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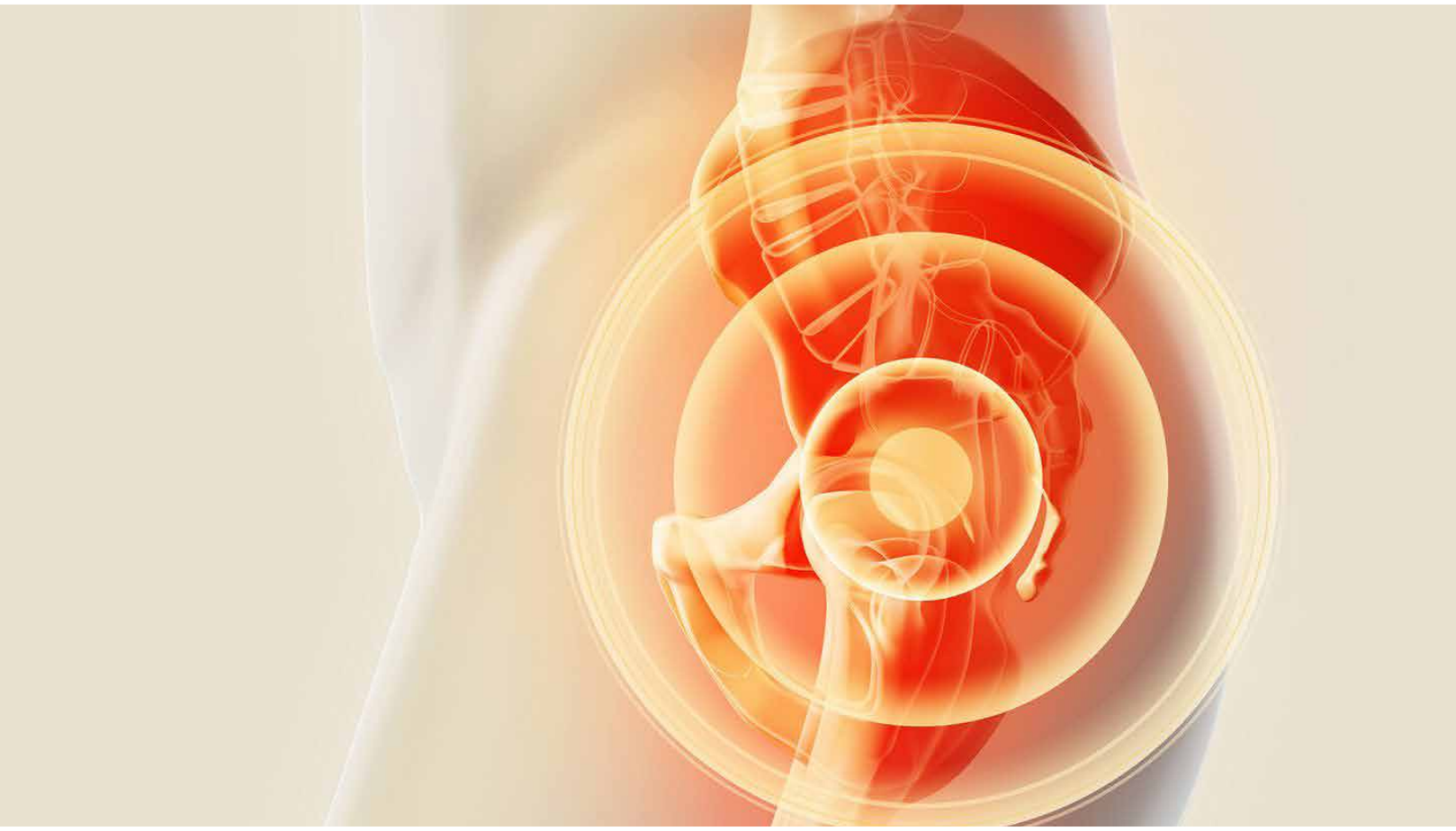

TREATMENT

2024

North East Hip Clinic, Nuffield Health, Clayton Road, Newcastle upon Tyne, NE2 1JP https://nehipclinic.com

Fai Treatment

Treatment of Femoroacetabular Impingement

The conventional treatment for these is arthroscopic labral repair, acetabular rim recession for pincer lesions and femoral osteochondroplasty for femoral cam lesions.

