

Welcome to the first issue of Hip and Knee News, a specialist newsletter for General Practitioners and other colleagues.

Hip and knee arthritis continues to affect the quality of life in patients of all ages. Recent trends show that younger patients are being increasingly affected too. A wide spectrum of clinical conditions and severities underlie these conditions requiring treatment options which are appropriately targeted to each patient. Therefore a variety of management strategies including bone conserving and joint sparing options are being introduced into clinical usage.

Unravelling the risks and benefits of all these procedures can be quite daunting. This newsletter is an attempt to provide an easy educational tool to the already overburdened medical and healthcare professionals, to help make evidence-based decisions in their busy practices. Where possible we shall use real-life case studies as a starting point. We also aim to highlight matters of current interest in this field. To this end we will briefly review the MHRA alert surrounding metal-on-metal bearings in this issue.

We hope you find this newsletter informative. If you have any queries, please do not hesitate to contact me or my team. Our email address is:

enquiries@mcminncentre.co.uk



**Derek McMinn**  
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## MHRA Alert on Metal-on-Metal Bearings - "What's all the fuss about?"

The British Hip Society and the MHRA (Medicines and Healthcare products Regulatory Agency) recently issued advice about an uncommon type of soft tissue reaction around metal-on-metal (MoM) hip devices. One centre gave them the misleading name 'pseudotumours' and since then sensational press reports have begun to emerge. The problem has to be viewed in perspective.

Joan came to see Mr McMinn in 1999 as a very active 52 year old woman who had been struggling with hip arthritis for seven years. Following a BHR, she was delighted to have her normal life back again. She was even able to resume her favourite sports - golf, tennis, cycling and skiing.

### Factors leading to pseudotumour formation

Pseudotumours are caused by excessive wear debris. Debris leads to inflammation, fluid collection, soft tissue destruction and rarely the formation of a granulomatous mass. Three factors potentially contribute to high wear.

**Implant Factors** - Poor implant design contributes to high wear and pseudotumours as seen from the failures with the Articular Surface Replacement (ASR). This device has now been withdrawn.

**Surgeon Factors** - Surgical error and component malposition can lead to edge wear of the components releasing large amounts of debris.

**Patient Factors** - Pseudotumours are more common in women. The smaller component sizes used in women leave less margin for error. Developmental hip dysplasia, a common cause of premature arthritis in women, is associated with anteversion abnormalities. This three dimensional problem is complex and surgical experience is critical.

Around the tenth anniversary of her BHR, she began to experience a dull ache in her groin. Plain radiographs showed erosion around her hip and a multi-slice CT scan showed the so-called 'pseudotumour'. In January 2010 she had her hip resurfacing revised to a total hip replacement (THR).

*"Ten years ago, had I known that I would need a revision at this stage I would not have changed a thing. I'd have gone ahead with the resurfacing operation."*

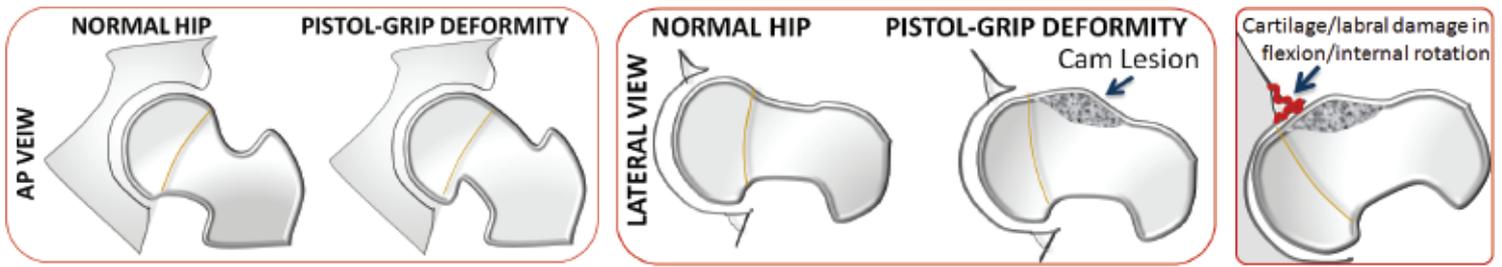


She has seen the sensational press reports but says, "What is all the fuss about? I have had 10 good years of my life restored to me. Now I have had to undergo a revision operation." Commenting on her recovery after the revision, she adds, "I was in hospital for five days. The wound healed fine. The day after coming home I cooked supper. The following day I went to the supermarket. Six weeks later I visited my daughter in New York. Two months after the operation I was back to life as usual."

