

Patient details

Patient name: XXXXXX

Patient DOB: XXXXXX

Patient gender: XXXXXX

NHS number: XXXXXX

NJR index number: XXXXXX

Referring surgeon: XXXXXX

Referring hospital: XXXXXX

Implant details

Reason for revision as listed by the surgeon: Unknown

Implantation side: Left

Explanted prosthesis: XXXXXX

Implantation date: XXXXXX

Explantation date: XXXXXX

Implantation duration: Approximately 10 years

Acetabular cup lot number: XXXXXX

Femoral head lot number: XXXXXX

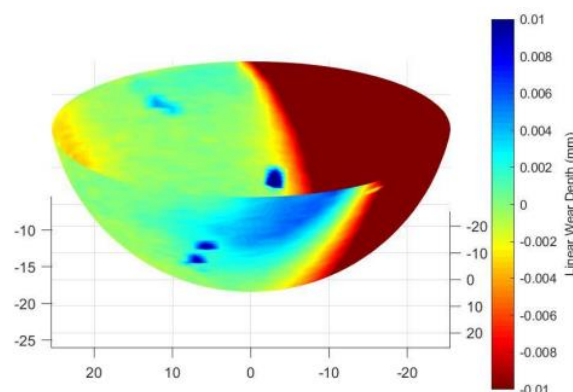
Acetabular cup

There were scattered, multidirectional scratches over most of the bearing surface. Using the Smith & Nephew logo to reference the 12 o'clock position, there was thinning of the rim extending from the 2 to 6 o'clock position, with discolouration of the flat surface. On the posterior surface there was significant bony ingrowth with signs of metal staining.



Acetabular cup

Coordinate Measuring Machine (CMM) analysis. The superoanterior rim is to the right on the wear map.



	Max Linear Wear (μm)	Volumetric Wear (mm^3)	Nominal Diameter (mm)
Acetabular Cup	132	48.16	52.0286

Femoral head

A prominent broad wear scar was visible with an obvious iridescent boundary. There was black discolouration of the bone surrounding the femoral peg. Retrieval damage was also identified on the bearing surface in the form of isolated scratches. See additional figures on the next page showing bone degradation and debris removal.



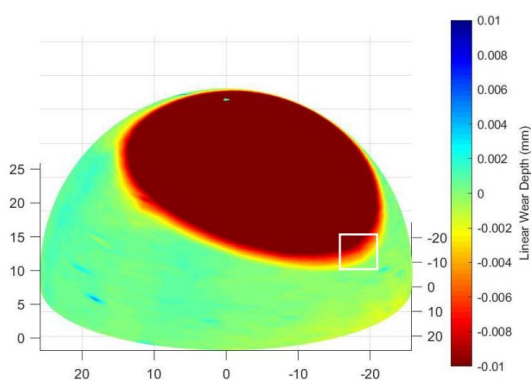
Probing of the femoral bone revealed large cyst, over 10mm in depth to the prosthetic surface. The cyst was filled with necrotic, metal stained bone debris (above). Image below taken following removal of necrotic material.



Femoral head

Coordinate Measuring Machine (CMM) analysis

The apex of the wear scar (white box) is in the superoanterior region.

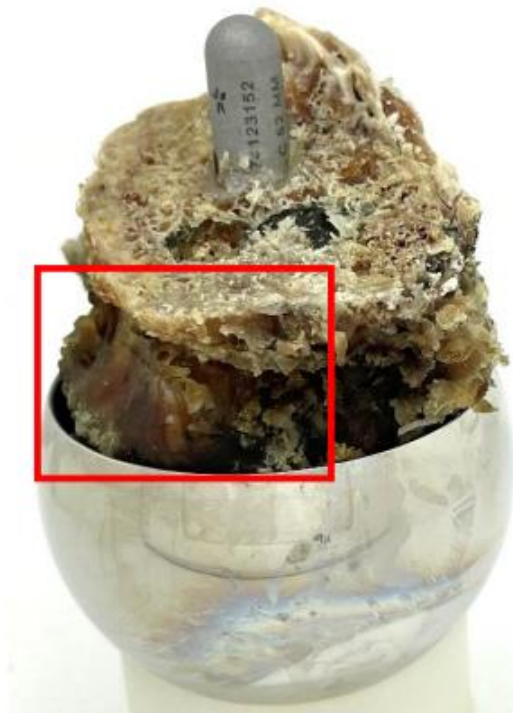


	Max Linear Wear (μm)	Volumetric Wear (mm^3)	Nominal Diameter (mm)
Femoral Head	54	31.22	51.7684

The diametrical clearance was calculated to be 260.2 microns.

Additional findings

There was scalloping of the posterior femoral neck consistent with femoroacetabular impingement (as shown by the red rectangle) in extension/external rotation.



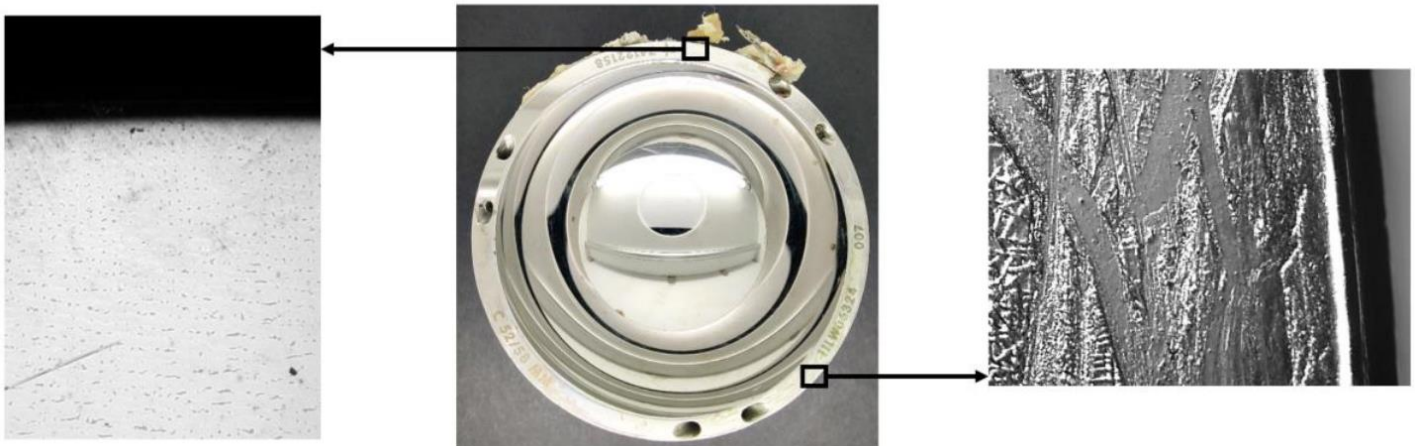
Summary

The main findings of the analysis of this explanted BHR were:

1. Excessive wear of the bearing surfaces
2. Edge wear of the cup
3. Degradation of the normal femoral bone architecture secondary to metallosis
4. Signs of posterior femoral neck impingement on the cup rim

The total wear of the bearing surfaces was over 79 mm³, meaning that the device wore at a mean rate of approximately 8mm³ per year.

Successfully functioning MoM devices wear at less than 1 mm³/year. The increase in wear occurred due to posterior impingement of the femoral neck on the rim of the cup leading to anterior subluxation of the femoral head. The effects of this anterior subluxation on the rim can clearly be seen in the images below, with gross surface disruption over the anterior rim (right) compared to as manufactured surface (left).



Reported by: XXXXXX

Verified by: XXXXXX

Signed off by: XXXXXX