Open Treatment – Surgical Dislocation of The Hip

The original technique to deal with FAI involved open surgical approach and was described by Ganz et al. and termed as the trochanter flip approach. An open approach allows dislocation of the hip and therefore for an unrestricted view of the femoral head and acetabulum. The vascular supply to the head of the femur is at risk during surgical dislocation of the hip, but Ganz et al. have shown that the predominant blood supply to the femoral head is via the deep branch of the medial circumflex femoral artery and that keeping the short external rotators intact prevents damage to this artery.

Safe dislocation of the hip is accomplished by performing an osteotomy leaving part of the greater trochanter in place with its gluteus medius attachment intact. A capsulotomy is made anterolaterally along the femoral neck ensuring it remains anterior to the lesser trochanter, thus avoiding damage to the medial circumflex femoral artery. There is a reported risk of avascular necrosis of less than 1 in 1,000 with this approach.

Following the surgical dislocation, the femoral head-neck junction osteoplasty can be performed to address the cam deformity, and then the labrum can be repaired and any chondral damage addressed at the same time. In cases of pincer impingement, an acetabular rim recession to decrease over coverage is carried out followed by refixation of the labrum. If, however, there is a significant amount of over coverage secondary to a retroverted acetabulum then a pelvic osteotomy to correct the version may be essential.

Arthroscopic Treatment

What are the benefits Arthroscopic Treatment?

The benefits of arthroscopic treatment include a minimally invasive procedure with a subsequent decrease in rehabilitation time. However, there is a steep learning curve, training is essential and it is certainly not a procedure for the occasional operator. But, in expert hands and centres which deal with this condition regularly, the results of arthroscopic treatment appear promising with one series reporting a 93% return to high-level competition for athletes following arthroscopic treatment for FAI.

How Do They Work?

Arthroscopies are typically performed under general anaesthesia with the patients either in a lateral or supine position. Both traction and fluoroscopic guidance are required. Applying traction under fluoroscopy until a vacuum sign secondary to the negative intra-articular pressure is evident accesses the central compartment of the hip.

The joint capsule is then distended with normal saline, a 17 G needle is inserted into the joint avoiding the labrum and then a flexible nitinol guide wire is inserted into the joint over which the arthroscopic cannula is passed. A 70° arthroscope is typically used for the procedure.

The labrum and chondral damage and the pincer lesion can be addressed via the central compartment (Fig. 5). The impingement lesion or the asphericity of the femoral head on the other hand is addressed via the peripheral compartment (Fig 6). The peripheral compartment is accessed with the hip in flexion and no traction. Labral tears can be effectively treated with hip arthroscopy. However, the issue of whether to remove and refix or debride labral tears remains unresolved. The acetabular labrum acts to enhance joint stability and debridement, therefore has implications with regard to hypermobility and ongoing subluxation of the hip.

Complications of hip arthroscopy can be attributed to either those caused by traction or those by instruments and have been reported in 0.5–5% of patients. The majority are related to transient neuropraxia secondary to distraction of the joint. Injuries to the sciatic nerve (posterior portal), lateral femoral cutaneous nerve (anterolateral portal) and femoral nerves have all been reported. Traction may have a detrimental effect on the joint capsule, the ligamentum teres or the acetabular labrum; however, this has yet to be

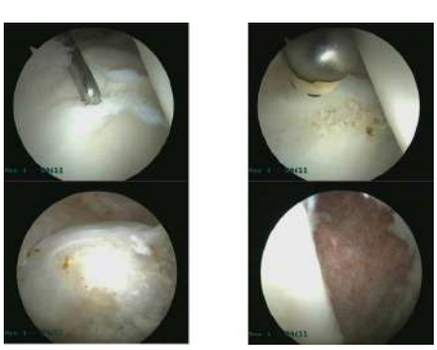

Figure 5 – Chondrolabral junction tear treated with radiofrequency ablation; Cam lesion treated with femoral osteochondroplasty

