Correspondence

Removal of restrictions following primary THA with posterolateral approach does not increase the risk of early dislocation

Sir—We read with great interest the article in this issue of Acta Orthopedica by Gromov et al. (2015). We want to congratulate the authors on their very interesting and clinically relevant paper and we would like to make some comments.

Firstly, as stated by Gromov et al. the reported overall incidence rates of dislocation range from less than 1% to 15%. However, with an anterolateral approach dislocation rate ranged from 0% to 0.6% (Ververeli et al. 2009, Talbot et al. 2012). It is debatable whether the higher dislocation rate, around 3% within 3 months, found by Gromov et al. can be explained solely by the type of surgical approach, since a meta-analysis (Kwon et al. 2006) revealed similar dislocation rates associated for the anterolateral, direct lateral, and posterior approaches with soft tissue repair (0.70%, 0.43%, and 1.0%).

Secondly, the authors made a distinction between avoidable and unavoidable dislocations and state that the risk of dislocations that could possibly have been avoided if mobilization restrictions had been observed was similar in both groups, indicating that dislocations due to undesirable movement do occur despite having restrictions. When looking into detail, among the unavoidable dislocations are the so-called "unknown mechanisms" and 'other' (getting dressed, moving in bed, lifting a leg) (Table 4). However, in our opinion one could also state that these might as well have to be added to the 'avoidable' dislocation group. When doings so, the actual number of avoidable dislocations would triple which in turn could have major impact on the results and conclusions drawn.

Thirdly, in order to draw valid conclusions from studies investigating the impact of (reduced) restrictions after hip replacement it is important to objectify the compliance of patients with prescribed or removed restrictions. Without knowledge about compliance with reduced restrictions in the different study arms it is difficult to relate dislocation rates to effectiveness of postoperative protocols as postulated in the current study.

Finally, in our view the use of patient reported outcomes on perceived burden in terms of psychological distress (anxiety, mental preoccupation) and functional limitations of postoperative restrictions during the rehabilitation is desirable. In that way we will be able to know which restrictions have the highest impact on patients, which restrictions can safely be abandoned and which strategies achieve the highest patient compliance.

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Sir—We thank Drs Peters, Vochteloo and Huis in 't Veld for their interest and comments.

We agree that dislocation rates reported in our study are higher that the 1.0% dislocation rate reported by Kwon et al. (2006). Different techniques in posterior repair, different postoperative protocols, different patient groups as well as different way to identify patients with dislocations might be part of the explanation. The 1.0% is based on 4 studies totaling 2,084 patients. Dixon et al. (2004) used a slightly different posterior repair compared to the one used in our institution and only allows partial weight bearing for 6 weeks postoperatively. Van Stralen et al.'s (2003) study includes both cemented and cementless arthroplasty and actually reports a similar dislocation rate as reported in our paper (2.9%) in patients receiving cementless arthroplasty. Weeden et al.'s (2003) study describe patients that were operated by a single surgeon, and who were on average 6 years younger than the patients in our study, which partially explains the lower dislocations rates reported. Wright et al. (2004) investigated only 37 patients operated using a mini-approach, which is not comparable to the approach used in our institution. Finally, none of the 4 above-mentioned studies specify how dislocations were identified and verified. It seems that Van Stralen et al. (2003) and Weeden et al. (2003) retrospectively identified dislocations using institutional patient charts, therefore not including dislocations that were reduced at other institutions resulting in potential under-reporting. In our study, we used the Danish National Patient Registry (DNPR), which contains data on all admissions nationwide, thus allowing for complete identification of all dislocations. We believe that all of the abovementioned reasons contribute to higher dislocation rates reported in our study compared to the dislocation rates reported by Kwon et al (2006). Further on, our dislocations

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rates are similar to another study on dislocations using DNPR data by Jørgensen et al. (2014).

As for the second point made, we agree that it is debatable whether dislocations for unknown reasons should be considered "unavoidable". Our reasoning was that if you cannot identify the reason for dislocations, you cannot instruct the patients in protective behavior to avoid this potentially undesirable movement. "Other" mechanisms of dislocations in our study included getting dressed, moving in bed, getting out of the car and lifting a leg. While we agree that dislocation when lifting a leg (n=1), could be considered avoidable), we do not believe that is possible to prevent patients from moving in bed, getting dressed or getting in or out of a vehicle. These are minimum functional requirements after primary THA and it would seem unacceptable not to perform these basic functions. Therefore we do not believe they can be considered avoidable. It is of course possible to hypothesize, that patients that were mobilized with functional restrictions, would generally exhibit more careful behavior after discharge, which would decrease the number of dislocations that were classified as "unavoidable" in our study.

Thirdly, we absolutely agree with Peters et al., that compliance is a major issue when investigating the role of functional restrictions. This is supported by Peak et al. (2005), who found only 75% complete compliance rate to all restrictions following primary THA. As we do not know compliance in our patients, we cannot draw any conclusions on the role that actual restrictions have on dislocations rates. However, the purpose of our study was to investigate whether or not removal of restrictions from the postoperative mobilization protocol would affect the risk of dislocations, and patient compliance would therefore not interfere with our conclusions.

Dr. Peters et al. point out that the viewing of all restrictions in our mobilization protocol in total is a limitation, as we are not able to differentiate between different types of restrictions. However, no study has ever shown any effect of restrictions and hence the widespread use of restrictions is an undocumented tradition (Husted et al. 2014). Few studies have investigated the role of postoperative restrictions following primary THA in respect to patient reported outcomes and satisfaction (Peak et al. 2005, Mikkelsen et al. 2014). In our opinion, restrictions may only impair early functional recovery resulting in unnecessary anxiety and reduced satisfaction, which is supported by a recent review (van der Weegen et al. 2015) and so far, published studies have not found increased dislocation associated with any approach. We are happy that our study contributes to the debate on optimal postoperative patient care, which will hopefully encourage surgeons and medical professionals to follow the evidence-based approach and seek further knowledge in areas that require further investigation rather than following well-established traditions that are not necessarily supported by evidence (Husted et al. 2014).

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