

## Hip Arthroscopy Pro and Cons of Surgery / Risk Profile

I have explained the nature of this pathology showing an educational video and correlating this to the actual scans and X-rays. There is a large femoral bump and or pincer shelf of bone which is pushing in on the acetabulum causing the labrum to tear and the cartilage around the outer periphery of the cup to become sheared off and delaminated. One idea is to do an injection to see how much better the pain is, this will also show the pain profile of how much pain comes from the hip versus muscles, tendons and the back in the local area as referred pain.

The aim of a hip arthroscopy is to give you pain and functional relief from a 7 to around a 3 out of ten, this is done by removing the excess bone and address the labral tear and any other cartilage defects that may exist. At the same sitting I would also assess the quality of the articular cartilage. If during the arthroscopy it is very evident that the articular cartilage is significantly compromised then despite our best efforts, it may come to a hip replacement later on in time, when clinically indicated.

This is part of my hip arthroscopy information pack, and I encourage you to look at look at the Surrey Orthopaedic Clinic website and other internet educational sources such as my YouTube channel, LinkedIn and Instagram pages for further insights into hip arthroscopy surgery and recovery (@londonhipsurgeon).

The MRI and X-ray show that there is a rather large bony lesion that is prominent both on the MRI and X-ray. There is also anterior superior (outer edge of the socket) thinning of the articular surfaces and joint surfaces on the MRI and the X-ray. Thankfully there is no evidence of sub chondral marrow oedema within these areas and there doesn't appear to be any diffuse cystic changes. This shows some degree of early to moderate wear and tear within the hip. There is a chondral labral degenerative tear.

I have explained this in detail using the images and a video representation of what is happening, a large cam (bump) or pincer shelf of bony lesion is jarring on the acetabular labrum and cartilage and this is causing early arthritis. You say there is a constant nag within the hip and sometimes a dull toothache pain in the hip which wakes you up at night and I have explained that this is probably the early arthrosis developing.

Moving forward our options really are to do nothing, this will continue to develop into full blown osteoarthritis and it is difficult to predict how fast this can be, this could take as little as one year to five years depending on activity levels.

The other option would be to consider hip arthroscopy in order to take away the cam lesion and stabilise the articular cartilage as best we can, unfortunately once arthritis does start to develop it is very difficult to treat within this area although I will do my best to treat the area with microfracture and a membrane (made of synthetic collagen from porcine/pig material) layer seeded with your own bone marrow cells (taken with a trocar which is a hollow needle to aspirate the biological tissue from the area) to provide some cover of the area to improve the life of your hip joint. The operation takes about two hours, recovery is about three months and I have quoted chances of helping to reduce the pain immediately from 7 to 3, but there is a risk that if fairly diffuse arthritis that is not completely appreciated on the scans is there, then you may end up having a hip replacement within a couple of years afterwards. The advantage of this approach is that we at least make an attempt to keep your own hip. This surgery including the membrane, microfracture and bone marrow cells have been in use for over 10 years with good published results of 5 years showing better outcomes and fewer conversion to hip replacement than microfracture alone. This data is being collected and measured by Mr Chana as well. Complications include potential membrane shearing off, much like the microfracture not working and infection of 1%, the same as the background risk. There have been no reported adverse effects of the membrane as it does not have any cells and we use your own cells for the cartilage regeneration. There is also a very small chance of the needle breaking when taking your bone marrow tissue and tis may require an open operation to remove the prominent metal. If the metal is not prominent then it may be better to leave it within the bone as it would cause scar tissue damage to remove it by open means. This has not happened to Mr Chana so far but is very remotely possible, which is why it has been mentioned.

The third option would be to continue down the line as best you can until the arthritis develops into full blow arthritis and at which point we then do a total hip replacement. You do lose your own native hip but the operation and recovery only takes six weeks and will then have good function for the next 15 to 20 years. Please note that you will need further revision surgery down the line as these things don't last for ever. I have given you information sheets on the hip arthroscopy option and I have asked that you go home and have a discussion with his family about things. We could do a local anaesthetic and steroid injection but this only lasts for a few weeks and just masks the symptoms here. There is also a higher risk of infection following an operation further down the line.

I encourage you and the family to take time and reflect on what sort of risk and path you would like to take regarding trying to salvage the hip versus getting an optimal function.

Following the reflection, we have had a long open discussion about our three options, which would be to go for a hip arthroscopy in order to try and save and salvage the hip, this would have two forms of aim, one for immediate pain relief and remove the physical bony lesion and two to try and improve the longevity of the hip if there has not already got moderate to advanced arthrosis of the joint. If there is arthrosis of the joint then hopefully the operation to remove the bone will give good and better pain relief and range of motion so that we could continue with this as long as possible with the use of injections to carry over after that.

