

Hip Dislocation Following Hip Revision in a Patient with Cobalt Induced Cardiomyopathy and a Large Hip Pseudotumor

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CASE DIAGNOSIS

67-year-old female who presented to the ED with a 3-week history of worsening shortness of breath and was found to have a left ventricular ejection fraction of 25-30%.

CASE DESCRIPTION

- **PMH:** Bilateral total hip arthroplasties (THA) (Right 2008 and Left metal-on-metal (MoM) 2009).
- **CC:** 3-week history of worsening shortness of breath.
- **Work Up:** Workup revealed the presence of a large pericardial effusion. Patient underwent a workup of non-ischemic cardiomyopathy. ECHO performed and showed LVEF of 25-30% with concentric LVH. Cobalt level was found to be elevated to 121. MRI of the left hip demonstrated an 8.9 x 4.1 x 3.0 cm complex soft tissue lesion interpreted as a pseudotumor. After an extensive cardiac workup, she was diagnosed with cobalt-induced cardiomyopathy.
- **Hospital Course:** She had no left hip symptoms at the time of presentation. She underwent a left THA revision. There was no grossly visible wear of the femoral head component however, it was replaced with a tripolar implant to provide improved stability. Her cobalt level normalized but cardiac function did not improve. She underwent a heart transplant 59 days after the revision. 2 days later, routine imaging revealed a left hip dislocation. Subsequently she underwent a left hip arthrotomy with irrigation and debridement and bearing exchange revision left hip. Hospital course complicated by poor po intake, eventually requiring PEG tube placement.

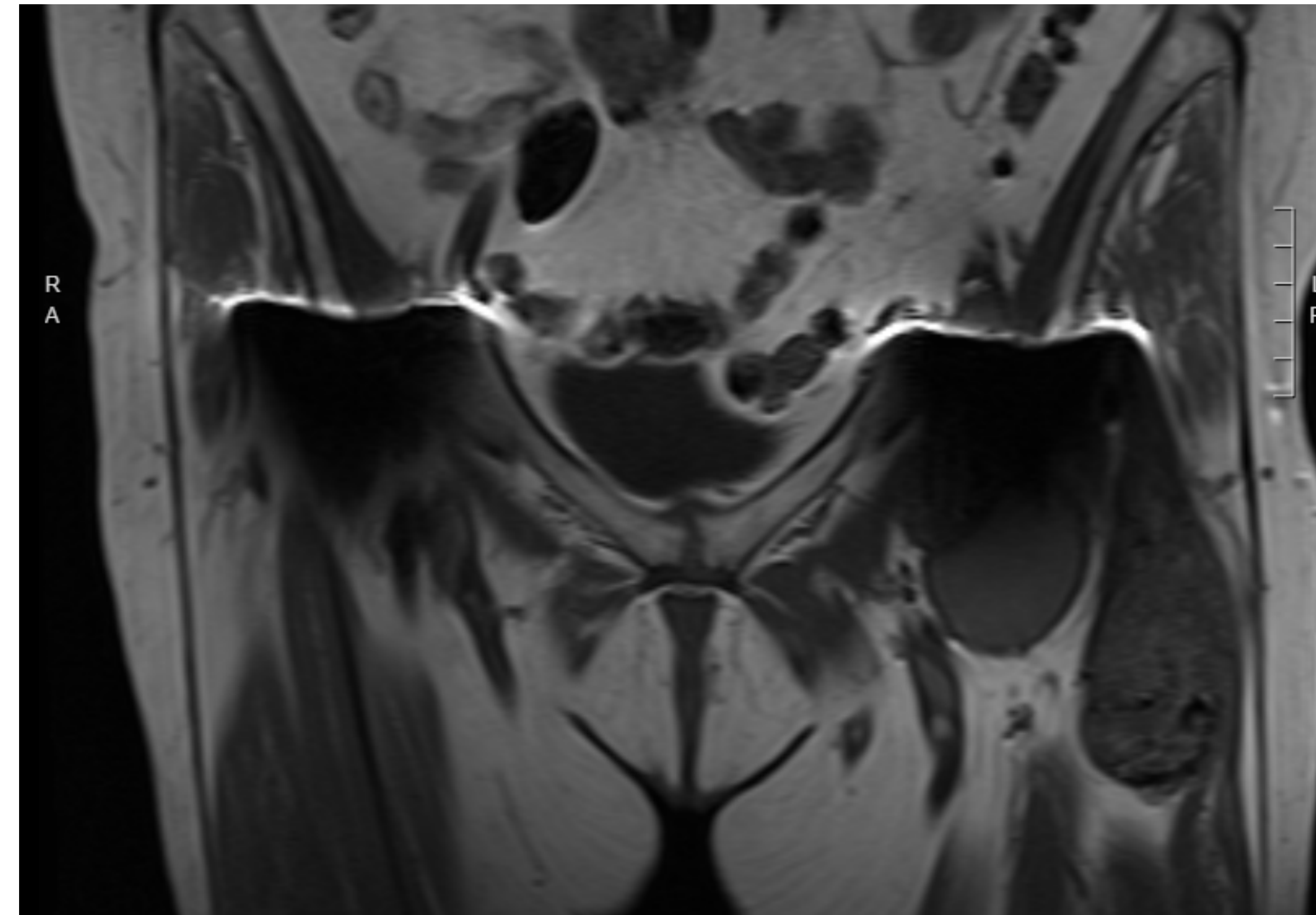


Figure 1: Coronal view of the bilateral hips demonstrating a large pseudotumor adjacent to the L hip.

