, is it all about frozen shoulder and the elderly?

**Rupen Dattani:**

No. I mean, obviously frozen shoulder is a common condition as we sort of age and you find it in anyone over the age of 50, frozen shoulder is a diagnosis that we see quite often. But the other things are things like rotator cuff related problems. So, it's either things like impingement, ACJ problems or a rotator cuff tear. And then the other, we tend to see in the slightly even older age group, so over 60, 65, 70-year-olds is arthritis in the shoulder. And then we've got a sort of a condition whereby there's a tear in the tendon and there's arthritis, something called rotator cuff tear arthropathy, which is a slightly more challenging sort of diagnosis to treat, rather than just arthritis itself.

**Steven Bruce:**

Is that a diagnosis that you would only reach through imaging or can you be fairly confident through clinical examination?

**Rupen Dattani:**

It's a combination of both. So, it presents in a very similar manner in terms of rotator cuff arthropathy, it's basically a very stiff shoulder. And quite often people will have had a gradual deterioration in the shoulder pain and range of motion. And quite often you can sort of feel crepitus in terms of range of motion. And then just a simple x-ray, will tell you whether there's arthritis or not. What you don't always know is whether the rotator cuff tendons are intact. Sometimes on an x-ray it's absolutely obvious because the humeral head is no longer sitting in the center of the socket and it's sort of migrated upwards and it's articulated with the acromion. So that's quite a straightforward diagnosis, but then there's a group of patients whereby the humeral head is centered. So, it's actually centred over the glenoid, but further imaging such as an ultrasound or MRI will tell you whether the rotator cuff is intact or not. And this has implications in terms of treatment options, so although everyone is treated in a conservative measure using activity modification, analgesia, injection therapy, physical therapy, osteopathy some of them may require surgery and the conventional shoulder replacement is not the right option for that particular pathology. And they have to have something called a reverse shoulder replacement in order to activate the deltoid to move the shoulder.

**Steven Bruce:**

A reverse shoulder replacement? What does that consist of?

**Rupen Dattani:**

So, in an anatomical shoulder replacement we are literally replacing the ball with the ball and socket or the socket a bit like having a hip replacement or knee replacement, but in order for that shoulder replacement to work the rotator cuff tendons have to be intact to be able to move the joint. But if we reach a situation whereby the rotator cuff is not intact and there is arthritis then the anatomical shoulder replacement won't work. So, what we tend to do is something called a reverse replacement, whereby essentially, we're turning the socket part of the glenoid into the ball, the humeral head, and the humeral shaft has then got an attachment, which looks like a socket. So literally we reversed the biomechanics of the shoulder. And the reason that works is you increase the lever arm of the shoulder and the lever arm of the deltoid, which then helps to elevate the shoulder. So, you have to retrain the anterior part of the deltoid to try and elevate the shoulder and it tends to work pretty well. In fact, there are more reverse shoulder replacements being done in the UK and USA than the

conventional type of replacement. And that's purely because of the aging population who are going to have both arthritis and a rotator cuff tear.

**Steven Bruce:**

Is that a more difficult procedure to carry out?

**Rupen Dattani:**

I don't think it is, no. In some ways it's a slightly easier operation to carry out than a conventional shoulder replacement because in a conventional shoulder replacement, the problem is getting access to the glenoid. So quite often in a very arthritic shoulder, getting access to the glenoid can be quite tricky because you're only sort of having to excise about five, seven millimeters to the humeral head in order to gain access. And sometimes that can be tricky. Whereas with a reverse shoulder replacement, you can take a bit more off because you know you can build it up with some of the components. So, in some ways it's slightly easier operation. Having said that the downsides are, anecdotally, when reverse shoulder replacement initially were introduced, the complication rates were really high and people were slightly cautious about doing reverse shoulder replacements, but as sort of technology's evolved and as surgeons, we've sort of become a bit more competent at doing these complication rates have reduced dramatically.

**Steven Bruce:**

What do you want you to build the joint help with?

**Rupen Dattani:**

So, in terms of the humeral side, so you've got to stem and the stem has got a tray and on top of the tray you've got a little polyethylene insert. And on the socket, you've got a little plate, base plate, which is metallic and attached to the base plate is another sort of metallic component, which almost looks like a hemisphere. And then, so that then acts like the ball component. So, you've now turned the socket into the ball and the ball part, which is the humeral head will then have a little tray, which acts like a socket. So, it's a combination of metal then polyethylene.