The other option is to continue down a watch and wait programme and do nothing, until the hip has become so worn out that he then becomes very symptomatic with pain and we would then contemplate further injections until things come to a head and if these don't work any more we can then consider total hip replacement but again in the young active age category this is not insignificant and sacrificing a natural hip for a mechanical prosthetic device has inherent problems with mechanical loosening where dislocation, fracture and revision surgery as well as infection risks.

You should consider whether you want to go down the hip arthroscopy route in order to try and preserve things for as long as possible. Depending on the decision we will see where we need to go, I will see you over the next few days/weeks once they have come to a shared agreement decision.

There are three phases of rehabilitation the first phase using crutches to start to walk, phase two getting back onto normal mobility and phase three after three months getting back to more active lifestyle rehabilitation.

After surgery, you will have crutches for 1 to 3 weeks and be asked to either walk on the hip as pain allows, fully weight bearing with crutches, or put 10 to 30% of your weight onto the affected side for the first week then increase this to 30 to 50% in week 2 and up to 100% week 3, followed by independent walking without crutches, full weightbearing from week 4 to 6. Physiotherapy will guide you through this using the protocol provided. Driving can only start after week 4 to 6 if your right leg is the one operated on or if you drive a manual car, once you are able to make an emergency stop safely.

I advise you to use the painkillers regularly as it is easier to keep on top of the pain and exercise rather than be brave and suffer through this. I recommend regular paracetamol, codeine and ibuprofen for two weeks and vitamin C for one month. I also give an antibiotic to reduce the chance of infection.

Risks including infection and a fracture are about 1%, there is usually exacerbation of inflammation of the tendons and joint which may or may not need injections to these areas. Rarely, less than one in 200, the femoral or sciatic nerves can get injured which usually are self resolving, may result in a foot drop and associated numbness. If there is arthritis, then the surgery is less likely to be successful and may come to a total hip replacement in due course. The tear and bump can recur but again, this is rare 1 in 200. Depending on your medical fitness, there is a small chance of heart attack, stroke and risk of death 1 in 1000. If a fracture occurs in the hip then a hip replacement will need to be done as the chances of fixing the fracture and the head surviving without pain are low. The risk of this is 1 in 200. Very rarely in less than 1 in 1000 cases, a small part of the instrumentation can cause debris inside the hip joint. These are normally washed out or retrieved but if very small and deemed to be insignificant, can cause more damage in trying to remove than to leave alone. In less than 1 in 1000 cases, an open hip joint procedure is necessary to finish the operation and remove the debris.

We have made a joint decision for DVT and PE prophylaxes and we have decided to go ahead with bilateral TED stockings and Clexane injections once daily after the operation for a fortnight to give mechanical and chemical thrombo prophylaxes, you also understand the need to keep both feet mobile in order to activate the calf pump and keep the blood flowing through the legs to stop a clot forming as well as keep well hydrated. A risk of using chemical agents to thin the blood (clexane, fragmin, both forms of heparin or Rivaroxaban) is that the blood becomes too thin and forms a haematoma or collection of blood around the joint. Other risks include bleeding into the abdomen, pelvis, chest and head which can have serious life changing consequences such as stroke, these are rare around 2 in 100 cases and risk of death from this is 1 in 500. If you have a bleed, this may require a further operation to wash out the blood and prevent an infection. This can happen in 1 out of 200 cases. If an infection takes hold, this can lead to further surgery and even amputation in 1 in 1000 cases. The other thing to keep in mind is that up to 1 in 500 of people using these drugs can develop Heparin Induced Thrombocytopenia (HIT) or even a spontaneous bleed into an organ or cavity causing stroke or shock. This is a condition where the blood platelets become consumed due to the blood thinning injections. This can be an emergency where you need to be admitted and treated for generalised clots within the body which can lead to multi-organ failure in severe cases as well as a platelet transfusion. A blood test to measure your levels will usually be performed to check your platelet levels are fine but is not required if we use Rivaroxaban which is a tablet, not an injection like clexane although this is not approved by NICE the regulatory body as their recommendation.

The aim to turn the volume of the pain down from 7 to 3 with a 70% success rate in addressing these problems. Please have a look at the information and consider things further and get back to us as necessary for any questions or to book your operation.

Kind regards

Yours sincerely

**Mr Rishi Chana**  
**Consultant Hip & Knee Surgeon**

## Dear Patient

Your doctor has identified damage to your articular cartilage. To repair the damage, he has recommended surgical treatment using the AMIC® method. AMIC® (Autologous Matrix Induced Chondrogenesis) is a biological method for cartilage repair. This innovative technique uses the body's own healing potential and the regenerative capacity of mesenchymal stem cells found in the bone marrow to grow into chondrocytes or cartilage tissue. The cartilage defect is accessed through the opening to the joint (arthrotomy). Special instruments are used to remove the degenerative cartilage tissue.