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# Tips and Tricks

## What is pistol-grip deformity & what does it indicate?



When the femoral head appears tilted on its neck like a drooping daffodil it is given the fancy name 'pistol-grip' deformity. If you turn the pelvis x-ray on its side the similarity to a pistol grip emerges.

The aetiology may be idiopathic or the result of a subclinical slip of the femoral epiphysis during adolescence. Recognising this deformity on a plain radiograph is important because:

**A.** It is often associated with a Cam Lesion on the lateral view which can give rise to 'femoro-acetabular impingement (FAI) syndrome'. Impingement can potentially lead to damage to the articular cartilage/labrum and onto premature arthritis. If a very young patient with a Cam Lesion presents with hip pain before arthritic change, the lesion can be corrected through an arthroscope. It is hoped that this will prevent arthritis or at least delay its onset.

**B.** If a patient with a pistol-grip lesion presents with established arthritis, a Birmingham Mid-Head Resection (BMHR) is a better solution than a resurfacing. This is because the femoral head does not offer peripheral support, which is essential for a resurfacing. (We will discuss the BMHR in more depth in a future issue.)



## Hip surgery without anticoagulants?

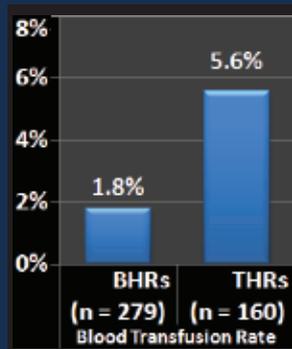
We do not use anticoagulants after hip surgery. Our regimen includes hypotensive epidural anaesthesia, elastic compression stockings, intermittent calf compression, early mobilisation and an antiplatelet agent (generally aspirin). We perform ultra-sonographic assessment for DVT during the first week to detect every case.

### What is the incidence of DVT/PE with BHRs?

During the study years (2005 – 06), in patients with no previous history, we had:

- No above knee DVT
- No PE
- No symptomatic below knee DVT
- Asymptomatic below knee DVT: 4%. All of these resolved subsequently without the need for anticoagulation

The rate of blood transfusion following unilateral BHRs is 1.8% and with THR it is 5.6% ( $p < 0.05$ )



## New website launch for the McMinn Centre

The McMinn Centre is delighted to announce the launch of our new-look website in September. We have redeveloped to improve the quality of information for both patients and healthcare professionals visiting the site.

Within the site, visitors will have easy access to relevant information on the treatments we offer, as well as multimedia content such as videos, presentations and animations to enhance overall learning.

We have also provided visitors with an array of patient case studies to illustrate our results with different procedures.



[www.mcminncentre.com](http://www.mcminncentre.com)



## Back at BMI Edgbaston

After twelve months away, Mr McMinn is once again working from BMI The Edgbaston Hospital, where he previously spent 19 years and carried out up to 500 procedures per year. "I am supported by highly trained nursing and professional healthcare staff at the Edgbaston Hospital, which provides my patients with the highest possible standards of care," commented Mr McMinn. "The hospital has strict cleanliness measures and clinical procedures to minimise the chance of infection. They also continuously monitor the satisfaction levels of all their patients and are rightly and justifiably proud of the results."

Sarah Marston, Hospital Manager, commented, "We are delighted to have Mr McMinn returning to his 'home' at Edgbaston. He is one of the most respected and prominent orthopaedic surgeons in the world. Combining great consultants with great teams and facilities produces great outcomes for patients. And we aim to meet the highest expectations of everyone."

