

Clinical and radiographic outcomes of 139 hips with the articular surface replacement (ASR) total hip arthroplasty

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THE ASR THA

- ✘ The DePuy ASR large head MoM THA
- ✘ Came on to the market in Europe in 2003.
- ✘ more than 93 000 ASR implants sold.
- ✘ Popular implant in our hospital since 2005
- ✘ Several studies proves that MoM designs fail earlier than other THA

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Summary

Background

Total hip replacement (THR) is extremely common. Some prostheses fail, particularly in younger patients, and need to be revised, most commonly for loosening secondary to wear or dislocation. Surgeons have tried to address these problems by implanting large diameter metal-on-metal bearing surfaces. Our aim was to assess if metal-on-metal bearing surfaces lead to increased implant survival compared with other bearing surfaces in stemmed THR and additionally, if larger head sizes result in

125% [+](#)

HR= 2.82 !

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Five-Year Results of the ASR XL Acetabular System and the ASR Hip Resurfacing System: An Analysis from the Australian Orthopaedic Association National Joint Replacement Registry

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J Bone Joint Surg Am, 2011 Dec 21;93(24):2287-2293. doi: 10.2106/JBJS.J.01727

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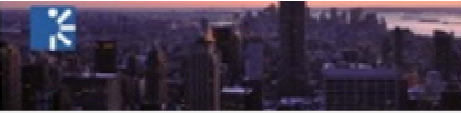
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Volume 27, Issue 4 , Pages 539-544, April 2012

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Disappointing Short-Term Results With the DePuy ASR XL Metal-on-Metal Total Hip Arthroplasty

[Nicholas M. Bernthal, MD](#), [Paul C. Celestre, MD](#), [Alexandra I. Stavrakis, MD](#), [John C. Ludington, PA-C](#), [Daniel A. Oakes, MD](#)

Received 2 September 2010; accepted 26 August 2011. published online 14 October 2011.

Abstract

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**retrospective 70 patients 28% implant dysfunction ,
17% revisions**

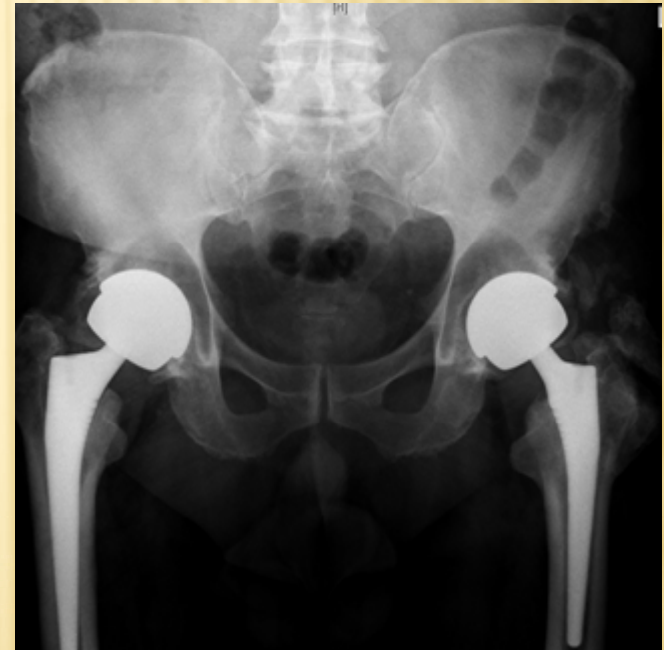
THE ASR CLINIC

- ✘ Johnson & Johnson recalled this implant on August 2010.
- ✘ As instructed by the IMH all patients with the ASR implant were summoned for clinical evaluation.

THE ASR CLINIC – METHODS

✘ Data Collected:

- + Demographics, clinical data
- + PE
- + Pain , Satisfaction (VAS), HHS and SF-12.
- + XR
- + Additional tests (Ions/MRI)
 - ✘ Symptomatic patients
 - ✘ Concerned patients
 - ✘ Radiological features



RESULTS – PATIENTS' POPULATION

- × 2005-2010
- × 125 patients – 139 hips
- × 54% female
- × Age – 67.6 (32-90)
- × Follow up – 42 months

