

UCLA

UCLA Department of Medicine Clinical Insights

Title

Pseudotumor as a Complication of a Metal on Metal Hip Implant Leading to Deep Venous Thrombosis

Permalink

<https://escholarship.org/uc/item/5tb5891g>

Journal

UCLA Department of Medicine Clinical Insights, 1(2)

Authors

Sun, Christine

Chau, Alanna

Publication Date

2026-07-10

DOI

10.5070/V6.61316

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Visual Diagnosis Pearl

Pseudotumor as a Complication of a Metal on Metal Hip Implant Leading to Deep Venous Thrombosis

Christine Sun¹, Alanna Chau¹¹ Medicine, University of California, Los Angeles<https://doi.org/10.5070/V6.61316>

UCLA Department of Medicine Clinical Insights

Vol. 1, Issue 2, 2026

A 73-year old woman with past medical history of obesity, bilateral metal on metal (MoM) hip replacements in 2006, and a recent deep venous thrombosis (DVT) diagnosis was admitted to the hospital with recurrent left lower extremity swelling. She was found to have a recurrent DVT despite anticoagulation. She was first diagnosed with a left lower extremity DVT in the popliteal and peroneal veins five months prior after having developed leg swelling. She did not have any known malignancy changes in her physical activity. A hypercoagulable workup was normal. A new duplex ultrasound during this admission revealed that she had developed a large proximal left lower extremity DVT with bulky thrombus in the left external iliac vein and left common femoral vein despite adherence to anticoagulation. Computed tomography imaging of her abdomen and pelvis showed a large 6 x 6 x 7 cm heterogeneous fluid enlargement anterior to the left hip causing venous compression (Figures 1 and 2). With her history of a metal on metal hip implant, this fluid collection was ultimately diagnosed as a pseudotumor due to a metal hypersensitivity reaction. Arthrocentesis ruled out infection. The patient's serum chromium and cobalt levels were elevated at 8.1 ug/L and 24.3 ug/L, respectively, further confirming the diagnosis. She underwent debridement and decompression of the pseudotumor with conversion of the left hip metal on metal implant to a ceramic system. Since discharge, she has been doing well with resolution of her provoked DVT, and she has been taken off anticoagulation.

MoM hip implants were widely used from the 1990s to the early 2000s due to their increased durability and stability.¹⁻⁴ However, MoM implants have since fallen out of favor and have not been placed in patients in the United States since 2016 as studies have found MoM implants are susceptible to high failure rates and adverse reactions.^{3,4} As exemplified by this patient's case, the wear and tear can lead to metallosis and an adverse local tissue reaction with the potential formation of an aseptic, often cystic and solid, mass known as a pseudotumor. Pseudotumor formation in MoM hip implants has a prevalence as high as 60%.³ Pre-

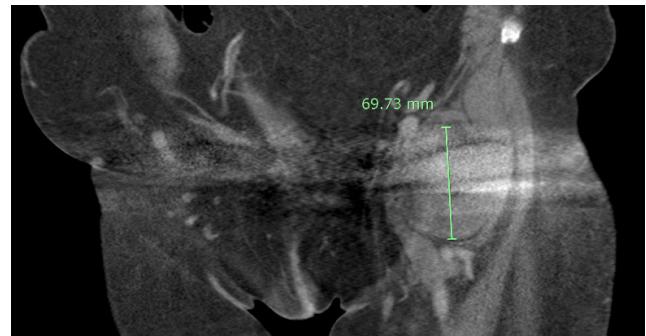


Figure 1. Coronal View, CT imaging of abdomen and pelvis with left pseudotumor measuring 6.9 cm in length.

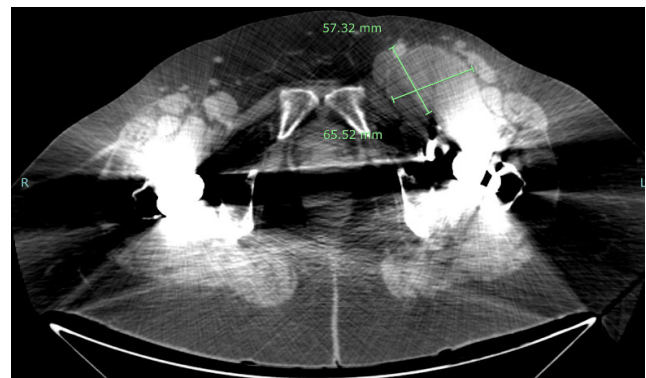


Figure 2. Axial View, CT imaging of abdomen and pelvis with left pseudotumor measuring 5.7 c x 6.5 cm anterior the left MoM hip implant.

sentations can be varied, such as unilateral leg swelling, venous compression causing a deep vein thrombosis and proximal femur invasion, as seen in our patient.³⁻⁵ Treatment involves decompressing the fluid collection, and replacing the metal on metal hip implant with an alternative material such as a ceramic implant.^{4,5}



REFERENCES

1. Cuckler JM. The rationale for metal-on-metal total hip arthroplasty. *Clin Orthop Relat Res*. 2005;441:132-136. doi:[10.1097/01.blo.0000193809.85587.f8](https://doi.org/10.1097/01.blo.0000193809.85587.f8)
2. Triclot P. Metal-on-metal: history, state of the art (2010). *Int Orthop*. 2011;35(2):201-206. doi:[10.1007/s00264-010-1180-8](https://doi.org/10.1007/s00264-010-1180-8)
3. Sabah SA, Mitchell AW, Henckel J, Sandison A, Skinner JA, Hart AJ. Magnetic resonance imaging findings in painful metal-on-metal hips: a prospective study. *J Arthroplasty*. 2011;26(1):71-76. doi:[10.1016/j.arth.2009.11.008](https://doi.org/10.1016/j.arth.2009.11.008)
4. Davis TP. Metal-on-metal hip arthroplasty: a comprehensive review of the current literature. *Cureus*. 2023;15(11):e48238. doi:[10.7759/cureus.48238](https://doi.org/10.7759/cureus.48238)
5. Sagoo NS, Sharma R, Johnson CS, Stephenson K, Aya KL. Pseudotumor in the setting of metal-on-metal total hip arthroplasty. *Cureus*. 2020;12(5):e8255. doi:[10.7759/cureus.8255](https://doi.org/10.7759/cureus.8255)