Several perforations (microfractures) into the subchondral bone plate are made with a sharp instrument (awl or pick). The defect is then covered with the Chondro-Gide® matrix. Through the perforations, bone marrow elements including stem cells and growth factors are released into the defect. Chondro-Gide® stabilizes and protects the migrating cells and thereby provides an ideal environment for the generation of new cartilage tissue.

If cartilage defects are not treated, there is the risk that they can continue to spread and ultimately lead to arthrosis.

### Description of the Chondro-Gide® Matrix

Your doctor has decided to use the Chondro-Gide® collagen matrix. In contrast to metal implants, this implant supports the formation of new cartilage tissue and is completely resorbed. Chondro-Gide® is a CE-marked implant or medical device for treating cartilage defects. Chondro-Gide® consists of porcine collagen type I and III which is naturally resorbed by the body. Collagen is the main structural protein of connective tissue and an important component of articular cartilage. Chondro-Gide® is manufactured in a unique, patented process which results in a bilayer matrix with a compact and a porous side.

### Safety and Quality

The choice of raw materials and the strictly regulated and certified production of Chondro-Gide® meet the highest safety standards and ensure excellent biocompatibility and a consistently high product quality. Chondro-Gide® has been used successfully for many years in the treatment of cartilage defects. Volumes of clinical data and experience document the reliability of Chondro-Gide®.





Fig. 2 Arthroscopic view of MACI procedure



Fig. 3 Arthroscopic view of the final phase of the AMIC procedure

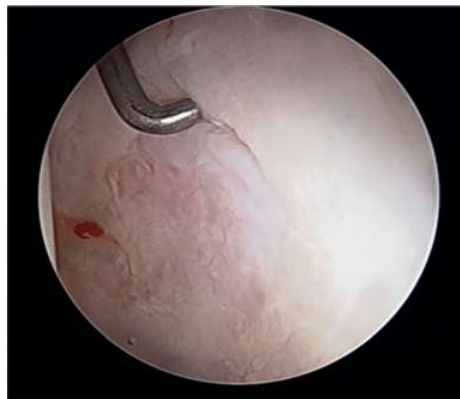


Fig. 6 Second look of an AMIC patient 13 months after surgery

This graph shows that AMIC is better than microfracture alone.

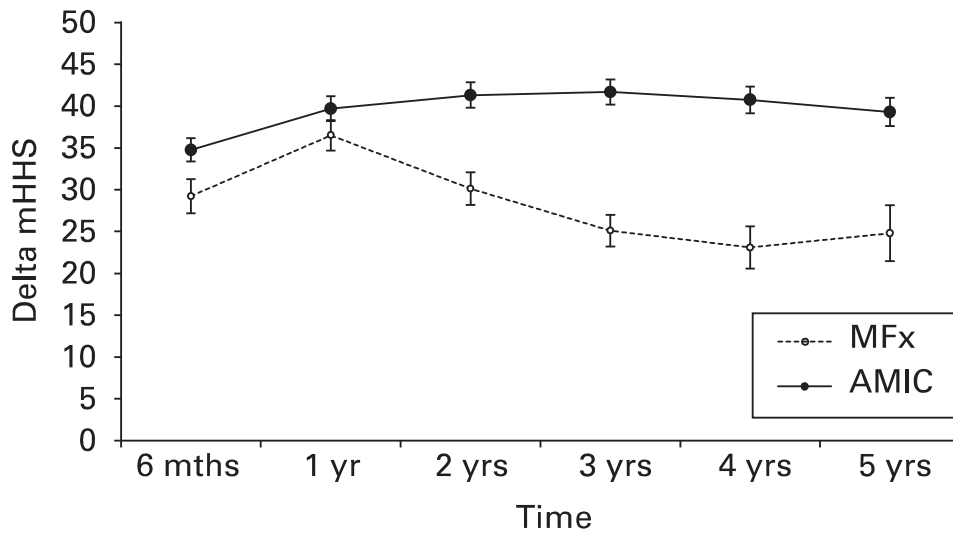
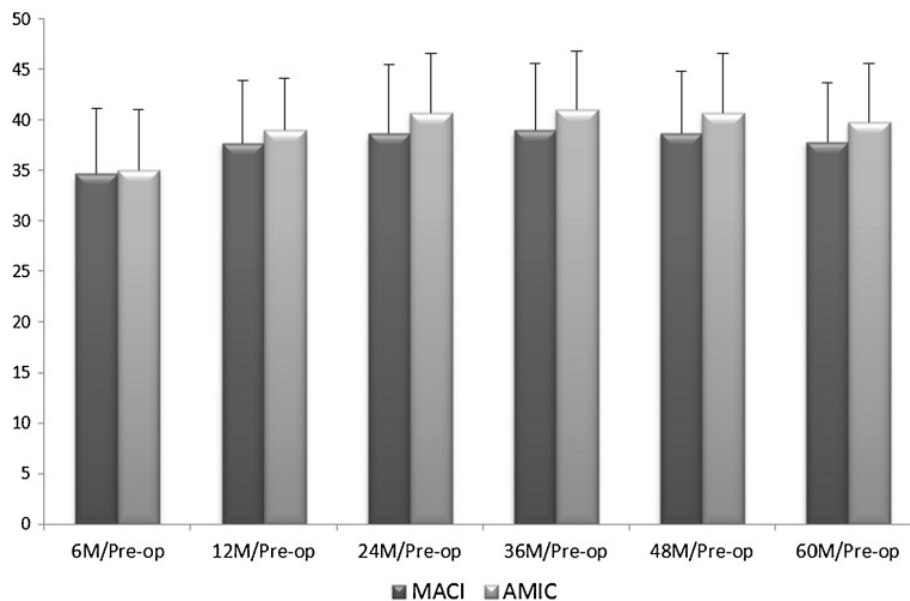