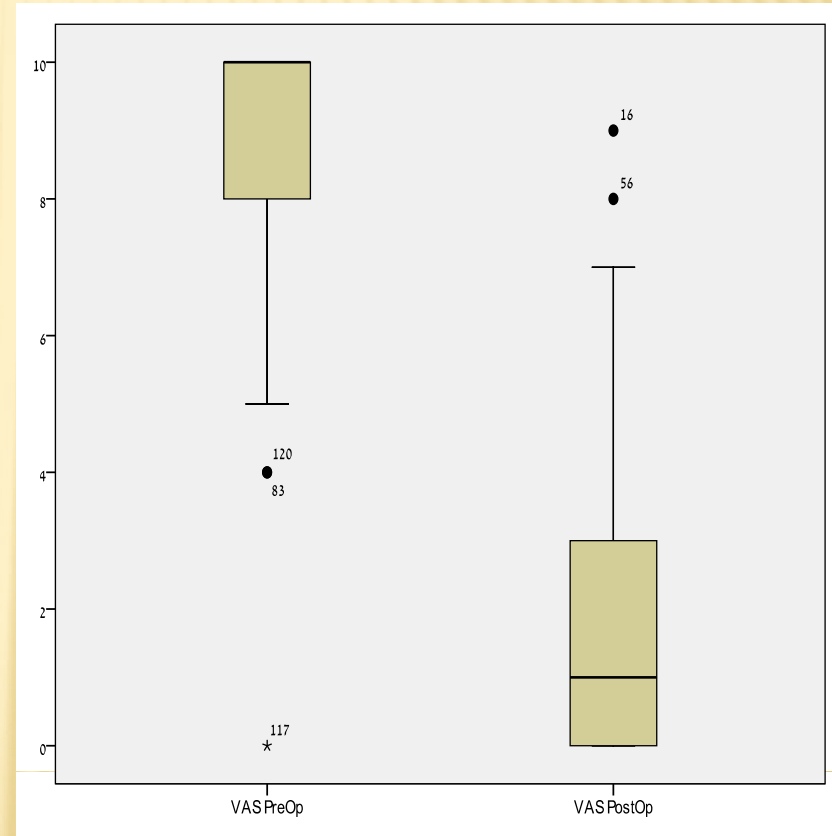
RESULTS – SURGICAL PROCEDURE

- × 14 bilateral procedures
- × 68 right/43 left

Femoral Head Size (mm)	45.35 (4.08)
Acetabular Implant Size (mm)	<u>51.94 (3.17)</u>
Femoral Stem Size (mm)	11.5 (2.15)

RESULTS – CLINICAL OUTCOMES

- ✘ Pain (VAS 0-10)
 - + Pre-op – 8.8
 - + Post-op – 1.7 (p<0.05)
- ✘ Satisfaction (rVAS 0-10)
7.86



VAS PREOP VAS POSTOP

RESULTS – CLINICAL OUTCOMES

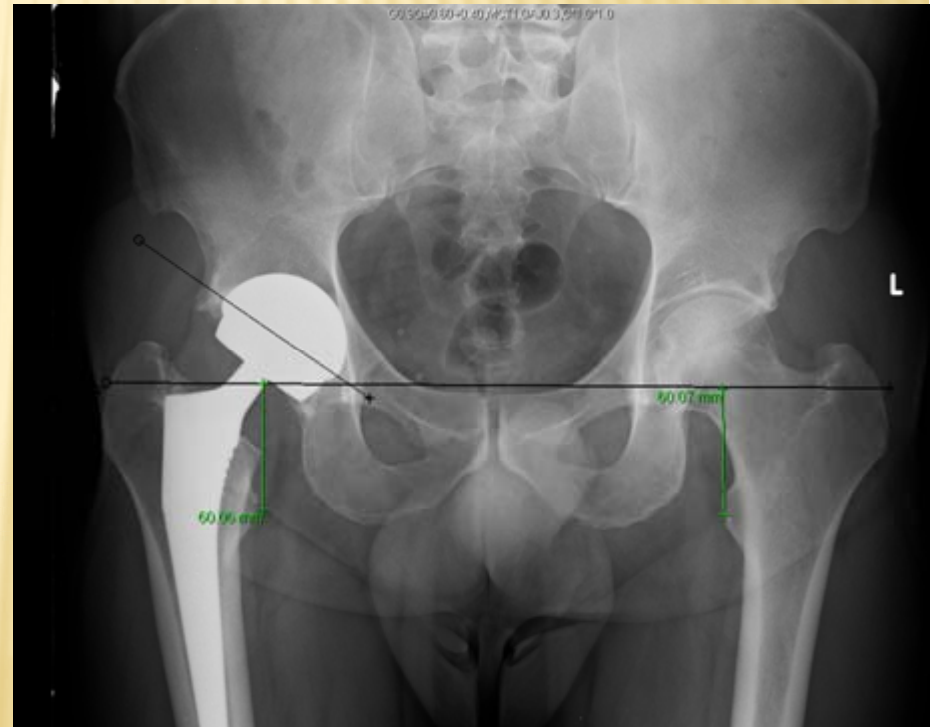
- ✘ Harris hip score:
 - + Average – 83
 - + 72% above 75
- ✘ Quality of life (SF-12)
 - + Mental score – 49 (similar to other THRs*)
 - + Physical score – 41 (lower than other THRs*)
- ✘ Physical exam:
 - + Normal ROM

