

Background: Mechanical multi directional instability after primary or revision knee arthroplasties, is relatively uncommon. The clinical history is pain getting up from a sitting position, pain on ambulation, feelings of knee instability, and audible clunks, knee swelling and pain that is increasing and starts shortly after either the primary or revision arthroplasty. The X rays usually show a well-fixed and placed prosthesis. The physical exam demonstrates pain on valgus and varus stressing, with audible clunks and no end points to the stressing. There has been no descriptions of mechanical instabilities with primary or revision knee arthroplasties associated with greater than 3-7% incidence of metal ion release and allergies.

Questions: Is multidirectional instability after primary and revision total knees associated increase in metal ion release from the prosthetic components? Is it also associated with metal allergies?

Material and Methods: Two patients were referred for treatment with known metal allergies and mechanical instability after total knee replacement. An additional 18 patients with the clinical syndrome of multi directional instability underwent metal ion and allergy testing prior to any surgical intervention.

Results: Twenty patients with the clinical findings suggestive of multi directional instability in well placed primary or revision knee replacements were analyzed for allergies and metal ion release. Ten out of twenty tested positive for both metal allergies and high ion levels in serum. Two of the patients had bilateral knee involvement.

Conclusion: Fifty % of patients tested with mechanical multi directional instability after primary or revision total tested positive for metal ion release and associated allergies. This may be a cause or an effect of the instability Patient's with mechanical multi directional instability should be tested for metal allergies as this data could result in a different selection of prosthesis used in the revision.