**Steven Bruce:**

And how much is the range of motion compromised if at all, as a result? Obviously if they're arthritic it's probably improved in terms of, in comparison with the full range of motion.

**Rupen Dattani:**

So, it can be variable. We've had patients with absolutely amazing results, you could not tell that they've had a replacement done, so it can be variable. What we tend to say to patients is that we're trying to give them a functional shoulder rather than a normal shoulder, and by functional shoulder, can they get their hands to the back of their head, to their back and just do activities of daily living, but I've had patients who've despite advice gone back to playing golf and swimming and that's not common and we actually advise patients not to do that, but we have had some patients who've gone back to sort of normal standard of living. But the aim is to try and get them a pain free shoulder, which can function for activities of daily living.

**Steven Bruce:**

Right. Okay. Is there an upper age limit on the patient that you would normally consider that procedure for?

**Rupen Dattani:**

So upper age limit, I would say, no, obviously they've got to be medically well in order to undergo an operation, which is, I would say, a moderate sized operation, but there's no upper age limit. I think that the question arises what's the lower age limit to perform that operation. So sometimes we do have patients such as people with rheumatoid arthritis who are in their fifties, who've got this condition where they've got a torn rotator cuff as well as arthritis. And it's that sort of the dilemma as to whether it, should you be performing an operation that will give them good function, but knowing that they're more likely to wear out the shoulder and going forward, they're going to have to have it revised. And that's when it becomes very tricky because then you're running out of options as to how to revise these. So, it's more of a question of the lower age limit rather than the upper age limit.

**Steven Bruce:**

I've got a number of elderly patients who are in that position you described, they can't reach the back of their head, difficulty reaching their face to wash or shave, things like that. But actually, the problem isn't entirely in the shoulder, of course, it's quite often arthritic elbows as well. Would you treat the two together?

**Rupen Dattani:**

Well, that's a really great question. So, we would treat them separately as in, obviously we have to treat the patient as a whole, but in terms of having the surgery together, I think that's a really massive undertaking. So, we would try and assess where most of the functional limitations are coming from. And then based on that, make a decision plan as to whether it's the elbow that needs to be addressed or the shoulder. It's quite rare to require an elbow replacement, quite often even arthritic elbows can be treated fairly well with conservative measures and sometimes with debridement. And they tend to do quite well.

**Steven Bruce:**

Right. Just out of curiosity, the reality of life at the moment, as we learned from your colleague Ian McDermott the other day, is that there's a huge backlog of operations as a result of the COVID-19 problem and it's unlikely that you orthopaedic specialists are going to be able to make much of a dent in that over the next few years, given that the waiting list was always already quite long. How is the NHS going to approach what you might call, just lifestyle surgeries, such as that? Where it's not life threatening, if you can't bend your elbow, but are these patients going to be seen from now on or will they just be shelved?

**Rupen Dattani:**

Oh, that's a great question. I think the problem is, you're absolutely right, there was a report over the weekend saying some NHS trusts are going to take two years to just clear the backlog. So, the three-month delay has caused a two-year backlog. And the other question is how do we resume elective operations given that we're not over the pandemic and there isn't an effective vaccine as yet. So, there's going to be more of a trend towards nonoperative treatment, but I would like to say, most of

us would have tried all those options before considering surgery anyway. With shoulders itself, I'd say less than 15% of my patients will eventually require surgery. So, 85% will be treated with non-operative measures.

**Rupen Dattani:**

It's only the ones who have sort of failed all the conservative measures who then go on to have surgery. But in terms of rationing health care, we may be looking at that stage whereby there's a huge backlog, will they consider certain operations. But shoulder pain can be very debilitating and that's the problem because it quite often has a huge impact on healthcare because patients have pain, they're more likely to go and visit their GP, they're more likely to use physiotherapy, osteopathy treatment, injection therapy. It affects their sleep at night, so as a result, they're less productive in their sort of everyday life. So, operations do tend to work in that sort of cohort of patients who are absolutely desperate and tried all of the other measures.

**Steven Bruce:**

Yeah. Lisa has asked about your suggestions for subacromial thickened bursa which doesn't respond to injection in women of 50 and above.