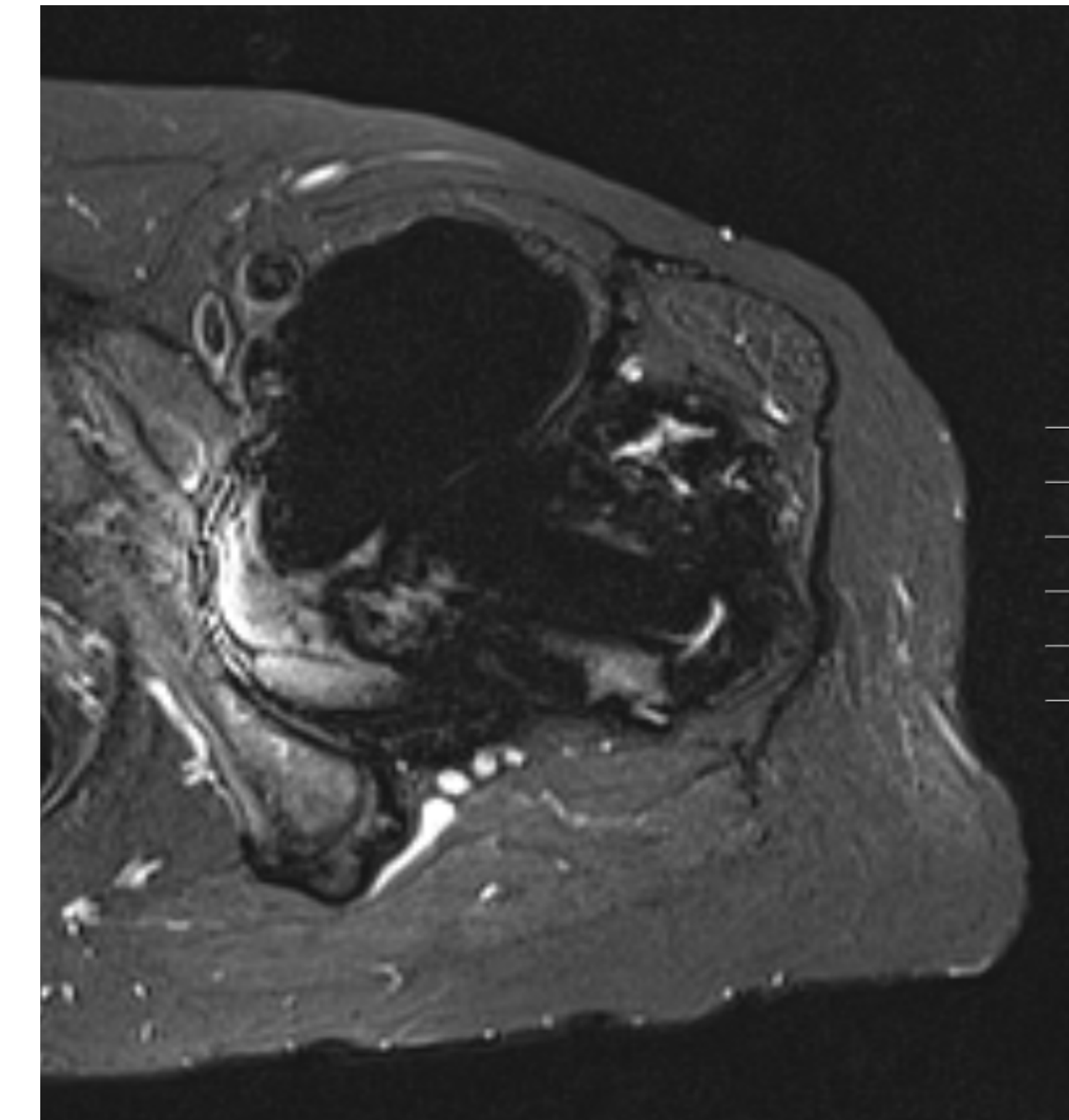


Figure 2: Axial View of the L hip pseudotumor

Cobalt toxicity is a rare complication of MoM THAs and a referral to an orthopedic surgeon should be made for any patient with MoM THAs who are experiencing new or worsening hip symptomatology.

DISCUSSION

- Cobalt release usually results in a local tissue reaction that presents with hip symptoms such as pain, weakness, or clicking.
- This case is atypical because symptomatic cobalt toxicity occurred in the absence of hip symptomatology.
- Systemic signs of cobalt toxicity such as heart failure, thyroid disease, and neurologic symptoms are rare but may occur.
- A pseudotumor is a local reaction seen with MoM wear and may be an indication for revision.
- THA revisions have a higher risk of dislocation.
- We believe that this patient's dislocation was likely multifactorial in the setting of recent THA revision, local tissue damage from pseudotumor, and likely protein catabolic state from illness and poor appetite.

CONCLUSION

- Cobalt toxicity can present with a variety of symptoms and therefore, providers should be familiar with possible symptoms of cobalt toxicity.
- Patients with new or worsening hip symptoms should be referred to an orthopedic surgeon for evaluation.

REFERENCES

- Cheung AC, Banerjee S, Cherian JJ, Wong F, Butany J, Gilbert C, Overgaard C, Syed K, Zywielski MG, Jacobs JJ, Mont MA. Systemic cobalt toxicity from total hip arthroplasties: review of a rare condition Part 1 - history, mechanism, measurements, and pathophysiology. *Bone Joint J.* 2016 Jan;98-B(1):6-13. doi: 10.1302/0301-620X.98B1.36374. PMID: 26733509.