



Letter to the editor

Letter to the editor on “Early intraprostatic dislocation in dual-mobility implants: a systematic review”

We read with great interest the article by De Martino et al [1] on early intraprostatic dislocation (IPD) in dual-mobility cup (DMC).

In their discussion, the authors list 3 factors that may be more likely in the early IPD. We know of no evidence supporting the relationship of early IPD with head size of the inner bearing <28 mm or skirted femoral head. On the other hand, we agree that early IPD could be due to a DMC used in an off-label manner to revise an existing total hip arthroplasty, with retention of the femoral stem.

We would stress the different reasons for early and late IPD.

Late IPD, which occurs after 24 months, is mainly related to the wear of retentive rim in the “third joint” [2]. This leads to failure of the capture mechanism between the mobile polyethylene liner and femoral head [3].

This complication depends on head/neck ratio and also the shape and the roughness of the neck are involved [4]. Femoral necks with an unpolished surface and large diameters should be avoided. For similar reasons, care should be taken to ensure that the base of the Morse taper is fully covered by the femoral head, avoiding skirted femoral heads that can cause impingement with the polyethylene liner.

Regarding early IPD, which is rarely described by European authors, it may be considered as a mechanical failure of the retentive rim. Since there is not enough time for the wear process, we think it is due to the specific design of the insert with its capture action.

As described by Aslanian [5], the liner's features of different DMC depend on four main factors: first, the diameter and relative position of the retentive ring to limit any harmful contact with the femoral stem; second, the over-covering surface of the head to create an intraprostatic jump distance; third, the presence of protective beveled edge (chamfers) in contact areas with the prosthetic neck; and fourth, the elasticity of the polyethylene to allow the passage of the head through the retention rim without

its plastic deformation leading to the failure of the capture mechanism.

For this reason, it would be helpful if these technical data were provided by the manufacturers. This becomes fundamental above all if a DMC is used in an off-label manner to revise an existing total hip arthroplasty with retention of the femoral stem.

Finally, De Martino reported that 6 of 15 early IPD (40%) after an attempt of close reduction of the large articulation occurred with modular dual mobility.

As previously published by Plummer et al [6], we want to stress that the head diameter and the jump distance are actually reduced by this modularity.

We appreciate the authors for attempting to answer an important and controversial topic with a systematic review and for the quality and the originality of their study.

References

- [1] De Martino I, D'Apolito R, Waddell BS, et al. Early intraprostatic dislocation in dual-mobility implants: a systematic review. *Arthroplast Today* 2017;3(3): 197.
- [2] Noyer D. La troisième articulation des prothèses de hanche à double mobilité. *Maîtrise Orthopédique* 2003;121:20.
- [3] Lecuire F, Benareau J, Rubini J, et al. Intra-prosthetic dislocation of the Bousquet dual mobility socket. *Rev Chir Orthop Reparatrice Appar Mot* 2004;90: 249.
- [4] Vielpeau C, Lebel B, Ardouin L, et al. The dual mobility socket concept : experience with 668 cases. *Int Orthop* 2011;35:225.
- [5] Aslanian T. All dual mobility cups are not the same. *Int Orthop* 2017;41: 573.
- [6] Plummer DR, Haughom BD, Della Valle CJ. Dual mobility in total hip arthroplasty. *Orthop Clin North Am* 2014;45(1):1.

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