**Rupen Dattani:**

Yeah. So, this is a very sort of topical question as to subacromial decompressions, they've had very bad press, is that the right option? I think trying to assess the patients as to what's causing the subacromial impingement, is it their lifestyle, is it the way they're sat at their desk hunched forwards and that's causing an artificial reduction in the subacromial space and they would have tried the appropriate exercises, to try and strengthen the rotator cuff. Injection therapy again is only there to give them that temporary pain relief in order to rehab their shoulder, it's not there as a long-term solution. I'm sure a lot of your viewers are aware that because of the current pandemic, you can't even have a steroid injection because there's a suggestion in the scientific literature, that it may reduce immunity and increased susceptibility to a coronavirus infection. So, we have lots of patients at home who have not been able to access therapy, face-to-face therapy, or have injection therapy. So, they're slightly stuck at home in pain and we're just waiting for the guidance to change on that.

**Steven Bruce:**

Okay. Jason's curious to know how many shoulder replacements are carried out in the UK? And I guess he'd be interested to know whether they're reverse or anatomical.

**Rupen Dattani:**

So, I think looking through the national sort of joint registry base, it's about 4,000 to 5,000 a year from memory. It's not that common, it's not as common as hip or knee replacement by any stretch of the imagination, but the curve has been on the incline. So, there are more and more being done now. And this is purely because we're seeing an aging population and we've also seen innovations within shoulder replacements, which have allowed us to be a bit more confident with our results. So yeah, it is on the incline.

**Steven Bruce:**

What's the operation that keeps you busiest then in theater?

**Rupen Dattani:**

I would say the most common thing I see would be rotator cuff related pathology, although the vast majority are treated non-operatively, it's just because of the volume of patients that we see with rotator cuff related pathology, that's probably what keeps me the busiest and it will be mainly sort of rotator cuff repairs. And then some people will have some ACJ arthritis, things like subacromial decompressions, I'd probably say I'll do less than four or five a year, just as a sole operation. Although it's a really common condition it's purely because we can treat this non-operatively and you have to have the right cohort of patients. Okay. To make sure that that sort of operation is successful in them.

**Steven Bruce:**

And of those four or five a year, are they generally successful?

**Rupen Dattani:**

Yeah. I mean, I'd like to think so. Probably because we've super selected those patients because these are patients who have had very good symptoms of subacromial impingement, who have responded well to an injection. And for me if someone's responded well to an injection, that's relatively a good sign that they're likely to do well from an operation.

**Rupen Dattani:**

And then they've also would have had to have sort of fairly extensive rehab following injection. Occasionally the injections had been repeated on two occasions or sometimes three. And it's those patients who've literally reached the point where they're actually asking, is there anything more definitive? And we're quite clear about the literature on this, because there's been numerous studies to show that subacromial decompressions may not work or may not be as effective as we previously thought. And we have that sort of educated discussion with our patients saying there is an operation, which I think may work in your case, given that you've responded well to an injection and rehab.

**Steven Bruce:**

Darren's asked how long a shoulder replacement typically lasts? Presumably not weight bearing, it might be better than knees and hips.

**Rupen Dattani:**

They tend to work for at least 10 years or more. It's usually the glenoid side, the socket side that tends to loosen rather than the humeral component. The humeral component tends to last for a lot longer, but the glenoid component would say something like up to about 10 years. Again, all depends on the activity of the patient. Because the younger are when you have it done, the more active you're going to be and use it, whereas in the elderly age group, it's not that common to require a revision.

**Steven Bruce:**

What are your criteria then for a surgical approach to a rotator cuff tear?

**Rupen Dattani:**

So, with the rotator cuff what I tend to look at is if it's a young patient, by young I mean someone in their thirties, forties, fifties, who's been functioning absolutely fine, but then has had a traumatic tear. So, they've had a fall or an injury and then suddenly they've deteriorated. I think they tend to do better with operative management than non-operative management. Purely because what we know is those tendons tend to retract very quickly because the body's not had time to adapt to that tear. So those ones I'll be slightly more aggressive in terms of treating operatively. But the vast majority we see are what's called degenerative tears, which is just part of aging, that bit of tendon has not had sort of adequate blood supply to it. So, you get tendon attrition and they gradually tend to tear, but then what tends to happen is the body because it's happening over a longer period of time, the body's had time to adapt. So, the deltoid quite often will take over and the remainder of the rotator cuff will tend to take over. So those people quite often, although they have an underlying tear, they sometimes become symptomatic, not because of the tear just because the overlying bursitis they may have, or they were doing fine and they stretch for something and something created an inflammatory response and it's that that's causing the problem. So that's where we tend to sort of go with conservative measures in terms of pain relief, and occasionally with injection therapy, just to relieve the inflammation down so that they can rehab their shoulder.