Fig. 3

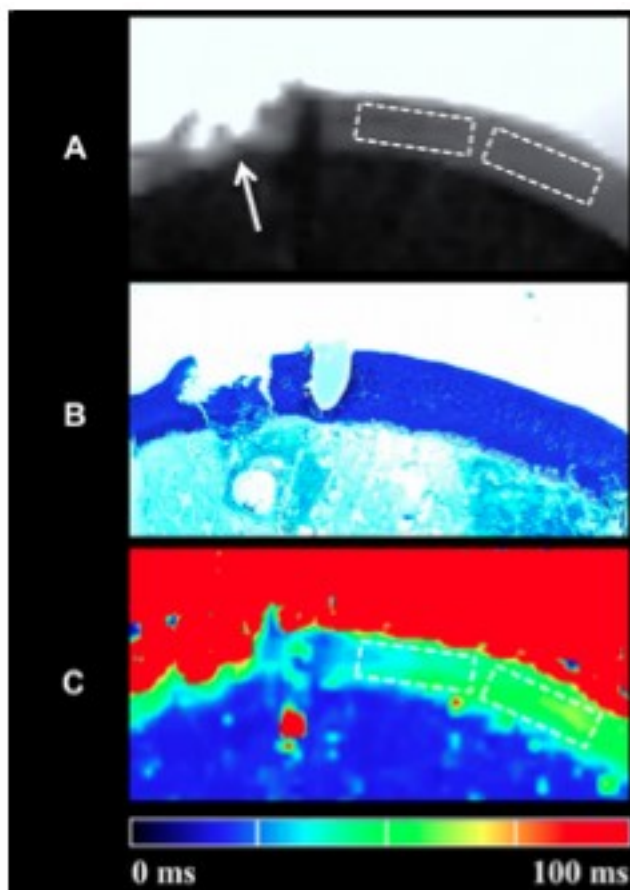
Graph showing mean (95% confidence interval (CI)) of the differences in the post-versus pre-operative modified Harris hip scores (mHHS) for both groups. Autologous matrix-induced chondrogenesis (AMIC) patients show significantly better results at all times ( $p < 0.001$ )

The graph below shows that there is no difference between the AMIC operation outcome and another operation that was used to grow your own cartilage cells outside the body and then implanting them. The advantage with AMIC is that it's a one step process, the other one requires two operations and is very expensive and not offered in most centres as they were issues with contamination. The AMIC operation implants your own bone marrow biologically active tissue and cells without any processing in one step within the same surgical field so contamination is not an issue but shows that the results are just as good.

**Fig. 5** mHHS differences between follow-up and preoperative level for MACI and AMIC procedures



Mr Chana will use the MRI scan to measure and map the articular cartilage quality before and after the operation to help show how well your hip is healing. This is a typical image of what it looks like and he has explained what this means to you in clinic.



I have read, reflected and understood the conversation above. As part of my Treatment Contract I have discussed and conveyed my specific goals, worries, concerns and questions with Mr Chana. These are outlined below and by signing this confirm that a shared decision about all aspects of my care have been completed to my entire satisfaction.

My goals or outcomes expected of the treatment including surgery are:

Continue active lifestyle and try to preserve hips.

Reduce and remove pain, secondly to minimise risk of further accelerated arthritis and lifestyle with family.

My specific concerns pertinent to my personal circumstances are:

Work from home. I will need support with phased return to work.

VTE Plan:

TEDS and Fragmin 5000 units sc injection once a day for 14 days according to new NICE guidelines.

I accept the risk profile and procedure tailored to my personal circumstances and concerns raised through the consultations and give Mr Chana informed consent to perform the agreed surgery / treatment plan specified above. I have also reinforced my understanding of the plan above by explaining what I am going to say to my family at home about things back to Mr Chana so we are both happy with our understanding.

Signed