



Birmingham Hip Resurfacing – Patient reported outcomes pre and post ‘Metal-on-Metal’ media attention

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We have investigated whether patient reported outcomes provided by patients with Birmingham Hip Resurfacing (BHR) changed after negative media coverage of metal-on-metal (MOM) hip replacement. We also investigated whether patients whose procedures were performed by a designer surgeon behaved differently to those performed elsewhere. 1178 consecutive BHR procedures performed between January 2002 and December 2006, by one of the designer surgeons in his private practice, were reviewed. We also reviewed 402 BHRs undertaken by two non-designer surgeons in both their NHS and private practice. 150 of the latter cohort were undertaken at an NHS hospital and 252 at an independent private hospital. All patients had annual Oxford Hip Scores (OHS) collected. We chose 2007 as pre-“media attention” and compared scores from this year against subsequent years. We found no clinically significant change in OHS between 2007 and subsequent years, at all centres. We conclude that negative media reporting does not appear to have had an impact on patients’ perceived outcome after BHR. In consequence, patients who have undergone this type of hip resurfacing and show deterioration should be investigated.

Keyword : hip surfacing.

INTRODUCTION

Since 2007 concerns have been raised about the safety and long-term results of metal-on-metal

(MOM) implants. Despite an ODEP 10A rating for the Birmingham Hip Resurfacing (BHR), the number of hip resurfacing procedures performed in the UK fell from a peak of 6.678 in 2007 to 1.801 in 2011 (2). This was on a background of an increasing number of primary total hip replacements.

Over the last five years, problems associated with MOM hip replacement have been widely reported by the British media. A few years earlier, the same popular print were lauding MOM resurfacing, rarely touching on potential limitations or lack of long-term outcome data for the procedure (8). It is well known that the media can influence the public’s perception on medical treatment (2,12) and it has been suggested that a driver for the rapid increase in the

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use of the hip resurfacing was positive reports in popular print. Conversely, the number of MOM hip resurfacing procedures performed began to decline before the public were exposed to increasing negative media publicity. Malviya *et al* has suggested that the initial decrease was due to a change in surgeon preference consequent to published evidence in the scientific literature (8).

We have reviewed the patient reported outcome measures (PROMs) data obtained from patients who underwent BHR to investigate whether the negative reporting on hip resurfacing by the media affected the reported outcomes of patients who had undergone this procedure. It should be remembered that many patients, particularly in the private sector, actively sought out a resurfacing procedure over other primary hip replacements in the belief that it was not a total hip replacement. As has been seen with other treatments (12), it may be that the psychological investment into the procedure was protective against the subsequent negative reports. The aim of this study was to investigate whether patient outcome measures changed following the negative media attention. We also investigated whether patients who had their procedure undertaken by the designer surgeon, whose practice is purely private, were affected differently to patients whose procedures were performed elsewhere both in the public and private sectors.

MATERIALS AND METHODS

Three patient groups were reviewed. The first group ('Designer group') comprised consecutive Birmingham Hip Resurfacing (BHR, Midland Medical Technologies, Birmingham) procedures performed between January 2002 and December 2006 by the designer surgeon. The second group and third groups comprised successive BHRs undertaken by two non-designer surgeons in both their public and private sector practices between January 1999 and December 2006. ('NHS group' and 'Private group'). The two non-designer surgeons were working at the same NHS hospital and the same private hospital. Both non-designer surgeons had acquired several years experience with hip resurfacing prior to the start of the study period.

A pre-operative Oxford hip score was collected for all patients. All patients were contacted, by post, on a yearly

basis and asked to fill in a questionnaire, which included a repeat Oxford hip score. All information from the designer surgeon was collected and stored by the outcome team at St Helier hospital, Carshalton, Surrey (St Helier). Responses from NHS patients of the non-designer surgeons was collected and stored by a research team at St Helier. Responses from private patients of the non-designer surgeons was collected by the team running the outcome programme at St Anthony's hospital, North Cheam, Surrey (St Anthony's).

In a review of UK print media by Malviya *et al* (8) in 2012 on the subject of hip resurfacing it was found that until late 2007 the majority of press reports on resurfacing were positive. From 2008 media reports began to focus on the negative aspects including high revision rates, metal ion levels and the risk of pseudotumours. We have therefore chosen to take 2007 as pre-"media attention" and will compare patient scores from this year to scores from 2008 onwards.