**Steven Bruce:**

Christina asked a question about injection therapy and what warnings you give to patients about the damage steroids can do? You mentioned the coronavirus thing, but apart from that.

**Rupen Dattani:**

So usually injections are very, very safe. We rarely see complications related to it. In about 10% of cases, they get flare pain. So, this is really important to explain to patients that the pain gets worse for up to four to five days after the injection. So, they may be fine on the day of injection, but the next day they find they've got excruciating pain and really unable to lift the arm. And then they describe two or three days later, they started to feel a lot better afterwards. So, 10% of people will get flare pain. You can get the usual sort of complications, flushing of the skin. If it's not done correctly, you can get atrophy around the skin. If a bit of the steroid is sort of dispersed around the skin area. In women, they've got to watch their menstrual cycle. If you're doing it in younger women, they can get disturbance of their menstrual cycle, which sometimes is not explained by people doing it and we've had patients come back to us saying, this is a potential problem. And there is good scientific literature to suggest that that is a possibility. They're the main things we tend to see. Well, apart from that, they're very, very safe.

**Steven Bruce:**

I think she had in mind, longer term damage in particular cartilage destruction and other tissue damage.

**Rupen Dattani:**

So, there's very little evidence to show that steroids itself will cause long term damage. The only time it tends to do that is if we're doing repeated injections over a short period of time. So, if you're going to start injecting steroids weekly or two or three times a month, or even a bit more than that, around the shoulder or around any tendon then you get tendon attrition and eventually get tendon rupture. So, if I will recommend an injection to a patient then I quite often will say, if they need to repeat,

they don't have it repeated for another two or three months. I tend to do not more than two or three a year. Because if they're requiring more than that, then that definitely is not their long-term management. For me, an injection is purely there to provide short term pain relief so that they can rehab their shoulder. It's not there as a long-term solution to their problem.

**Steven Bruce:**

Because of the long-term damage that might occur or simply because it's just mitigating the symptoms rather than dealing with the problem itself?

**Rupen Dattani:**

Yeah. I think it's a combination of both because quite often people will get that short term pain relief, they may not rehab their shoulder and as soon as injection wears off, they're exactly back to how they were. But sometimes what happens is a patient will go for therapy, but they're struggling because of pain to progress. And hence the reason for the injection to give them that short term pain relief. Things like, if you've got an arthritic shoulder or an arthritic joint then that injection is only going to have a temporary effect because obviously, you're not getting rid of the underlying process. Arthritis itself of course is inflammation, the injection tends to help calm that down temporarily. And then as soon as that wears off, they're back to how they were, hence sort of people looking at sort of more long term means of managing that condition.

**Steven Bruce:**

Nick's asked if there've been any great advances in the prosthetic materials used for shoulder replacement. You made it sound very much like Meccano when you described it a moment ago.

**Rupen Dattani:**

Oh, there's been huge studies. So, the biomechanics and if you look at things are hip replacements which have been going on for 60 odd years, all the latest advancements, it's all about biomaterials. Because we know for example, a hip replacement will last now 20 years, sometimes 25 years and people are even looking at possibly for lifetime. And it's because of the advances in engineering and the bio materials that we're using, which are less likely to wear out and loosen. So, a similar kind of technology is not being translated towards shoulders. So there has been a huge sort of increase in things like using, so quite commonly, we used to cement the prosthesis into the humeral head but we're moving into uncemented implants. And the reason for moving towards uncemented implants is when you cement a particular implant in, you create a bond between the bone and the cement and the cement and the implant. So, at some point you will start getting cracks in those bonds. And that's when it tends to loosen. Whereas if you use an uncemented implant it's especially coated in order for bone to grow around it. So, in theory, you can then get a stronger bond, which could be there for lifetime. So, I think uncemented implants, which have been used in hips, are now becoming more common around the shoulder as well.

**Steven Bruce:**

Okay. Jason's asked about rotator cuff again, because whenever we talk about rotator cuff, we always talk about supraspinatus tears. Are the other muscles ever affected?

