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Letters to the Editor
Risk factors for early dislocation after total hip arthroplasty: a matched case-control study

To the Editor:

We read with interest the article by Dudda et al.[1] The authors concluded that "surgical approach, combined cup and stem positioning, and femoral head size were significant risk factors for dislocation. We have concerns with the evidence used to draw these conclusions. The data were taken from 1978 to 2004 representing a large time frame that operative techniques, implant designs, and postoperative management is subject to considerable change. It would have been useful to know exactly when the majority of dislocations occurred. When the posterior approach was first used, it was not a routine to repair the posterior capsule and external rotators, and this may account for the higher dislocation rates. However, in current practice entailing better techniques for posterior repair and better access to the acetabulum and the preservation of the hip abductors, the posterior approach has become favourable. In fact, one review indicated no significant difference in the dislocation rate between posterior and lateral approaches.[2] Therefore, with no mention of when the reported dislocations ensued and whether the external rotators were repaired, the conclusion that this surgical approach is a risk factor is outdated.

Many confounding factors that could have contributed to the differences in dislocation rates were not considered. The data encompassed many different operative techniques and postoperative rehabilitation regimens. Yet whether cemented or uncemented implants were used was not mentioned, and many of the 26 different cup types and 59 different stems that were used may have been outdated. Although it is difficult to eliminate all confounding factors while trying to achieve a suitable sample size, these key variables should have been taken into account when interpreting the results.

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2. Jolles BM, Bogoch ER. Posterior versus lateral surgical approach for total hip arthroplasty in adults with osteoarthritis. Cochrane Database Syst Rev 2006;3:CD003828.

Authors' reply

In our study, most dislocations occurred in the late 1980s (87, 88, 89). We should have stressed that the findings apply to the surgical techniques used at that time. Regarding the review mentioned,[1] the conclusion was that "The quality and quantity of information... to date are insufficient to make any firm conclusions..." which differs from "no significant difference in the dislocation rate between posterior and lateral approaches" as paraphrased. The confounding factors mentioned were eliminated as much as possible, which is an inherent characteristic of a matched case control study. We matched by hospital (i.e. surgical technique, rehabilitation regimen,

etc), cup design, patient age, gender, and primary diagnosis. Hence these characteristics were the same in the cases and controls. Other factors can certainly also have an influence on the dislocation risks and we acknowledged that we could not control for them. Therefore, the evidence of such a study is level III only. Most modern implant registries with minimal datasets do not record the relevant information. Our findings could be a valuable source of information for future researches.

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Serum levels of bone turnover markers following total joint arthroplasty

To the Editor:
I read with interest the article by Kenanidis et al.[1] They concluded that "bone turnover markers change following arthroplasties." The laboratory analysis has to be discussed. There was no quality control on the laboratory analysis. Moreover, intra- and inter-assay coefficients of variation were rather high. The accuracy of the bone marker evaluation is an important concern, which has further implications for laboratory results.[2]

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2. Dessauer A. Analytical requirements for biochemical bone marker assays. Scand J Clin Lab Invest Suppl 1997;227:84–9.

Authors' reply
Bone turnover markers have been incorporated into research and clinical studies for some time, but not in everyday practice or in most laboratories. Improvements in inter-laboratory comparability and minimisation of influences owing to assay differences may facilitate their clinical use. The lower the coefficients of variation of a test, the better the quality, reliability, and efficiency of the laboratory.[1] In our study, all laboratory tests were performed according to the manufacturers' instructions. The serum level of osteoprotegerin was assayed by a commercial ELISA sandwich (DRG International, USA). An enzyme immunoassay (Demeditec Diagnostics GmbH, Kiel, Germany) was used for the detection of soluble, non-complexed human RANKL directly in biological fluids. Enzyme immunoassay (Ostase BAP EIA, Immunodiagnostic Systems IDS, Boldon, UK) was

used for the quantitative measurement of bone specific alkaline phosphatase. Osteocalcin was assessed by radioimmunoassay (Myria RIA kit, Technogenetics, Milan, Italy). Moreover, all samples from the same subject were evaluated in duplicate in the same assay. The accuracy of bone marker evaluation is certainly an important concern. Nonetheless, this study was experimental and the course of bone markers following arthroplasty was evaluated with minimal assay influences.

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