

## METALLOSIS IN UNAPT ARTICULATING SURFACES

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### INTRODUCTION:

Metallosis is defined as metal deposition and build-up in surrounding soft tissue, with or without systemic toxicity. It is a known complication in metal on metal total hip arthroplasty but rarely seen in a well-fixed, well- functioning total hip arthroplasty. Metal debris is shed off when metal rub against metal. Body's immunologic response is to treat the debris as a foreign body and shield it off by forming granuloma. It can result in aseptic fibrosis and local necrosis.

### CASE 1:

A 77 years old lady has had a total hip replacement done 20 years ago. Presented to us after a fall and was unable to ambulate. Post fall X- ray showed implant dislocation and failure. Intraoperatively, we found that the metal femoral head has wear through the lining and it is articulating with the acetabulum cup superiorly. There was extensive soft tissue component of metallosis. Tissue histopathological also confirmed by reporting black pigment laden macrophages and multinucleated giant cells.

### CASE 2:

A 50 years old gentleman with bilateral total hip replacement done 15 years ago. Presented with chronic pain over the right hip and X-Ray shows eccentric head sign. Intraoperatively, we found the ceramic acetabular liner broken and the ceramic head has been articulating with the metal acetabulum cup causing wear through the cup

Luckily both patients did not develop systemic manifestation of metal toxicity which can be fatal. They have also received revision of total hip arthroplasty with extensive soft tissue debridement.

### CONCLUSION:

Metallosis can also occur in non metal-on-metal implant. Both reported cases developed metallosis in view of abnormal metal on metal contact due to wear or fracture of articular component. Wear-through and dislodgement of the acetabular liner may be influenced by choice of liner and sterilization method of the liner.

### REFERENCES:

1. Cipriano CA, Issack PS, Beksac B, Della Valle AG, Sculco TP, Salvati EA. Metallosis after metal-on-polyethylene total hip arthroplasty. *Am J Orthop (Belle Mead NJ)* 2008;37(February (2)):E18-E25.  
PMID: [http://pmid:18401490]18401490. [PubMed]
2. Oliveira CA, Candelária IS, Oliveira PB, Figueiredo A, Caseiro-Alves F. Metallosis: A diagnosis not only in patients with metal-on-metal prostheses. *Eur J Radiol Open.* 2014;2:3-6. Published 2014 Nov 28. doi:10.1016/j.ejro.2014.11.