**Rupen Dattani:**

Yeah, absolutely. So, supraspinatus by far is the most common. And then sometimes what happens is the supraspinatus tear, because the supraspinatus and infraspinatus, although in sort of anatomy textbooks, they are two different tendons, within the shoulder when you look at it, it's just a continuation. Infraspinatus from the back then continues into the supraspinatus. So, what tends to happen is if you have a supraspinatus tear, what we do know from all scientific studies is all tears will progress if you leave them long enough. Will progress both in terms of size and retraction. So, if you get a large supraspinatus tear quite often, that will then progress into the anterior fibers of the infraspinatus, and eventually it'll affect the whole of the infraspinatus. So that's the way sort of infraspinatus tears tend to occur. It's very rare to get an isolated infraspinatus tear and I think I've only seen about three or four in my whole career. It's quite rare to just get an isolated infraspinatus tear. Subscapularis, yes, again, we tend to see that, quite often it's a combination of a massive rotator cuff tear where someone's had the supraspinatus and infraspinatus and subscapularis tear. Occasionally they do occur on their own. And teres minor almost rarely, doesn't tend to occur. We don't tend to see teres minor tears. And even if they do, we don't quite fully understand the function of teres minor and how much sort of function it provides to the shoulders. Although it's part of the rotator cuff muscles, we don't tend to really repair isolated teres minor tears.

**Steven Bruce:**

What's your key indicator clinically for working out which part of the rotator cuff is injured? Because we're all told to treat with a degree of skepticism, the specialist tests for shoulder, what do you use?

**Rupen Dattani:**

Oh, absolutely. So, if you look at all the tests, none of them have very good sensitivity and specificity. So, for me it's a combination of the history where either the patient will say, I was functioning fine and then had a fall and suddenly I can't lift my arm or I'm lifting it and I feel like I need to drop it. So, it's a combination of that or the degenerative tears where people gradually describe more weakness, especially if doing anything above head height. So, the history is crucial. Within the examination, sometimes some people will be absolutely fine and they have what's called pseudoparalysis. They just can't lift their arm up. They're just like that. But as soon as you lift it with the other arm, it tends to go up, but then it drops back. Then you know that patient's going to have a massive rotator cuff, which is going to involve at least two, if not three tendons. So that's quite crucial, but that tends to happen more after trauma, you rarely just see a patient, who was functioning fine and then all of a sudden, the next they couldn't move it, unless there's been trauma. The other one is obviously the empty can test, which is for the supraspinatus. So, with some resistance, if there is some pain or mild weakness that's a good sign for a supraspinatus tear. But that can be positive because your shoulder's painful and people just as soon as you do the rotation movement, people find that's painful. So, it could be pain inhibition. With the infraspinatus it's usually the external rotation, if that's weak then it tends to mean the posterior rotator cuff has been torn. And for the subscapularis, I just tend to do quite often just the belly press test, where I'll get them to press the arms on the belly, bring the elbows forward. And if people are struggling you know there must be a subscapularis tear, especially if passively they've got a good range of motion. So, it's a combination of sort of the clinical tests. And then obviously we'll supplement that with sort of scans, quite often with MRI or with an ultrasound.

**Steven Bruce:**

I don't know how often this occurs, but Justin has asked whether there's any risk of damage, if an injection is made into the tendon instead of the intended site.

**Rupen Dattani:**

Yeah, absolutely. So, I think as a result, we've sort of gone from landmark guided injections towards ultrasound guided injections for that reason. Injecting within the tendon can quite easily be done if you're doing landmark guided injections, which is what we tended to do routinely and it can be really painful and that I'm sure if you're injecting within a tendon, you're more likely to damage it than if you're injecting within the bursa. So absolutely. I think almost a lot of my colleagues and within sort of the shoulder and elbow world, we've moved towards ultrasound guided injections, whether we do the ultrasounds ourselves, or we ask a radiologist to do it. Just a bit more accurate.

**Steven Bruce:**

Yeah. Okay. And going back to when you make the decision to treat surgically, if you've got degenerative problems with the rotator cuff, what then is your criteria for an operation?

**Rupen Dattani:**

For me, it'd be pain, pain that's not being improved with sort of regular analgesia, activity modification, and they've tried and failed all sorts of non-operative therapy, so physical therapy, osteopathy, injection therapy, and they've reached a point where it's affecting their quality of life quite significantly enough. And although people are aging, people are also more active and people want to be able to stay active, play sports, and its quite often inability to be able to play sports or to even do routine sort of activities of daily living. So, for me it'd be that sort of group of patients, I think, who would benefit from the surgery and I will almost routinely get imaging on them, because I want to know which tendons are being involved, how bad is the tear, in terms of how far is it retracted. Is this something I'll be able to repair? And then it also will help me guide patients in terms of rehab thereafter. And I'll quite often say to patients, although quite often the people have this notion, they've had a day case operation, it's all done through tiny little incisions and they've gone home, that the rehab's going to be a breeze and the rehab is really tough, and I'll quite often say this is a 12-month process for you to rehab through. Although you will not be incapacitated for 12 months, it will take you at least 12 months to get better or get back to some kind of normality.