Abduction	42.33° (8.3)
Adduction	22.01° (5.2)
Flexion	101.57° (9.4)
Internal Rotation	19.67° (11.3)
External Rotation	36.04° (10.9)

*compared with Ostendorf M et al Patient-reported outcome in total hip replacement. *J Bone Joint Surg Br* 2004;86-B:801-8

RESULTS – RADIOGRAPHIC OUTCOMES

- ✘ Inclination angle - 45.6°
(range 33° - 70°)
- ✘ 2% HO



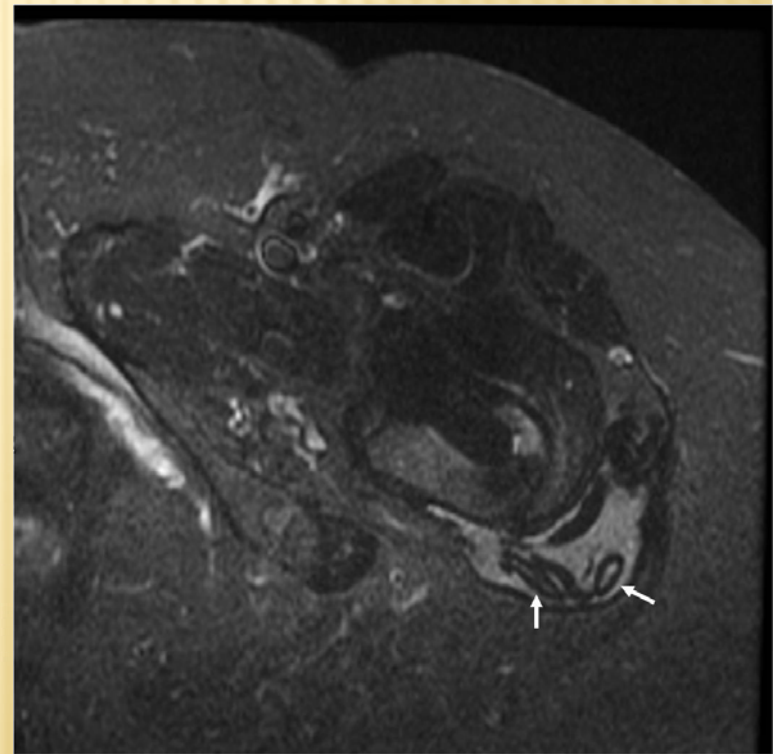
COBALT-CHROMIUM LEVELS

- ✘ 32 Ion tests preformed on symptomatic patients only.
- ✘ Blood ion levels were higher in 50% of patients tested.
- ✘ Cobalt - 31.39 ppb (N<7 ppb)
- ✘ Chromium - 13.32 ppb (N<7 ppb)