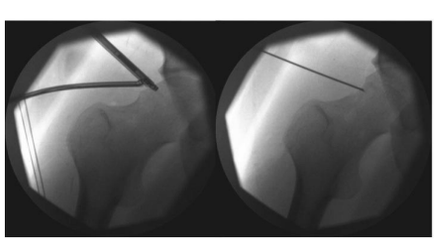

Figure 6 – Femoral cam lesion removed arthroscopically to achieve a round femoral head

Osteotomy For Dysplastic Hip

How It Works?

The treatment for these is a periacetabular osteotomy. In the past large incisions were used but now with latest equipment minimally invasive osteotomy (Figure 8) is the standard procedure, with the length of the skin incision being between 8-10 cm.

Osteotomies of the pelvis and/or femoral osteotomies can alter force transmission through the hip joint and thus potentially influence clinical symptoms and the course of the OA process. For patient with actabular dysplasia the most established procedure is a Bernese periacetabular osteotomy although there may be a small role for Chiari and Shelf osteotomies in non-congruent hips. Proximal femoral osteotomies may be beneficial in patients with proximal femoral deformities and will be dictated by the pathology. However, caution should be taken with regards the need for future total hip replacement. With the success of Bernese periacetabular osteotomies and its good long-term results the role of alternative osteotomies is very limited.

Bernese periacetabular osteotomies lead to anatomical restoration of biomechanics and improves femoral head cover without compromising the pelvic volume, which is critical for child-bearing age. The abductors and posterior column are left intact allowing earlier weight bearing and quicker healing. The osteotomy was conventionally performed using modified Smith-Peterson approach but minimally invasive approaches have been described with lesser soft tissue dissection, which allows quicker rehabilitation, reduced blood loss and decrease in complication rate. Good long- term results can be expected in young patients, where the process of damage is not advanced.

Figure 8 – Pre and post bilateral periacetabular osteotomy radiographs in a 16-year old, showing good correction, adequate coverage and well-healed osteotomy sites

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Ajay Malviya is a Consultant Orthopaedic Surgeon at Northumbria Healthcare NHS Foundation Trust in the North-East of England. He specialises in pathologies affecting the young adult hip and has expertise in periacetabular osteotomy for hip dysplasia using a minimally invasive approach and hip arthroscopy. He has a wide tertiary referral practice and is one of the highest volume hip preservation surgeons in the United Kingdom. In his routine practice, he deals with sports injuries of the hip and has published and presented widely on the results of hip arthroscopy and pelvic osteotomy in athletes and the general population. He has also completed a PhD on the role of hip arthroscopy in femoroacetabular impingement.

He is the Treasurer of the British Hip Society and a Trustee and the past-Chairman of the UK Non-Arthroplasty Hip Registry, which collects outcomes on hip preservation procedures performed in the UK and leads research initiatives from the Registry. In addition, he is the Deputy Editor of the Journal of Hip Preservation Surgery (Oxford University Press). He is also the Associate Editor of the Journal of Orthopaedics and in the Editorial Board of the American Journal of Sports Medicine.

He has an active interest in research with more than 100 publications in peer-reviewed journals to his name, and lectures nationally and internationally. He is also the Chair of the SICOT (Société Internationale de Chirurgie Orthopédique et de Traumatologie) Research Grants committee and Vice Chair of the ISHA (International Hip Preservation Society) Research Committee. He was awarded the prestigious ABC (America-Britain- Canada) fellowship in 2016 and travelled around North America, visiting several high-profile centres.

He is heavily involved in training and is an examiner for the Royal College of Surgeons (FRCS T&O). He is the Vice-Chair of in the BOA Education and Careers committee and has been the National Lead of the UK and Ireland orthopaedic in-training examination (UKITE) for almost ten years. His fellowship has trained Consultants who are now working in various parts of the country.

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