# Conservative Hip Arthroplasty - The Birmingham Hip Resurfacing

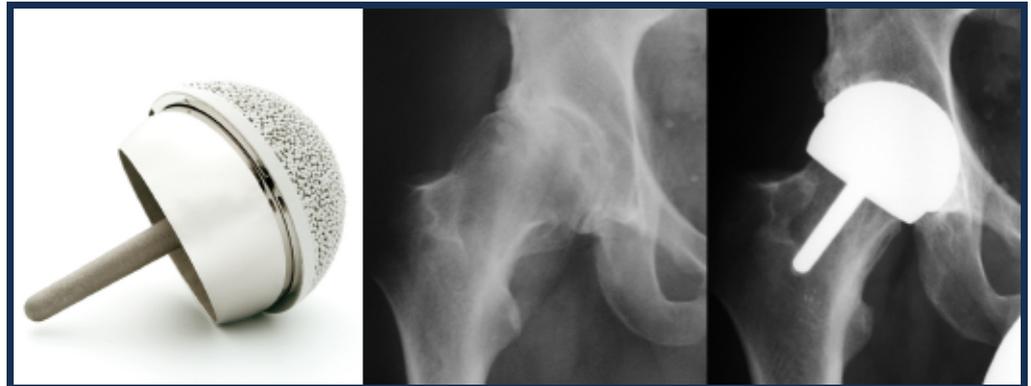
Ivor is a very active site engineer whose job involves going up and down ladders all day. He also enjoys field archery, cycling, country walking and mountain walking.

He first experienced groin pain following a motorcycle accident. It came as a shock when his surgeon x-rayed his hips and told him that he had hip arthritis. As the pain grew worse he went back to see his surgeon but he was told he was too young for any operation and therefore had to grin and bear it. He felt his life had suddenly come to a halt.

Ivor heard of Mr McMinn and came to see him as a distraught 47 year old. He says, "I looked at my own hip and the cup was triangular shaped and what should have been the ball was just about square, it was that worn away. I was in horrendous pain." He had to take pain killers and anti-inflammatories even though he hated taking them.

After his BHR the gnawing pain was relieved instantly. He says, "Going back to work was easy. With time I could even get back to doing all the outdoor things I enjoyed. Two years after the operation I walked Snowdon from the railway station. I was fitter than I had been for about four years before the operation."

Recently Ivor came for his ten year check up. "It is an amazing piece of engineering and a wonderful bit of surgery," he says. "I've been able to do everything I want with the hip. Nothing limits me really. Work is very physical but no hip problems at all."



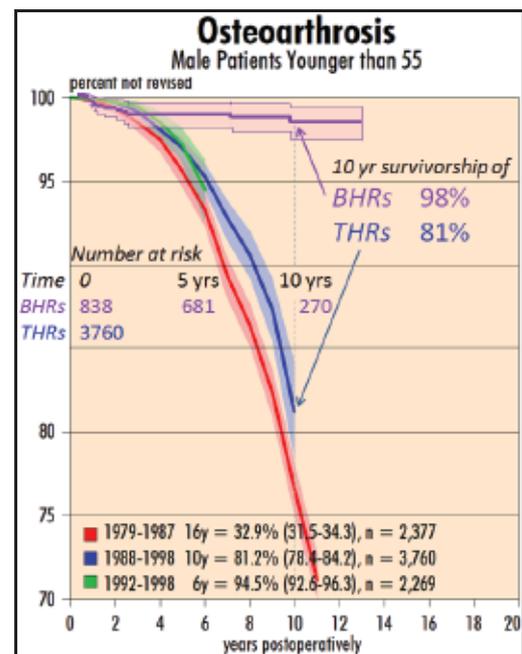
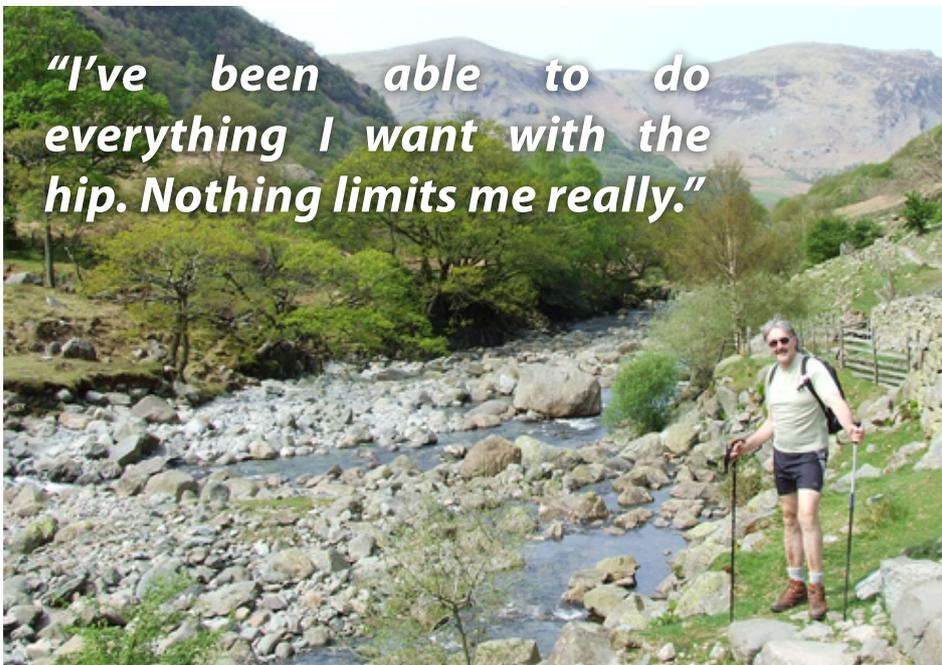
The first BHR performed, showing excellent results at 13 years follow-up