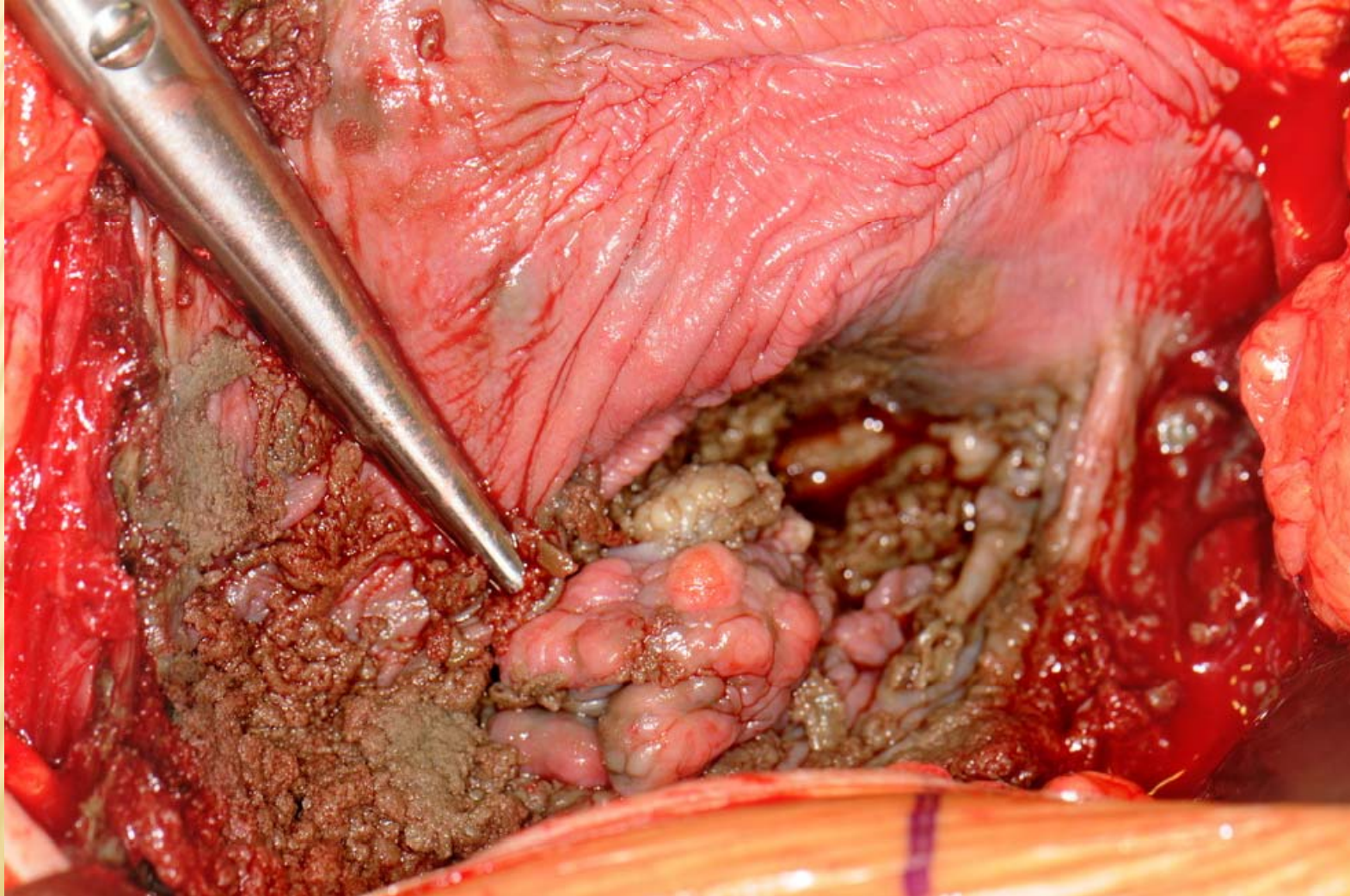
MRI/MARS

- ✘ 14 (11%) hips
- ✘ 8 hips (57%) with pseudotumors (similar to Hart et al. JBJS – 59%)
- ✘ Average size - 156 Cm^3 (range $4.99\text{-}335 \text{ Cm}^3$)



PSEUDOTUMORS...

52FDD010WOK2"



- × 7 revisions (5%)
 - + Osteolysis - 4 patients
 - + Pseudotumor - 2 patients
 - + Snapping hip - 1 patient.



RESULTS - SUMMERY

- ✘ Our cohort had a lower revision rates that previously reported.
- ✘ Good clinical and radiographic results
- ✘ On symptomatic patients
 - + Higher blood ion levels
 - + High proportion of pseudotumors (55%)

HOW CAN WE EXPLAIN BETTER OUTCOMES?

- ✘ short term follow up.
- ✘ The ASR used only in patients with good bone stock.
- ✘ Precision of the positioning of the prosthetic head in the center of rotation.
- ✘ surgeons with high volume of THA

SUMMARY

- ✘ There is now a large body of evidence favors the disuse of large MoM THR – specifically the ASR – XL.
- ✘ The results of our study correlates to other finding in the literature, yet with slightly better outcomes.

Questions?

Thank you !