Paper #37

Comparison of Asymptomatic and Symptomatic ALTR in Patients with Head-Neck Taper Corrosion

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Introduction: Diagnosis of adverse local tissue reactions (ALTR) in metal-on-polyethylene (MoP) total hip arthroplasty (THA) secondary to head-neck taper corrosion is challenging. The purpose of this study was to compare differences between asymptomatic and symptomatic ALTR in an observational cohort, including presentation, metal ion differences, and Metal Artifact Reduction Sequence (MARS) MRI findings.

Methods: We performed a retrospective review of an observational cohort of 492 MoP THA patients at increased risk for developing ALTR. 94 patients underwent revision arthroplasty for ALTR. Patients were stratified into symptomatic and asymptomatic ALTR groups. Presentation, metal ion levels, and imaging findings were compared.

Results: For patients with confirmed ALTR, 41% were asymptomatic. There was a statistically significant difference in the serum chromium levels between symptomatic and asymptomatic ALTR patients (2.2μg/L vs. 3.1 μg/L, p=0.05). There was no statistically significant difference between the serum cobalt levels or MRI findings in these two groups. We observed that extracapsular disease associated with ALTR could be misinterpreted as trochanteric bursitis.

Conclusions: Almost half of the MoP THA ALTR cases identified were asymptomatic. Cobalt levels could not differentiate between symptomatic and asymptomatic pseudotumor formation. Symptomatic and asymptomatic MoP ALTR have similar MARS MRI characteristics. Our findings suggest that it is essential to risk stratify patients who could potentially have ALTR based on implant type, symptoms, ion levels, and MARS MRI.

Notes