



## Letter to the editor

## Response to letter to the editor on “Asymptomatic intraprostatic dual mobility cup dislocation with increased metal ion levels”

We thank the authors for their interest and comments on our published report about an asymptomatic intraprostatic dislocation (IPD) in a third-generation dual-mobility cup (DMC) [1].

In our conclusion, we argue against and advocate caution with the use of DMCs in primary cases and young patients, especially because there are no high-quality randomized controlled trials and complications such as described in our case and possible increased (metal) wear can occur unnoticed.

Tigani et al strongly disagree with this statement and provide two possible reasons for our complication. They suggest that incomplete seating of the prosthetic metal head into the mobile polyethylene component could be the possible cause for our IPD. They refer to an article by Guyen et al in 2009, in which 2 IPDs are shown of which one was in a patient who had an incomplete seating [2]. Retrospectively, this was noticeable on an earlier radiograph. There was no evidence of incomplete seating in our case. We used the bearing press according to the manufacturer's manual. The assembly is carried out by the orthopedic surgeon or surgical resident, followed by confirmation of free and complete rotation of the head before implantation. Our earlier radiographs don't suggest an incomplete seating occurred.

The mentioned limitation of the lack of a microscopic and mechanical wear analysis can be understood. We only described the macroscopic wear patterns of the head, liner, and shell. However, because there was absolutely no sign of any polyethylene wear, concluded that this could not be the cause of our IPD.

The other suggested cause could be the use of the DMC “unfriendly neck” of the Lubinus SP II (Link, Hamburg, Germany) present in our patient. Tigani et al state that a smoother, highly polished, and thinner other neck, with a head-neck ratio at least of 2 causes lesser chance of impingement. A poor head-to-neck ratio causes early impingement and wear at the chamfer and could be responsible for the IPD. This was also stated in the article by Guyen et al [2].

In our clinic and in many other clinics in Northern Europe, the Lubinus SP II is used as the standard stem [3]. We have used the combination of Lubinus SP II and DMC often over the last 10 years for revision cases for loosening and instability with no earlier cases of IPD. According to the manufacturer, the Advantage (Biomet, Warsaw, IN) DMC is compatible with all possible stems. The referred article, published by Noyer, describes the relation of the femoral

stem and neck in DMCs [4]. Unfortunately, we could not read this article online. In this article, the researchers show data and conclude that third-generation DMCs combined with polished and round necks have lower revision rates compared with DMCs combined with rough necks [5]. Registry studies should provide more power to support this argument and show a possible benefit of “DMC-friendly” stems.

Our greatest concern with the DMCs is the risk of wear, especially in younger and high-demand patients. For primary cases or isolated revision of acetabular components, we agree that large necks may not be optimal for use with DMC. However, the extra risk of stem revision to improve “neck friendliness,” in a revision case for instability, should also be considered. Despite the optimization of the shape and ring in third-generation DMCs, we still believe this bearing may cause wear at the prosthetic neck and rim. This may add to the risk of elevated serum metal ion levels as shown by multiple studies [6–8] and is in contrast with the statement of no increased serum ion levels in the study referred by Tigani et al because no ion levels were mentioned in this cohort [9].

In conclusion, we strongly emphasize that all implants in our case were used according to the manufacturer's instructions. With the increased use of DMCs, we can expect an increase in known and new complications. As stated in the review of Darrith et al., the dual-mobility articulations are a viable option for primary and revision cases; however, high-quality, prospective, and comparative studies are needed to evaluate the quality of the DMCs [10]. Nam et al. also highlight in their latest study the importance of a continued surveillance to assess for potentially elevated serum metal ion levels [7]. We emphasize the importance of scientific evaluation and discussion about the implants we use, as illustrated by the current discussion. We thank the authors for their comments since this will help us in providing safe and effective treatments for our patients.

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No conflict of interest to declare.

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