

Fig. E-1

Tantalum cup measurement in UmRSA software with use of the beadless edge-detection technique to define the acetabular cup segment for cup-migration measurements. Note that the femoral head cannot be measured with use of edge detection; therefore, wear was not measured in the tantalum cohorts.

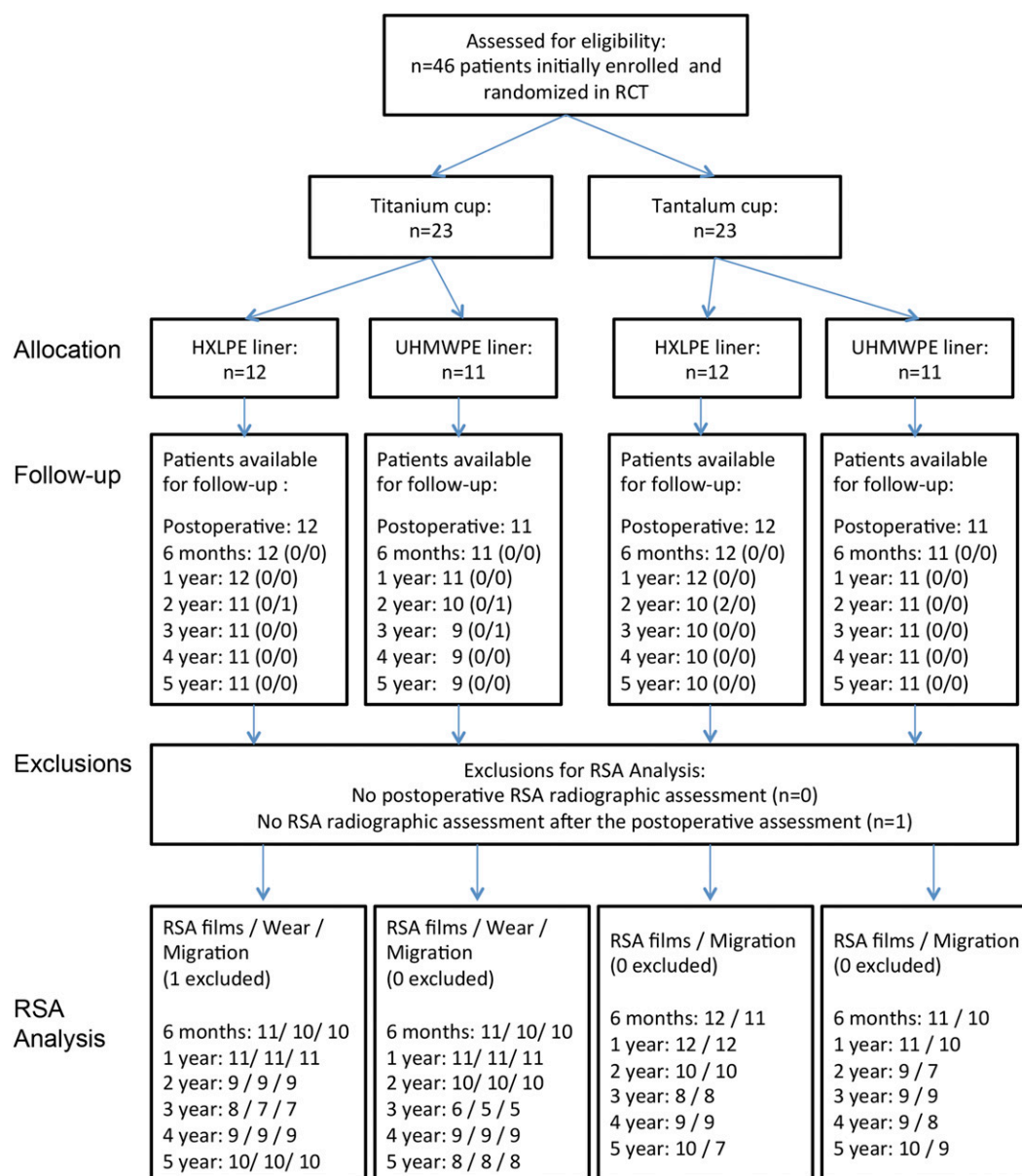


Fig. E-2

The allocation of randomized patients, including deaths, loss to follow-up, and RSA analysis. For follow-up, the numbers in parentheses indicate, since the time of the latest follow-up, the number of patients who had died and the number of patients who had been lost to follow-up. For RSA analysis, titanium cohorts represent the number of patients with RSA radiographs with usable wear analysis and with usable cup migration analysis and tantalum cohorts represent the number of patients with RSA radiographs with usable cup migration analysis. HXLPE = highly cross-linked polyethylene liner and UHMWPE = ultra-high molecular weight polyethylene liner.

