

Correspondence

Results of 189 wrist replacements

Sir—The article “Results of 189 wrist replacements. A report from the Norwegian Arthroplasty Register” by Krukhaug et al. (2011) seems to represent a new trend in the reports of register studies. The advantage of arthroplasty register studies is the comparison of a very high number of implants operated in several clinics and thus, false results from inferior surgical skill and other nonprosthetic factors may be minimized. In the register study by Krukhaug et al. a comparison of three different wrist prostheses with 23, 76, and 90 (84) patients in each group has been carried out (the smallest group includes three different types of a developing prosthesis). This number is far beyond the lowest number of implants reported by any arthroplasty register in the literature. Only 52% of the wrist replacements performed in Norway in the same period was reported to the Arthroplasty Register compared to 99% for knee replacements according to the Norwegian Patient Register.

This underreporting of wrist replacements was published by the register already in 2006 (Espeshaug et al. 2006). Therefore, it should have been possible for the register to find out what the reason for the discrepancy could be. The authors explain the reason for the underreporting to be that the Norwegian Arthroplasty Register is not so well established among wrist surgeons, but they fail to discuss what importance underreporting has for the results. According to our opinion the low number of patients and the incompleteness of data make the results in the article unreliable. We also mean that studies on so small patient groups as in this article should be carried out in clinical investigations, eventually in cooperation with the arthroplasty register.

Compared to the hip the wrist is a complicated joint, and the results after prosthetic replacement is supposed to be inferior. On the other hand the salvage procedure in the wrist is an arthrodesis (Carlson and Simmons 1998), which is not possible in the hip after a failed prosthesis. Krukhaug et al. found a prosthetic survival of 80%, and they conclude that there is no support for widespread implementation of the procedure. Without any documentation in the article, they also claim that the function with prosthesis is not substantially better than with an arthrodesis. We do not agree in this opinion, and we cannot see that the article documents anything about the wrist function after neither a prosthesis nor an arthrodesis. Much higher quality-adjusted life-years are estimated for the patients with an arthroplasty compared to arthrodesis (Cavaliere et al. 2009). Higher quality-adjusted life-years were even estimated

in the theoretical extreme situation with all major complications occurring in the arthroplasty patients and no major complications occurring in fused patients. Some patients with a fused wrist have appreciable difficulties with activities of daily living (Sauerbier et al. 2000). Most of the patients with a ruined wrist will prefer mobility in the wrist with a prosthesis when the alternative is an arthrodesis although they know that a failed prosthesis will eventually lead to a stiff wrist (Adey et al. 2005).

Wrist prostheses have so far been restricted to low demand rheumatoid patients. If the results of this register study are sustainable, Krukhaug et al. are the first authors to document that the outcome of wrist prosthesis in a high demand non rheumatoid group of patients is similar to that of the rheumatoid group. They offer no comment on this finding in the discussion, and there is no explanation why the non rheumatoid patients in the Biax group were excluded from the study. The only increased revision risk the authors found (female), is not discussed although this is different from prosthetic replacements in other joints.

Two clinics are responsible for 75% of the reported wrist replacements in the Norwegian Arthroplasty Register. As Krukhaug et al. know, both clinics have their own on-going follow-up studies on these patients. Cooperation with clinics which have experience with wrist replacement and wrist arthrodesis would have improved the quality of the article.

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Sir—We thank Astor Reigstad, who we understand is the inventor of the Elos and the Gibbon wrist prostheses, and Jan Mjørud for their interest in our article. We excuse the small numbers of wrist prostheses in the article (Krukhaug et al. 2011). The study included all wrist prostheses reported to the register since 1994 and it is probably the largest study on wrist prostheses in the literature. In 2009 the register received a

letter from one of the users of the Elos and Gibbon prostheses. The letter was a response to an oral presentation of the study at the annual meeting at the Norwegian Orthopaedic Society, and the matter of publication of this study was therefore brought to the Board of the Norwegian Arthroplasty Register. The Board decided in 2010 to publish the article in spite of the low numbers of implants.

In your letter you argue that only 52% of the wrist replacements performed in Norway has been reported to the Arthroplasty Register. The 52% completeness was found when we compared our numbers with the Norwegian Patient Register (NPR) where the NOMESCO 2006 coding system has been used. As explained more properly in the article, the NOMESCO coding system cannot specify if the prosthesis has been inserted in the radio-carpal joint or in other joints in the carpus or hand. Thus, the NPR data most probably includes many other implants than in the radio-carpal joint.

We are of course aware of the problems of underreporting. Especially if there is more underreporting of revisions of certain prostheses brands, the results might be unreliable. But we believe that it is unlikely that underreporting could explain that the results generally were inferior to results of hip and knee prostheses.

We agree with your view that a wrist with a well functioning prosthesis probably is better than a fused wrist. But the literature is scarce, and the long term results for wrist prostheses are unknown. And we have found no studies comparing secondary wrist fusion after failed prostheses, with the results of primary wrist fusion.

We do know that the majority of wrist prostheses in our study were operated by the most experienced hand surgeons in Norway, and based on that fact and on the results in general, we do not believe that wrist prostheses should be taken into wide-spread use by the average orthopedic surgeon.

In register studies, it is a flaw that the principal and often only outcome is prosthesis survival, and we are looking forward to results from the studies on wrist prostheses in your

clinics. To get a better impression of state of the art in surgery on damaged wrist joints we believe that it would be most interesting to see quality of life measures, pain and functional results, and reoperations rates in patients with wrist prostheses compared to primary wrist fusion. It is also important to compare secondary wrist fusion after failed wrist prosthesis and primary wrist fusion.

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