The paired Student's t-test was used to compare scores between the years, and the un-paired t-test for comparison between the groups.

RESULTS

The Designer group comprised 1178 consecutive BHR procedures performed between January 2002 and December 2006 on 1031 patients. All were undertaken by the designer surgeon. 89 hips (82 patients) were excluded from analysis due to incomplete data. These comprised 17 hips in 17 patients who died during the follow-up period, 21 hips in 20 patients that had been revised and 51 hips in 45 patients who were lost to follow-up. This left a total of 1089 hips in 949 patients for analysis.

The non-designer NHS group comprised 150 BHRs undertaken at St.Helier, between January 1999 and December 2006 on 135 patients. 35 hips (32 patients) were excluded from analysis due to incomplete data. These comprised 4 hips in 4 patients who died during the follow-up period, 15 hips in 14 patients that had been revised, and 16 hips in 14 patients who were lost to follow-up. This left a total of 115 hips in 103 patients for analysis.

The non-designer private group comprised 252 BHRs undertaken at St.Anthony's, between January 1999 and December 2006 on 231 patients. 53 hips (49 patients) were excluded from analysis due to incomplete data. These comprised 4 hips in 4 patients

Table I. — Demographics

	Designer Group	NHS Group	Private Group
Sex			
• Male	775 (72%)	88 (77%)	137 (69%)
• Female	314 (28%)	27 (23%)	62 (31%)
Age			
• Mean	53.6	53.0	54.8
• SD	9.3	9.4	6.9
• Range	18-79	18-72	32-69

who died during the follow-up period, 14 hips in 14 patients that had been revised, and 35 hips in 31 patients who were lost to follow-up. This left 199 hips (182 patients) eligible for analysis.

Demographic data is shown in Table I.

No significant difference was identified between the outcome scores of the patients treated by the two non-designer surgeons ($p = 0.340$). We found no significant differences in Oxford scores between the NHS group and Private group at any time point ($p > 0.05$ for all) (Fig. 1). The Oxford scores for the Designer group were found to be significantly higher than those of both the NHS group and Private group every year ($p < 0.001$ for all).

We found a statistically significant cumulative drop in Oxford scores in both the Designer and Private group ($p = 0.006$ and $p = 0.011$, respectively) (Fig. 2). This change became significant between 2011 and 2012. This change was not found to be significant in the NHS group ($p = 0.358$).

DISCUSSION

We identified a statistically significant drop in Oxford score in both the Designer and Private groups. However, it is known that, following joint replacement, the OHS will decline over time (4). In our study, the mean follow-up period was 8.8 years for the Designer group (0.35 point decline), 11.2 years for the NHS group (1.24 point decline) and 10.2 years in the Private group (1.77 point decline). In all groups, the cumulative OHS decline is consistent with the anticipated decline that occurs with the passage of time.

Our data indicates that negative reporting on metal on metal hips, which began towards the end of

2007, has not negatively influenced patients' reporting on how their hip is performing. This appears to be true of all patients, no matter who undertook their original procedure or where it was performed. However, patients whose procedures were performed by the designer surgeon had the highest baseline scores and remained best at the 2012 point. Notwithstanding the fact that the designer surgeon was the most experienced with this implant, we suggest that the fact that many of the designer cohort patients actively sought out being treated with this implant by the designer surgeon may have had an influence. We hypothesise that the increased emotional investment in the implant by this cohort of patients may have resulted in a better perceived outcome. Interestingly, despite cases being performed by the same surgeons, NHS patients had lower scores at all time points compared to private patients under the care of the same surgeons, although this was not found to be statistically significant. This is a phenomenon that has been previously described (4) and may relate to the long NHS waiting lists during the period that the operations were undertaken (4).

