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Does your approach matter?

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Abstract

There is controversy regarding the effect of different approaches on recovery after THR. Collecting detailed relevant data with satisfactory compliance is difficult.

Our retrospective observational multi-center study aimed to find out if the data collected via a remote coaching app can be used to monitor the speed of recovery after THR using the anterolateral (ALA), posterior (PA) and the direct anterior approach (DAA).

771 patients undergoing THR from 13 centers using the moveUP platform were identified. 239 had ALA, 345 DAA and 42 PA. There was no significant difference between the groups in the sex of patients or in preoperative HOOS Scores. There was however a significantly lower age in the DAA (64,1y) compared to ALA (66,9y), and a significantly lower Oxford Hip Score in the DAA (23,9) compared to PA (27,7). Step count measured by an activity tracker, pain killer and NSAID use was monitored via the app. We recorded when patients started driving following surgery, stopped using crutches, and their HOOS and Oxford hip scores at 6 weeks.

Overall compliance with data request was 80%. Patients achieved their preoperative activity level after 25.8, 17,7 and 23.3 days, started driving a car after 33.6, 30.3 and 31.7 days, stopped painkillers after 27.5, 20.2 and 22.5 days, NSAID after 30.3, 25.7, and 24.7 days for ALA, DAA and PA respectively. Painkillers were stopped and preoperative activity levels were achieved significantly earlier favoring DAA over ALA. Similarly, crutches were abandoned significantly earlier (39.9, 29.7 and 24.4 days for ALA, DAA and PA respectively) favoring DAA and PA over ALA. HOOS scores and Oxford Hip scores improved significantly in all 3 groups at 6 weeks, without any statistically significant difference between groups in either Oxford Hip or HOOS subscores.

No final conclusion can be drawn as to the superiority of either approach in this study but the remote coaching platform allowed the collection of detailed data which can be used to advise patients individually, manage expectations, improve outcomes and identify areas for further research.

[*] Created the first draft of this document

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1 Introduction

There is controversy regarding the effect of different approaches on recovery after THR (Miller et al 2018, Graves et al 2016) Collecting detailed relevant data with satisfactory compliance is difficult (Knapp et al 2019).

Our retrospective observational multi-center study aimed to find out if the data collected via a remote coaching app can be used to monitor the speed of recovery after THR using the anterolateral (ALA), posterior (PA) and the direct anterior approach (DAA).

2 Methods

771 patients undergoing THR from 13 centers using the moveUP platform (moveUP NV, Belgium) were identified. 239 had ALA, 345 DAA and 42 PA. There was no significant difference between the groups in the sex of patients or in preoperative HOOS Scores. There was however a significantly lower age in the DAA (64,1y) compared to ALA (66,9y), and a significantly lower Oxford Hip Score in the DAA (23,9) compared to PA (27,7). Step count measured by an activity tracker, pain killer and NSAID use was monitored via the app. We recorded when patients started driving following surgery, stopped using crutches, and their HOOS and Oxford hip scores at 6 weeks.

Differences in the parameters between groups were assessed with a one-way ANOVA. Bonferroni post hoc test was used to reveal which groups differed in the case of significant p-values. The significance level was set to $\alpha = 0.05$

3 Results

Overall compliance with data request was 80%. Patients achieved their preoperative activity level after 25.8, 17,7 and 23.3 days, started driving a car after 33.6, 30.3 and 31.7 days, stopped painkillers after 27.5, 20.2 and 22.5 days, NSAID after 30.3 , 25.7, and 24.7 days for ALA, DAA and PA respectively. Painkillers were stopped and preoperative activity levels were achieved significantly earlier favoring DAA over ALA (Figure 1 and 2). Similarly, crutches were abandoned significantly earlier (39.9, 29.7 and 24.4 days for ALA, DAA and PA respectively) favoring DAA and PA over ALA. HOOS scores and Oxford Hip scores improved significantly in all 3 groups at 6 weeks, without any statistically significant difference between groups in either Oxford Hip or HOOS subscores.

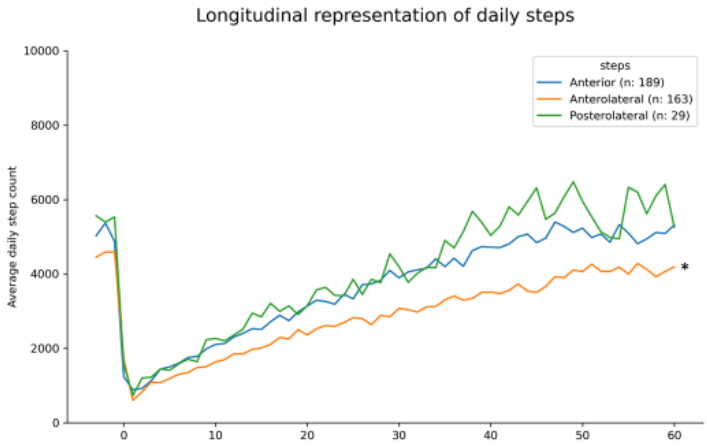

Figure 1: Evolution of physical activity after total hip arthroplasty

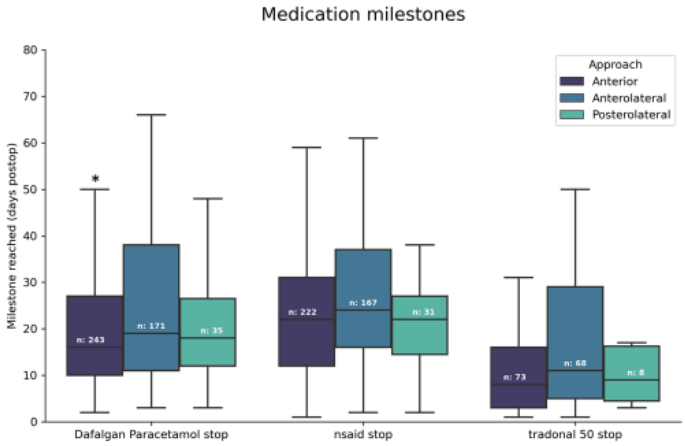

Figure 2: Figure 2: Days of using medication after total hip arthroplasty, Nsaid: non-steroid inflammatory drugs

4 Discussion

The literature suggests that functional recovery is accelerated in patients who undergo the DAA (Reininga et al 2013, Taunton et al 2014). Our results confirm this trend with faster recovery of physical activity and faster getting off crutches.

A strength of this study is the number of patients assessed and its multi-center design. No final conclusion can be drawn as to the superiority of either approach in this study but the remote coaching platform allowed the collection of detailed data which can be used to advise patients individually, manage expectations, improve outcomes and identify areas for further research.

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