

Case Report

Metallosis caused by post-traumatic damage to polyethylene liner and acetabular cup after primary metal-on-polyethylene THA.

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Introduction

- Post THA metallosis is usually associated with metal on metal bearing surfaces, but rarely seen with other bearing surfaces.

Case Summary

- 70 year M, non diabetic, with metal on polyethylene uncemented THR done 6 yrs ago for sec AVN,
- presented with pain and instability of hip with h/o fall 6 mths back
- Hip movements – reduced, painful.
- well healed scar
- TLC,DLC, ESR & CRP -NAD
- Pelvic Xray- superolateral breach of acetabular cup, metallic fragments arnd the neck and opacity around left hip joint.
- CT Scan-Linear failure, acetabular cup breakage & radio-opacity around hip joint.



- MRI - not done as metal artifact suppression technique not available in our setup.
- scheduled for revision surgery.
- Intraop findings- pseudocapsule with dark metal debris scattered in the soft tissue surrounded by a dark, black fluid and Partially worn out poly liner and acetabular shell.
- Periprosthetic soft tissue which was excised.



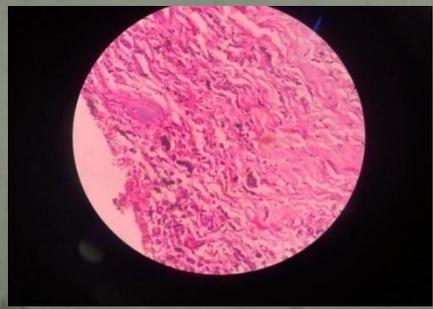
- The cup was revised using a pinnacle revision cup (58mm, titanium alloy) fixed with multiple screws (4 peripheral + 3 inner screws). Ceramic liner(52mm) with ceramic femoral head (34mm) was used.



- Postoperative radiograph showing acetabular revision.

- First post-op day Serum Metal levels (Co, Cr)- normal ruling out systemic metallosis.

- Biopsy - dense fibro-cartilaginous tissue with interspersed brown-black debris with giant cell reaction indicating metallosis.



Discussion

Metallosis: defined as aseptic fibrosis, local necrosis, or loosening of the prosthesis secondary to metallic corrosion and release of wear debris.

It is seen in Metal on metal hip arthroplasty but can rarely be seen in metal on poly hip arthroplasty, without systemic symptoms and signs. In metal on poly bearing surface, if the poly wear leads to metal-on-metal articulation, metallosis may result. This case illustrates the points to keep in mind for early diagnosis and awareness, leading to optimal patient outcome.