The fact that patients do not seem to have been affected by the negative media reports is in contrast to the findings of previous studies where the media has been shown to have a significant impact on patients' opinion, feelings and expectations (2,10,13). However, it has been previously suggested that patients' opinion is far more influenced by positive reporting than by negative. A study by Passalacqua *et al* (12) in 2004 looked at patients' opinion on a cancer treatment after positive media coverage and then after negative media coverage. They found that at the peak of positive coverage 42% of people

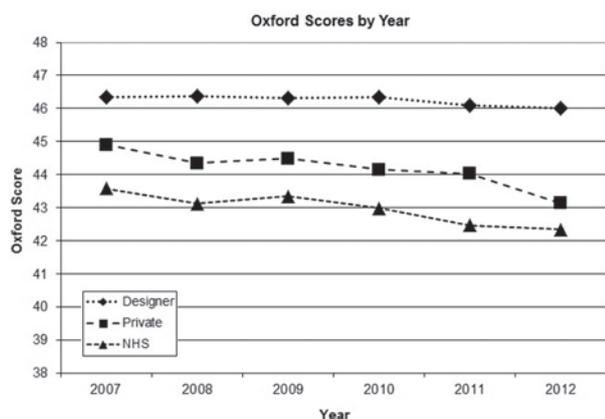


Fig. 1. — Mean Oxford score by year

thought the treatment was effective but after negative press only 11% thought the treatment was ineffective. This finding is consistent with the experience of surgeons who, at the height of positive media coverage on hip resurfacing, were regularly faced by patients requesting resurfacing in preference to other options. While our findings do support the observation that the patients' perception of their resurfacing hip has not been adversely affected by negative media coverage, it is important to note that the adverse publicity was primarily focused on MOM hips and specific products. At no stage has the BHR procedure been identified as unsatisfactory. We have not specifically investigated whether the BHR patients identified themselves as having MOM hip replacements.

In similar regard, the present study did not investigate whether patients were aware of the negative media coverage regarding MOM hip replacement. It is possible that patients were unaware of the negative reports and, as such, would not be influenced by them. Likewise, we know that patients often have poor knowledge about what treatment they have undergone (6,7). Therefore, even if the patient is aware of the negative coverage, they may not realise that it applies to the implant they have. However, as discussed previously, many patients who underwent a resurfacing had actively sought the treatment and therefore we would expect them to be aware that negative reports applied to them. This is particularly true of the Designer and Private groups. Finally, all

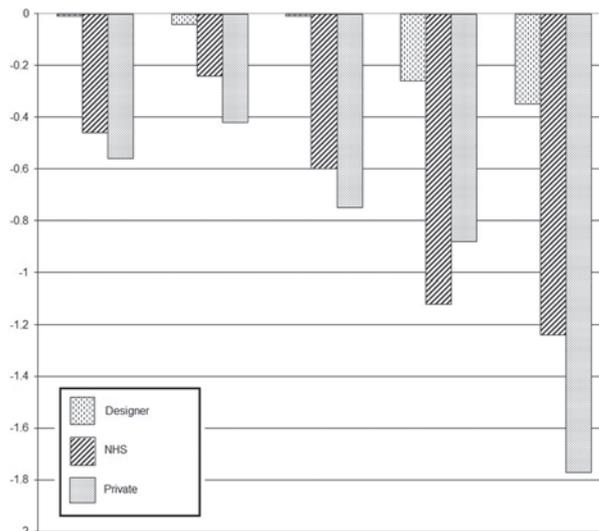


Fig. 2. — Cumulative change in Oxford score from 2007 baseline.

the procedures were performed with the BHR which has had previously published excellent results (3) leading to it gaining a 10A ODEP rating (11). It is therefore possible that these cohorts of patients have a greater degree of confidence in the implant than patients with other resurfacing designs, might have.

There are two main limitations to this study. Firstly, it is well known that response rate to postal questionnaires can influence results. The reasons for patients not responding, as well as how this affects outcomes, has been previously investigated by our centre (5). The mean annual response rate across all cohorts during this study period was 72% which, considering the mean follow-up at the end of this period was 8.8 years in the designer group, 10.2 in the private group and 11.2 in the NHS group, is a good response rate. However, we can still not ignore the fact that those who did not respond may have influenced our results if they had. Secondly, as this was a retrospective study we had to rely on data that was readily available to us. All three centres involved routinely collected annual OHS from their post-operative patients and, as such, this was the most appropriate scoring system for us to use. A previous study by Arden *et al* (1) linked OHS with patient satisfaction. They concluded that the OHS at 12 months associated with patient satisfaction was

38 and at 24 months 33. Despite the significantly longer follow-up the mean OHS in all our cohorts were well above this. We are therefore confident that the use of the OHS in this study supports our conclusions.

CONCLUSION

Negative media reporting does not appear to have had an impact on BHR patients' perceived outcome from surgery. As such, patients who have undergone BHR and go on to present with symptoms should be taken seriously and investigated.

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