**Steven Bruce:**

And would that be sort of the standard rehab that I'm sure all of the viewers are familiar with, sort of passive exercises, resistance bands, fairly simple, straightforward stuff, but they've got to stick at it?

**Rupen Dattani:**

Yeah, absolutely. Again, surgeons vary in terms of how they rehab their patients, some people will have sort of this wedge that they see their patients that are walking around with for about six weeks to reduce the tension. I just tend to put them in a normal poly sling, and the poly sling's there 24 hours a day for the first two weeks, but they can begin elbow and wrist range of motion exercises. And around two weeks I'll start getting them moving with passive range of motion exercises within sort of the safe zone, which is usually about 120 degrees of elevation. So, I'm sort of aiming for my

patients between six to eight weeks to regain a good range of motion. And then they start the strengthening work thereafter.

**Steven Bruce:**

Sasha has asked a really good question here because you've talked about replacing the shoulder joint as though that's a complete breeze, but of course, if you're dealing with an osteoporotic or osteopenic patient, do you have to take special precautions then, or is it not possible at all?

**Rupen Dattani:**

So often a lot of these patients are osteoporotic purely because of their age and special precautions in terms of not the way we tend to operate or the type of implants we use, what I spoke to you about earlier, using uncemented versus cemented, if I'm slightly concerned about bone quality, I may just put cement in to try and make sure that at least you've got some incorporation between the bone and the implant. But apart from that, no special precautions in terms of the surgery itself. We've got to make sure that their neck is not arthritic in terms of positioning them on the operating table, but it's quite often these patients are osteoporotic, especially the ones we see who've got trauma. So, they've had a shoulder injury or broken their surgical neck of the humerus into at least four parts, which is not constructable. Often the reverse replacement is quite commonly done for that particular scenario now. And we're seeing more of an increase for doing reverse replacements for trauma and quite often the trauma has occurred because of osteoporosis.

**Steven Bruce:**

So, what do you do with people who have arthritic necks?

**Rupen Dattani:**

Yeah, so that's very tricky. So especially with the ones with sort of rheumatoid arthritis, what we tend to do is we'll make sure we scan them. So, I did a very similar case just before lockdown. It was actually a rotator cuff repair on a lady who had not rheumatoid, but a very severely arthritic neck where she hardly had any sort of neck movement. So that's a big concern in terms of just positioning them. So, this is where our anesthetic colleagues come in and they have to do something called inline intubation. So, we've got to make sure that their head is completely secure before they intubate and that no movement occurs there afterwards and the head is kept quite secure. And similarly, when we're extubating them, sort of take advice from spine consultants with regards to what the best options are. And quite often patients, so this particular patient needed to have an operation on her neck as well as her shoulder, but she was advised by the spinal surgeon to have the shoulder done first prior to having the neck. So yeah, this is tricky, but it's not that uncommon, but we just tend to sort of take slightly extra precautions in terms of positioning them and the way they intubated.

**Steven Bruce:**

Josephine's asked about your view on true frozen shoulder and hydrodilatation. She understands that the NHS are leaving those now as the two-year outcome is the same with or without intervention.

**Rupen Dattani:**

Yeah. That's a great question. So frozen shoulder, it's a very debilitating condition. Despite what textbooks say that this is a self-limiting condition. Yes, it might be a self-limiting condition, but when we talk about self-limiting, it can take two to three years for symptoms to improve and you could be in any one of those freezing, frozen, thawing stages for up to a year. So, the whole thing could take up to three years. In terms of hydrodilatation, anecdotally I've found it's a great procedure in terms of improving pain. So, people tend to find they have the hydrodilatation, their range of motion may not be back to normal, but the pain is under control and that's quite often because the steroid's gone into the right place. And quite often people are, there's a group of patients who are happy with that because the pains under control and then they're happy to then just give it more time for it to just thaw naturally. But the ones where nothing's worked, then can't condemn these patients just saying to them, look, there is nothing else we can do. You can have an operation, but we're going to push you straight towards an operation or have nothing done. In my experience hydrodilatation tends to work quite well in patients.

