Black Metal Knee in 25 Years Old Total Knee Arthroplasty

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INTRODUCTION:

The literature on total hip arthroplasty has extensive documentation of metallosis, primarily attributed to the use of metal heads and liners. But after a primary total knee arthroplasty (TKA), this problem less common. Even though metallosis is an uncommon condition, it is a well-known aftereffect of total arthroplasties. Since metallosis can present with common postoperative symptoms like pain, swelling, dislocations, and instability, it should be included in the differential diagnosis. In this case, patient presented with symptoms after 25 years total knee arthroplasty.

REPORT:

A 75-year-old women presented with chronic left knee pain and instability, which gradually worsened over the past two years. Notably, she had a history of TKA performed 25 years ago at another center. Despite the absence of recent trauma or constitutional symptoms, her symptoms were concerning, especially considering her history of TKA.Upon examination, the patient demonstrated varus laxity in the affected knee along with limited range of motion. Septic parameters were within normal range. Preoperative X-rays (picture1) revealed significant pathology, including reduced joint space, femoral component subluxation over the tibia component, subsidence of tibia tray into the proximal tibia. Given the findings, revision total knee arthroplasty was deemed necessary. During the surgery using the Attune Revision Knee Systems and sleeve, intraoperative findings included the presence of blackish synovium (picture 2) covering the knee. No evidence of infection was found. There were fractures in the posterior part of the polyethylene and erosion of the posterior part of the tibia tray. Significant bone defects were observed in both the tibia and femur, classified as AORI type 3 after removing the initial implant. Post-operation, the patient's recovery appears to have been satisfactory. She no longer requires a walking frame and can ambulate without crutches. The Knee Society Score of 92 suggests good functional outcomes and satisfaction with the surgery.

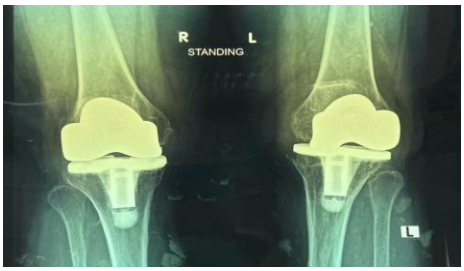

FIGURE 1: Pre-operative x-ray

Figure 2: Intraoperative finding show blackish synovium

Figure 3: Post-operative x-ray

CONCLUSION:

The most typical locations for metallosis descriptions are high-wear joints like the hips and knees. The most common cause of metallic debris in Total knee arthroplasty is polyethylene liner deterioration or failure. Other factors leading to the aforementioned include soft tissue imbalance, trauma, and prosthetic loosening. In our instance, significant metal-on-metal articulation was caused by attrition on the tibial insert. Patients with metallosis are treated with revision surgery and synovectomy. Any surgical procedure should only begin after an infection has been ruled out.

REFERENCES:

1. Viveganantha B, Shah R, Karuppiah AS, Karuppiah SV. Metallosis in a total knee arthroplasty. BMJ Case Rep. 2014 Mar 18; 2014.