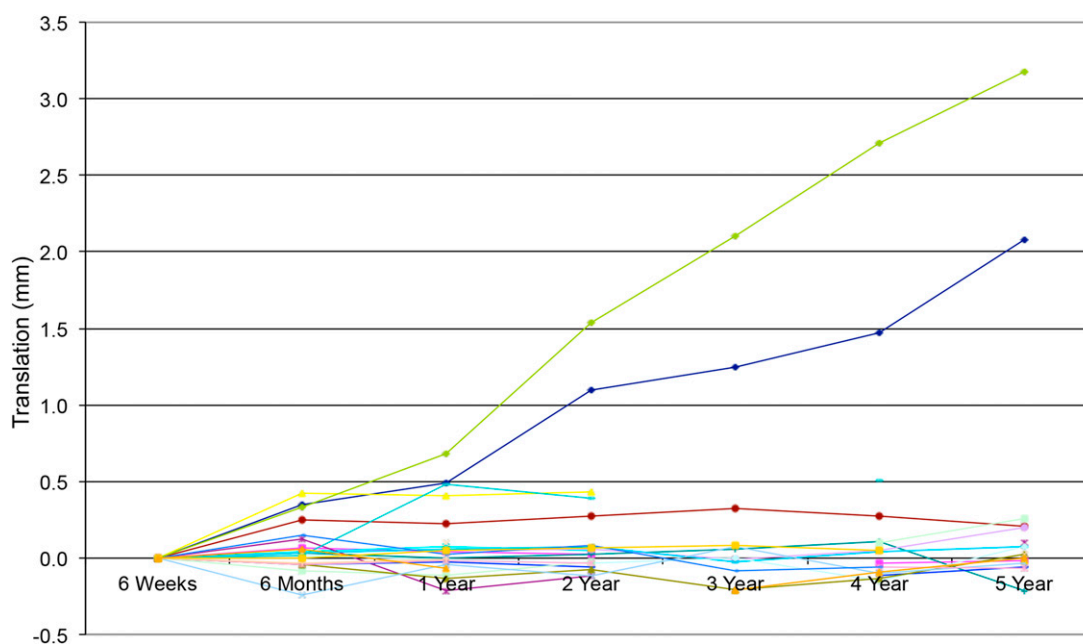


Fig. E-3

Trilogy titanium acetabular cup proximal translation in millimeters for individual patients. There were two patients with outlier measurements.

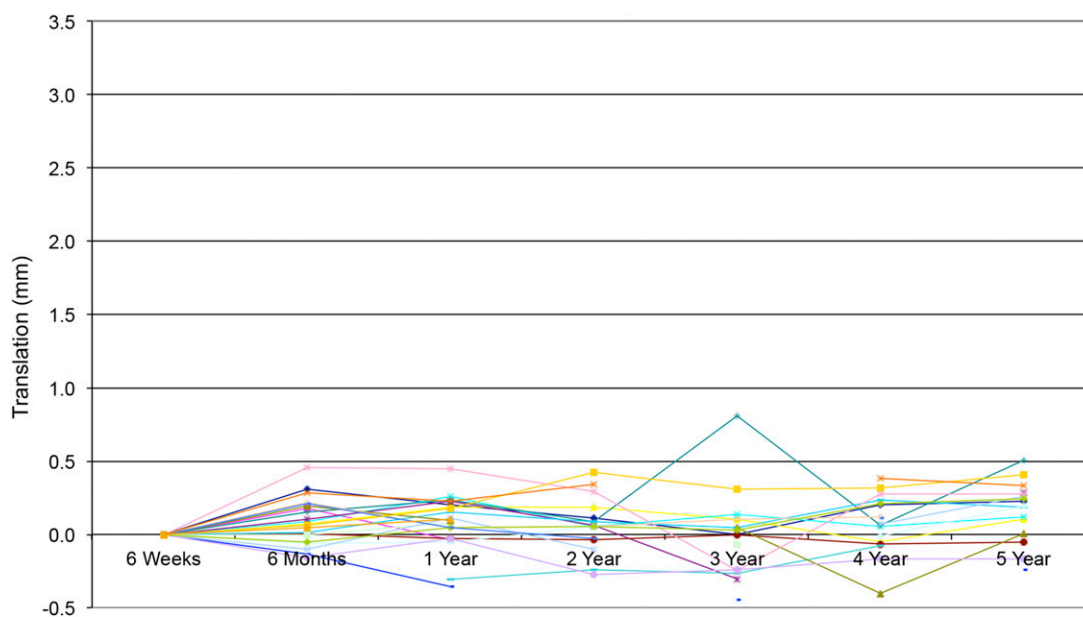


Fig. E-4

Tantalum acetabular cup proximal translation in millimeters for individual patients showing variable small-scale migration patterns. There were no patients with outlier measurements.