Degenerative arthritis of the hip starts as a surface process eroding joint cartilage away. Therefore hip resurfacing has always attracted orthopaedic surgeons as a logical solution. Sir John Charnley tried this in the 1950s using Teflon without lasting success. Other renowned surgeons tried different materials but they too failed. They assumed the failures were due to the femoral heads being rendered avascular during the surgical procedure and therefore resurfacing was largely given up as a lost cause.

During the late 1980s Mr McMinn observed that metal-on-metal (MoM) bearings would be ideally suited for resurfacing. He implanted his first MoM resurfacing in February 1991. Over the next six years improvements were made to the design, instrumentation and the operating technique before the launch of the Birmingham Hip Resurfacing (BHR). Since then over 130,000 BHRs have been implanted worldwide with a high success rate.

Unlike a total hip replacement (THR), the BHR replaces only the joint surfaces. The worn cartilage and a thin layer of bone is removed from the acetabulum and from the surface of the femoral head, and a 3 to 4mm cobalt-chrome metal surface is fixed on to each. It is logical that in a young patient a more bone conserving approach such as the BHR will make future revisions easier.

Mr McMinn has performed over 3500 hip resurfacings. With their quality of life restored, most patients have returned to an active lifestyle. Over 90% of our young male patients with unilateral resurfacings resumed sporting activities and over 60% returned to impact sports. The BHR revision rate is 2% at 13 years. Many early failures were due to poor quality bone in the femoral head. With better patient selection the failure rate has come down even further.



In young patients, the 10-year survivorship of BHRs (98%) is almost an order of magnitude better than that of conventional THRs (81%).

## The McMinn Centre - Profile



The pioneering work of Mr Derek McMinn in the field of hip and knee arthritis over the years has created a large, well-documented cohort of patients with ongoing follow-up who offer a great opportunity for research into the efficacy of orthopaedic devices. In order to direct and co-ordinate his clinical and research work he created The McMinn Centre.

The McMinn Centre is a centre of excellence where patient care goes hand in hand with research on hip and knee sciences. Our research has led to over one hundred pieces of published literature in the last few years with several original citations and papers.

The Centre also coordinates an ongoing educational programme for surgeon training. Surgeons come from all parts of the world to closely observe and gain an insight into the surgical techniques developed and perfected by Mr McMinn in the specialist field of conservative arthroplasty.

Over the years, Mr McMinn has built up a team of dedicated staff who are passionate about their role as facilitators of patient care. They are committed to transforming the worrisome preoperative period for patients' into a smooth, easy process and continue this care throughout their follow-up. The privilege of being a part of the ongoing research endeavours of Mr McMinn is seen as a fringe benefit.

We will be pleased to hear from you and offer a professional, personalised service. **The McMinn Team**

### *continued from page 1...*

When patients hear the word 'pseudotumour' they wonder if it is some pre-cancerous condition. They are understandably concerned. To set the record straight, these reactions have nothing to do with cancer.

