Woman’s hip replacement disintegrates, causing severe metal poisoning

After seeing the report, the woman’s doctors immediately understood the problem: She had severe cobalt poisoning.

The hallmarks of cobalt poisoning fit the woman’s array of symptoms neatly. Cobalt toxicity causes nerve problems, like her pain, tingling, and numbness; cognitive impairment, like her memory and concentration problems; cardiac problems, like her tachycardia and palpitations; and thyroid dysfunction, explaining why she recently needed to have her thyroid medicine increased.

Cobalt also stabilizes a protein called hypoxia-induced factor, a transcription factor that activates specific genes to spur the production of red blood cells, usually in response to low oxygen levels. But with toxic levels of cobalt, the transcription factor is active without low oxygen levels, leading to abnormally high amounts of hemoglobin-carrying red blood cells—explaining the woman’s high hemoglobin levels.

The one thing that didn’t fit was the rapid progression and severity of her toxicity. In cases of cobalt toxicity linked to hip replacements, the symptoms usually develop over many months, not weeks, as in the woman’s case. The doctors speculated that after the revision was done, there may still have been ceramic microparticles from the previous shattered liner left in the joint. Those particles may have been grinding in the joint, causing mechanical wear on the cobalt-chromium femoral head that released cobalt into the surrounding tissue and bloodstream.

Metallic muscles

The doctors sent the woman to have a second hip revision surgery. When surgeons opened the joint, they immediately understood why her toxicity had progressed so quickly. A pool of grey, metallic fluid filled the joint while the tissues and muscles around the hip were necrotic and stained silver-gray with cobalt. (A picture of what the surgeons saw is here, but be warned that it’s graphic.)

Surgeons extensively cleaned the joint, trying to remove all of the dead, cobalt-infused tissue. They also replaced the cobalt-chromium femoral head with one made of ceramic and replaced the old polyethylene liner with a new polyethylene liner. The same day, doctors started the woman on a chelation therapy to clear the cobalt out of her body.

https://arstechnica.com/health/2026/07/womans-puzzling-decline-turns-out-to-be-cobalt-poisoning-from-hip-replacement/