**Steven Bruce:**

Do you think that's changed, Rupen? Because I remember three or four years ago, we interviewed a chap who I'm sure you know, Simon Lambert, and he was very disparaging about hydrodilatation, said it didn't have any effect at all.

**Rupen Dattani:**

So, there are randomized control trials going on now, there's one going on in Manchester, having a look at hydrodilatation and whenever I go to meetings, shoulder and elbow meetings, people are presenting their data. So hydrodilatation, again, has evolved in terms of how it tends to work. There was this sort of initial thought process that you had to try and inject as much saline as you can to try and burst the capsule and patients would report they were in agony when they were having it done. Now, those sorts of things have evolved. And we tend to think that it's just not about volume distention, it's about you don't have to inject that much in to burst the capsule, you're just trying to stretch the capsule. And the patients that we've had, so again, if you look at frozen shoulder, it's a condition I see, probably, I dunno, I probably see a hundred patients a year with frozen shoulder, it's such a common condition, maybe even more than a hundred. But how many arthroscopic capsular releases do I do? Probably about 20. So, what's happened to the other 80? They've improved with hydrodilatation. Rarely will someone come into my clinic saying, well, actually I'm happy with the diagnosis, thank you very much, I don't want anything done. Often, they're in there because they want something done. And my first line of treatment would be a hydrodilatation.

**Steven Bruce:**

Lucy's asked how long you can realistically leave a tear in a tendon before it's no longer repairable, given the NHS waiting lists that we've already talked about.

**Rupen Dattani:**

So again, that depends. If it's a traumatic tear then I would say, not very long, I'd say you've probably got three months before that retracts. And we have seen this, sometimes we see this for various reasons where someone's got a tear, they've had an MRI, for one reason or another they've not been able to have their surgery and you just repeat the MRI and you've seen the tendon retract a lot quicker. It's because the body's adaptive mechanisms have not had to adapt to that tear. So, the tear

just retracts really quickly. So traumatic tear, I'd say no more than three months. A degenerative tear I think you can leave and quite often people have had an underlying tear, even when they've consulted, so they'll recollect the shoulder being painful three or four years ago, then it improved and then became more painful now. And you look at scans that were done three to four years ago, and there was a tear then, and there's still a tear now, which hasn't really progressed. But two facts are for sure. And this is again, based on sort of scientific studies on people who've not had tears repaired when they've had serial scans done. The tears will definitely progress in terms of size and retraction. And eventually the muscle becomes infiltrated with fat. So, you tend to lose the muscle architecture and that gets replaced with fat. Then it becomes a bit trickier because the repairs don't tend to do as well. So, you have to have that sort of discussion with patients in terms of what their expectations are from the consultation, do they want a normal looking shoulder and are happy to have an operation or are they happy to just have pain relief and then rehab the shoulder? So, the answer to that question is we don't know. For degenerative tear there isn't an equation or a logarithm sort of scale through which they tear, but they do tear. They will progress.

**Steven Bruce:**

You haven't mentioned hyaluronic acid yet and Jane's interested to know your opinion on that. And I think I'm quite interested to hear your opinion compared to that of Ian McDermott, who we interviewed the other day when we asked him a similar question about knee replacements.

**Rupen Dattani:**

Yeah. That's a great question. And I'll tell you why, because we're about to just submit a paper on alternatives to steroid injections for the management of shoulder pain, purely because of the COVID we can't use steroids. So, what are the alternatives? There's only three alternatives that you can have done for shoulder pathology. One is hyaluronic acid. One is PRP. And there's one that's something called prolotherapy, which I was not familiar with. It's predominately injecting dextrose around tendons. So they're the only three options. So hyaluronic acid, there is good evidence for shoulder, for shoulder pain, for arthritic shoulders, for that to give you reasonably sort of short to medium term pain relief.

**Steven Bruce:**

Medium term being how long?

**Rupen Dattani:**

I'd say up to six months. And so, for me, if someone's got an arthritic shoulder and they don't want to have an operation or a replacement, then I tend to refer them for hyaluronic acid injections rather than a steroid injection, which I know is going to have a very short-term pain relief. And there's some evidence to show that it's beneficial for an arthritic shoulder, whether it's sort of primary arthritis or the rotator cuff tear arthropathy. Interestingly, some people inject hyaluronic acid around the bursa. So rather than having a steroid they inject hyaluronic acid, and again, it's not something I've routinely come across in my practice, but when I did a literature search, it seems to have a pretty good result. So, I was quite surprised to see, so there was a randomized trial, where they had three arms, so some patients had PRP, some people had hyaluronic acid, some had steroids. Steroid by far gave the best short term pain relief, in the longer term the PRP and the hyaluronic acid were better. So yeah, there is some evidence to show that it tends to work. Again, I don't think it's a long-term

solution but quite often you will give people sort of that pain relief they're looking for in order to rehab the shoulder.

