Assessing the Outcome of Hip Arthroscopy for Labral Tears in Femoroacetabular Impingement Using the Minimum Dataset of the British Non-arthroplasty Hip Register: A Single-Surgeon Experience

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Purpose: The aim of this study was to assess changes in British Non-arthroplasty Hip Register (NAHR) minimum dataset (MDS) patient-reported outcome measures (PROMs) after hip arthroscopy for femoroacetabular impingement (FAI) and define the relation between these and patient satisfaction. Secondary aims included exploring the impact of patient characteristics (age, sex, and social deprivation status) on MDS PROMs and satisfaction and determining the Net Promoter Score for hip arthroscopy for FAI. **Methods:** Preoperative data were collected from the NAHR, and postoperative data were collected through the NAHR, by mail, and by telephone survey. Correlations between satisfaction, International Hip Outcome Tool 12 (iHOT-12), and EQ-5D scores were explored. **Results:** A consecutive series of 89 primary hip arthroscopy procedures for FAI in 88 patients is reported. Patients reported improvements in the iHOT-12 score (mean, 34.08; 95% confidence interval [CI], 27.88 to 40.28; $P < .001$), EQ-5D index score (+0.124; 95% CI, 0.063 to 0.185; $P < .001$), and EQ-5D visual analog scale (VAS) (+4.49; 95% CI, −1.56 to 10.54; $P = .061$) after hip arthroscopy for FAI. Satisfaction was predicted by both change in iHOT-12 score (Spearman r [r_s] = 0.54, $P < .001$) and absolute postoperative iHOT-12 score ($r_s = 0.78$, $P < .001$), change in EQ-5D index score ($r_s = 0.42$, $P < .001$) and absolute postoperative EQ-5D index score ($r_s = 0.70$, $P < .001$), and change in EQ-5D VAS score ($r_s = 0.30$, $P = .012$) and absolute postoperative EQ-5D VAS score ($r_s = 0.59$, $P < .001$); and the strength of correlation was greater with the absolute postoperative score than with the change in score for all 3. Sex, age, and social deprivation status did not predict postoperative PROMs ($P \geq .15$) or satisfaction ($P \geq .32$). The postoperative iHOT-12 score correlated strongly with EQ-5D index ($r_s = 0.90$, $P < .001$) and EQ-5D VAS ($r_s = 0.81$, $P < .001$) scores. The Net Promoter Score for hip arthroscopy for FAI was 70.31. **Conclusions:** This study showed significant improvements in hip-specific function (iHOT-12) and health-related quality of life (EQ-5D), as measured by the NAHR MDS, in patients undergoing hip arthroscopy for FAI. Satisfaction rates were high (75.7%) and correlated strongly with hip-specific and general health PROMs. Satisfied patients were more likely to be willing to undergo similar surgery in the future. Self-reported postoperative hip function correlated very strongly with general health-related quality of life. **Level of Evidence:** Level IV, case series.

Arthroscopic hip surgery is increasingly performed for femoroacetabular impingement (FAI).[1-3] High satisfaction rates and good outcomes are reported.[4-7] However, a recent systematic review showed significant variation in reported outcome measures and stressed the need for standardization of outcome reporting.[8] A survey of 900 surgeons worldwide reported that almost 81% believed outcome scores should be used to evaluate surgical outcomes in FAI,[9] and a recent international consensus statement endorsed by 25 clinical societies suggested that suitable outcome measures include the International Hip Outcome Tool 12 (iHOT-12) and EQ-5D, among others.[10]

The British Hip Society established the Non-arthroplasty Hip Register (NAHR) in 2012 to collect

