



Letter to the Editor

Letter to the Editor: “Adverse Local Tissue Reaction and Osteolysis After Ceramic-on-Ceramic Total Hip Arthroplasty”

The authors imply that the increased aluminium (Al) levels originate from the ceramic head even so it does only show rather typical stripe wear probably resulting from edge loading with the ceramic liner [1] and no major damage (visually estimated from Figure 2a of the paper), but rather metal transfer from the titanium (Ti) back of the ceramic insert or the cup shell itself. The authors attribute the high Ti levels to the cup and screws (quote: “The high levels of titanium in the peri-implant tissue could be due to wear between the titanium acetabular cup and its titanium back insert and from the broken cancellous screw”) but overlook that the titanium-aluminium-vanadium alloy of the cup and screws contains 6% Al and 4% vanadium and does not consist of pure Ti. There is a high probability that the raised Al ion level (as the raised Ti ion level) is originating from debris of the metal alloy elements (and maybe partly from corrosion) and not from any aluminium oxid debris of the ceramic head. The potential of Ti particles for osteolytic reactions was shown already quite a long time ago [2]. Some of the osteolysis could also be due to corrosion products from the interface of the metal part of the liner and the cup shell. To extract Al from aluminium oxid ceramics, hydrofluoric acid and high temperatures are required since aluminium oxid ceramic itself is very stable. In contrast, Al and Ti ions are rather easily released from titanium-aluminium-vanadium metal alloy of which the cup shell and the metal backing of the ceramic insert are manufactured [3]. It does not seem justified to speculate that stripe wear is associated with an increase in Al ion concentration originating from the aluminium oxid ceramic and the observed osteolysis.

Conflicts of interest

M.M. Morlock serves in the Speakers bureau of DePuy Synthes, Kyocera, Merete, Mathys; is a DePuy Synthes consultant; is a member of the Member of the EC of the German Arthroplasty Register EP RD; and receives research support from DePuy Synthes.

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CRedit authorship contribution statement

Michael M. Morlock: Conceptualization, Data curation, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing.

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Michael M. Morlock, PhD*
 Institute of Biomechanics,
 Department of Mechanical Engineering,
 TUHH Hamburg University of Technology,
 Hamburg, Germany

* Corresponding author. Hamburg University of Technology,
 Denickestrasse 15, Hamburg 21073, Germany. Tel.: +49 40 42878
 3385.

E-mail address: morlock@tuhh.de.

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