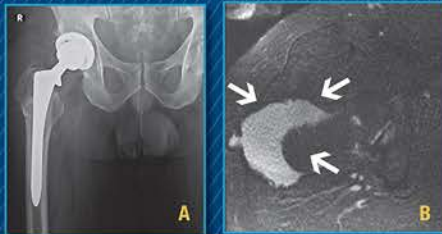


Trunnion Corrosion

Preoperative Evaluation

- History: 54-year-old male with an initial MoM THA revised for ALTR and pseudotumor. Revision THA components included a femoral head exchange with a cobalt chrome head with no titanium sleeve.
- Symptoms: Recurrent hip pain and multiple aspirations of a fluid collection.
- Metal Labs: Co 5.1 ppb; Cr 3.2 ppb
- Infection workup: CRP 1.4 mg/dL; Automated cell count 65,000 cells/mL; Manual cell count 450 cells/mL; 37% PMNs

Preoperative Imaging



A: Radiographs of revision THA for MoM ALTR. MoM bearing was replaced with metal on polyethylene bearing.

B: MARS MRI demonstrated a thick walled cyst with a large fluid collection (arrows).

Intraoperative Findings



Examination of the trunnion revealed corrosion similar to the retrieved implant shown. The trunnion was cleaned with a bovie pad. A head liner exchange with a titanium sleeve, ceramic

head, and polyethylene liner exchange was performed. The patient reported that his hip pain had dissipated since his initial surgery.

Dual Taper Corrosion

Preoperative Evaluation

- History: 63-year-old male with recalled dual modular femoral stem now at 2 years follow-up.
- Symptoms: Increasing general hip pain over one year
- Metal Labs: Co 6.2 ppb; Cr <0.5 ppb
- Infection workup: CRP 0.7 mg/dL; Manual cell count 300 cells/mL.
- Components: Trident 58mm cup; Rejuvenate Stem; 36mm CoCr head

Preoperative Imaging



A: Radiographs demonstrated a neck-stem "dual modular" taper (double arrow) with no bone loss or medial calcar erosions.

B: MARS MRI demonstrated a complex heterogeneous mass (arrows).

Intraoperative Findings



A: Image of trunnion after removal demonstrates corrosion on the taper interface (double arrow).

B: ALTR (pseudotumor) was observed around the capsule (arrows).

Catastrophic Trunnion Failure

Preoperative Evaluation

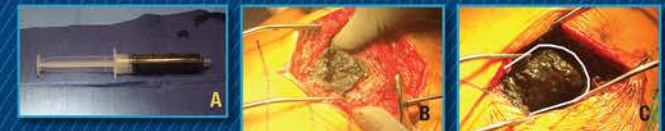
- History: 50-year-old male with Stryker Accolade I at 10 years post-op. No previous reports of pain.
- Symptoms: Presents with acute onset of pain and an inability to walk.
- Metal Labs: Co 7 ppb; Cr 2.5 ppb
- Infection workup: CRP 0.6 mg/dL; Manual cell count unable to be completed secondary to large amounts of metallic debris.
- Components: Metal on polyethylene; Stryker Accolade I 36 +0 mm CoCr head; Trilogy 54 mm cup;

Preoperative Imaging



Radiographs demonstrated a disassociation of the head from the neck of the stem. A large radiotranslucent fluid collection surrounded the proximal femur (arrows). Pieces of metallic debris were observed at the base of the fluid collection (double arrow) that were intraoperatively identified as pieces of the polyethylene liner locking mechanism. Note the appearance of the greater trochanter appearing with increased radiodensity in place of normal bone. Intraoperatively the greater trochanter had exceptionally poor bone stock and was replaced with a black metallic viscous fluid. This increased radiodensity in the greater trochanter was fine metallic debris.

Intraoperative Findings: Implants



A: Intraoperative findings demonstrated a thick black liquid on aspiration of the deep fascia. Manual cell count was unable to be completed from the gross amount of debris, however overall cell count appeared to be negligible.

B: Opening of the fascia revealed friable black tissue with the absence of viable muscle tissue.

C: The greater trochanter (outlined with white line) was a thin cortical shell. Viable bone was replaced with a viscous black substance that had increased radiodensity as compared to bone as seen on radiographs. There was no abductors attached.



After exposure of the implant, the femoral stem was loose, and easily removed.

A: Examination of the trunnion showed gross abrasive wear, likely from loose contact

with the femoral head. The femoral head disassociation from the trunnion was likely chronic as there was extensive damage on the (B) locking mechanism on the acetabular component and (C) liner.