**Steven Bruce:**

Dare we ask, if you have an uncomplicated shoulder replacement, how much is that likely to set the patient back?

**Rupen Dattani:**

Financially, you mean?

**Steven Bruce:**

Yeah, sorry.

**Rupen Dattani:**

So, it tends to cost around 10,000 to 12,000 pounds for self-paying patients. And majority of that cost, we'll say 90% to 95% will be because of the cost of the implant, which is anything from 1,000 to 2000 pounds and then the hospital costs because of overnight stay, sometimes two nights. On the whole, you know, majority of our patients tend to go home within a day or two because unlike having a hip or a knee replacement where the ability to discharge a patient depends on their mobility, with the shoulders it's different they're mobile, they can quite often be discharged on the next day in a sling. So yeah, the total cost will be around that between 10,000 to 15,000.

**Steven Bruce:**

Does it make any difference if it's a reverse implant?

**Rupen Dattani:**

It's slightly more for the reverse implant. But it's not a huge amount of difference, we're talking about within sort of several hundred pounds. It doesn't double the cost. I think quite often sometimes what will happen is if I'm going to do a particular procedure, I'll make sure I have both implants available because you've got to have that adaptability to change. Cause sometimes you go in there focused, thinking you're going to do an anatomical shoulder replacement and for technical reasons, you can't, then you have to do the reverse. You have to have both the implants available

**Steven Bruce:**

Now this is probably gonna have to be our last question, but it comes from Severn who says, I have a patient with Parsonage Turner Syndrome that occurred spontaneously a year and a half ago. They still have muscle wasting in the deltoid with hypersensitivity in that area, but the muscle strength has improved. Is it normal for it to take so long to recuperate or should he have a further investigation?

**Rupen Dattani:**

So great. So, Parsonage Turner, also called brachial neuritis, is basically what was thought to be underlying possible viral infection around the brachial plexus, which causes a rapid innervation of the muscles. Most of these tend to improve within two years, 80% will get better within two years. So, the fact is it's encouraging that this particular patient-

**Steven Bruce:**

Is that with or without intervention of some sort?

**Rupen Dattani:**

Without any intervention at all. There's very little intervention you can do with Parsonage Turner. What we tend to do is, I tend to investigate them purely just to confirm the diagnosis. The two main sort of investigations would be a nerve conduction studies and EMGs, because they'll quite clearly delineate the particular muscles involved. And that's sometimes quite good to know because quite often the deltoid can be involved, it's not just the rotator cuff muscles, the deltoid can be involved, the latissimus dorsi can be involved. So, it will help the therapist know as to what's involved and which muscles, they're expecting to work on. And if you do an MRI, usually three to four weeks after the answer to Parsonage Turner, you'll see quite clear fat infiltration, but an intact rotator cuff, or oedema around the muscle to show that that is the diagnosis. And if they're not getting better, then if we rescan them, then you've got something to compare with. But quite often patients, 80% will get better within two years. And that's what the literature shows,

**Steven Bruce:**

So, at that stage, if they're not getting better, presumably you're looking for another cause of the problem or will you take some action against the viral infection?

**Rupen Dattani:**

There's very little you can do against viral infection quite often people, you won't be able to identify that particular virus, people may have given a history of, I had a viral illness, a flu like illness and then suddenly this happened. It's also been linked with immunization. Sometimes people have had an immunization and then developed Parsonage Turner Syndrome. No, there's very little you can do, you can't kickstart the nerves. If they haven't improved by two years, then you're looking at possibly surgery to fuse the scapula, which is quite rare. So, I would probably be quite encouraged by the fact that most people do get better within two years. I've yet to see one that hasn't got better, to be honest.

**Steven Bruce:**

Well, that's pretty encouraging for Severn. Thank you very much. Very kind of you to spare your time yet again to help address the problems that we discussed today and hopefully one day, we'll see you back on the show.

**Rupen Dattani:**

Thank you for having me.