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data concerning hip joint operations, excluding arthroplasty and fracture surgery.[11] Stated aims include increasing patient awareness of outcomes, providing outcome data to compare different procedures and inform surgeons' decision-making processes, identifying patient groups that may benefit from particular procedures, and encouraging publication of surgical outcomes.[11,12] Initially, data collected included the Harris Hip Score (HHS)[13] and Non-arthritic Hip Score.[14] A standardized minimum dataset (MDS) was defined in 2014,[12] comprising the EQ-5D-5L[15]; iHOT-12[16]; and data regarding demographic characteristics, diagnosis, and surgery. MDS data constitute the minimum amount of data collected for every patient entered into the NAHR. Additional data may be collected for specific research or audit projects or at the surgeon's discretion; however, unlike MDS data, these data will not be available for all patients in the NAHR. MDS data will therefore provide a body of data that are universally collected for patients undergoing hip arthroscopy in the United Kingdom, facilitating pooling of data for research and outcome monitoring and ensuring that individual service providers and outcomes are monitored in a common format. As the NAHR and other registries[17] that use the same patient-reported outcome measures (PROMs) grow, it is anticipated that there will be increasing numbers of publications relating to them, making a better understanding of these PROMs and their significance more important. National Institute for Health and Care Excellence guidance in the United Kingdom supports the use of hip arthroscopy for treating FAI and states that clinicians should submit data to the NAHR,[18] yet postoperative data collection rates remain low.[11]

Registries are powerful tools and have become increasingly popular in orthopaedics in recent years, covering a spectrum of subspecialties.[11,17,19-24] However, in the field of hip arthroscopy, registries have been developed only recently.[11,17] Two established registries in this field are the British[11] and Swedish[17] registries, and both collect iHOT-12 and EQ-5D scores. Despite reports of good outcomes after hip arthroscopy,[4-6] there are no data relating the collected MDS PROM data from the British NAHR to measures of patient satisfaction and sentiment in the context of FAI. The UK government encourages routine use of satisfaction measures in health care delivery. The Friends and Family Test (FFT) was introduced to NHS England in 2013 to facilitate patient feedback, identify service shortcomings, and gather data on patient experience.[25] It was originally based on the Net Promoter Score (NPS; Satmetrix).[26]

The aims of this study were to assess changes in MDS PROMs after hip arthroscopy for FAI and to define the relation between the MDS PROMs and patient satisfaction. The study had 4 secondary aims: to define the relation between the hip-specific iHOT-12 and quality-of-life EQ-5D MDS PROMs in the context of arthroscopic surgery for FAI; to explore the impact of patient characteristics (age, sex, and social deprivation status) on MDS PROMs and satisfaction; to determine whether there was a relation between MDS PROMs and patient willingness to undergo similar procedures in the future; and to report an NPS for hip arthroscopy for FAI at our institution. The hypothesis was that there would be a direct correlation between the MDS PROMs (iHOT-12 and EQ-5D) and measures of patient satisfaction.

Methods

A consecutive series of patients undergoing primary hip arthroscopy procedures for FAI under the care of a single surgeon (P.G.) between February 2013 and June 2015 were included. All patients undergoing primary hip arthroscopy procedures for labral tears in the context of FAI during this time frame were included. Revision procedures were excluded. Patients completed preoperative EQ-5D-5L[15] and iHOT-12[16] questionnaires. All patients completed preoperative questionnaires, but 2 omitted the iHOT-12 and another, the EQ-5D-5L. One patient underwent staged bilateral procedures 14 months apart and had complete preoperative and postoperative data for each hip. These were considered separate episodes. All patients had evidence of impingement on clinical examination and confirmed labral tears on preoperative hip magnetic resonance arthrogram. Patients underwent a trial of nonoperative management including analgesia and physiotherapy before surgery, and joint injections were performed when there was doubt as to the origin of symptoms.

PROMs at a minimum of 1 year postoperatively were recorded routinely in the NAHR for 30 procedures (33.7%). All patients were sent the EQ-5D-5L, iHOT-12, and satisfaction questionnaires by mail. Nonresponders were telephoned and sent NAHR reminder e-mails with links to complete PROM scoring. A minimum of 5 separate attempts were made to contact each patient. The EQ-5D-5L consists of an EQ-5D index, comprising 5 domains (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression), with scores ranging from -1 to $+1$, and an EQ-5D visual analog scale (VAS), on which patients self-rate their health state between 0 and 100. The iHOT-12[16] is derived from the longer International Hip Outcome Tool (iHOT) 33.[27] Patients rate 12 variables on a VAS, and the mean constitutes the iHOT-12 score. Patient satisfaction with the operated hip was assessed with a Likert scale (very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied), whereas 6-point Likert scales (extremely likely, likely, neither likely nor unlikely, unlikely, extremely unlikely, do not know) were used to ask patients whether