



Letter to the editor

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

In reply:

We thank the Editor-in-Chief for the opportunity to respond to the Letter to the Editor by (Domenico et al [1]). The following are the responses to the main queries in the letter.

Intraprostatic dislocation (IPD) is a unique failure mechanism linked to dual-mobility (DM)-bearing designs and may occur any time after the index procedure. IPDs were described and classified in the European literature as a relatively late dislocation with a mean time to failure of 8–11 years after surgery [1–5] with conventional polyethylene (PE) liners. However, early IPDs have been reportedly affecting contemporary designs. The aim of our systematic review was to analyze the risk factors of early IPD in primary and revision total hip arthroplasty with contemporary DM designs [6]. The etiology of late IPD is known and already reported [1–5,7] and therefore was not discussed.

Speculation exists regarding the implant-related risk factors for early IPD, including pairing of femoral heads and PE liners from different manufacturers, 22.2 mm femoral heads, and skirted femoral heads [8–10]. We did not mention these as risk factors for early IPD. Instead we used the findings of our literature review to make some general consideration about early IPD and to clarify some common beliefs.

From the available literature that was reviewed, there were no cases of early IPD occurring in patients with a femoral head smaller than 28 mm or in patients in which the DM component was used in conjunction with a skirted femoral head. Mixing DM components with different manufacturer components is an off-label practice and unsupported by both the US Food and Drug Administration and manufacturers, but it is commonly performed by surgeons to reduce complications associated with removal of well-fixed components. According to our findings, of the 19 reported cases only 6 reported cases (32%) of early IPD occurred in patients with a mismatch between femoral head and PE liner manufacturers, whereas 9 cases (47%) occurred in patients with no mismatch and in 4 cases (21%) was not specified. We did not make any statement about the mismatch as a risk factor [6].

From isolated case reports, it is difficult to make conclusions with any great confidence regarding the association between DM implant features and the risk of early IPD because denominator

values for each feature are unknown. The only statement that we made was the high likelihood of iatrogenic etiology, whereby dissociation of the head and liner occurs during a closed reduction attempt of a large articulation dislocation. This mechanism accounted for the 79% (15 of 19) of the early IPD cases.

The assumption that early IPD can be considered as a mechanical failure of the retentive rim is not supported from our data. Only 4 reported cases (21%) had no history of previous attempted closed reduction. Among them, the IPDs were due to PE wear caused by femoral neck impingement [10], poor impaction of the PE insert over the femoral head [11], vertical cup placement (abduction angle 67°) [12]. In one case was not clarified [13]. For this reason, it is very difficult to support the author's assumption due to the absence of evidence.

We acknowledge that head diameter and jump distance are reduced in modular DM cups compared with the monoblock version with the same outer diameter. However, since the dislocation occurred equally in monoblock and modular DM cups, we did not make any statement about it.

According to our data, in the setting of large articulation dislocations, precautions during closed reduction should be taken to prevent iatrogenic IPD [6].

We hope that these responses are informative, and we appreciate the writers' queries concerning the article.

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