### **Our experience with 'pseudotumours'**

In our series of over 3000 BHRs, ten patients developed adverse reactions like this (0.3%). All of them were women. In most, a collection of fluid occurred around the hip nearly 10 years after implantation. They complained of groin pain or discomfort. In some cases there were subtle X-ray changes. In two patients, including Joan, there was bone loss. All of them have been revised to a total hip replacement using a non-MoM bearing and they are functioning well.

Modern hip resurfacing was developed as a response to the poor results of conventional THRs in young and active patients. With their active lifestyles and long life expectancy young patients destroy their THRs early. Even with advances in THR technology, the Swedish Hip Register still shows the 10-year survivorship of hip replacements in youngsters with osteoarthritis to be only around 65%<sup>1</sup>.

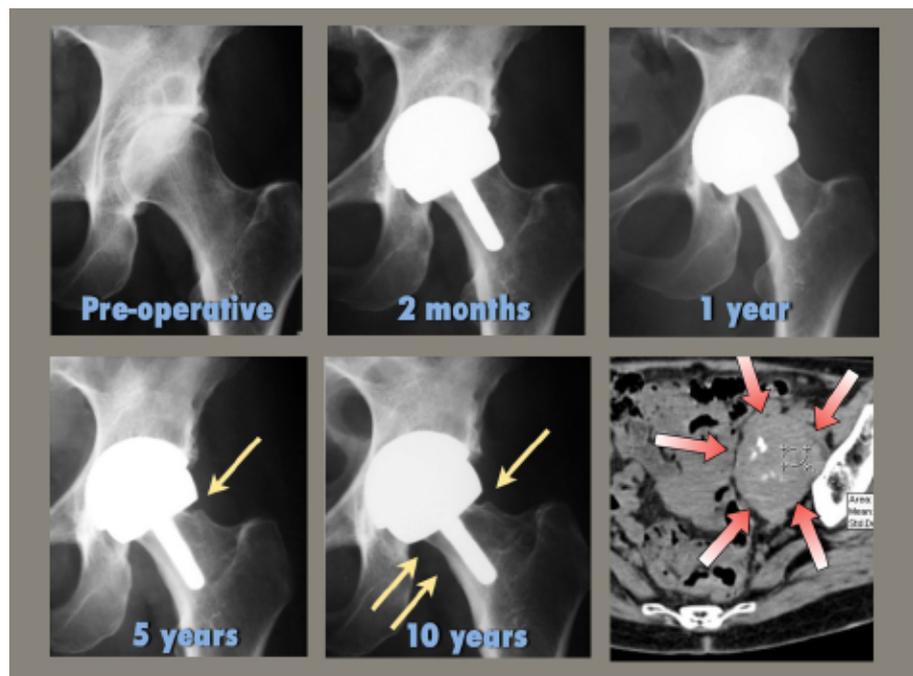
In comparison, the 13-year survivorship of BHRs in young patients is 98%. And with an incidence of 0.3% (1 in every 300 patients) over 10 years, the risk of pseudotumors is small.

***"To set the record straight, these reactions have nothing to do with cancer."***

### **How do we treat a patient who develops a pseudotumour?**

A person with an adverse reaction to a prosthesis may present with persistent groin pain, discomfort or a palpable mass around the hip. Distal swelling or neurovascular compression signs may also be present. They need to be examined by a hip surgeon. Plain radiographs may show femoral neck thinning or osteolysis. A multi-slice CT scan with metal artefact reduction software (MARS) is useful to assess soft tissue fluid or mass. It is important that the scan has MARS, otherwise dense artefact from the device makes it difficult to interpret. Blood metal ion levels provide an estimate of in vivo wear. Excluding infection through inflammatory markers and/or hip joint aspiration may be necessary.

If it is indeed a debris induced reaction or 'pseudotumour' then a revision operation is required and the resurfacing is converted into a THR with a non-metal-metal bearing. If recognised and revised early, the recovery should be as from any other revision hip replacement.



The radiographic series of a patient with a BHR showing progressive neck thinning (arrows) between 5 and 10 years. Multislice CT scanning (with MARS) confirms a 'pseudotumour'.

#### References

<sup>1</sup> S. Hilmansson. An Epidemiological Analysis Of A Young THR Population In Sweden. J Bone Joint Surg [Br] 2006 88-B: 47-48