Does the Primary Surgical Approach Matter when Choosing the Approach for Revision Total Hip Arthroplasty?

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INTRODUCTION:

Multiple surgical approaches may be used for primary and revision total hip arthroplasty (pTHA, rTHA). This study sought to compare outcomes in rTHA patients based on the concordance of their pTHA and rTHA surgical approach.

METHODS:

A multi-center retrospective review of patients who underwent rTHA from 1990 to 2021 was conducted at two large, urban academic centers. Patients with minimum one-year follow-up after rTHA were included. Patients were grouped based on whether they received pTHA via the posterior (PA), direct anterior (DA), or direct lateral (DL) approach, as well as by concordance of index rTHA approach with pTHA approach. Patient demographics, operative characteristics, and postoperative outcomes were compared between groups.

RESULTS:

Of the 797 patients studied, 721 (90.5%) were included in the concordant cohort and 76 (9.5%) in the discordant cohort. Discordance rate was highest in the DA-pTHA subset (44.2%), compared to the DL-pTHA subset (18.1%) or PA-pTHA subset (3.9%). Discordance varied significantly between primary approaches within all indications for revision, with DA-pTHA patients having the highest discordance rate for patients revised for aseptic loosening (70.4%,p<0.001), fracture (33.3%,p<0.001), dislocation (41.7%,p<0.001) and other indications (33.3%,p<0.001). DL-pTHA patients had the highest discordance rate among patients revised for infection (27.3%,p<0.001). Within the DL-pTHA subset, the discordant group had a longer length of stay (4.9 vs.2.9 days,p<0.001) and higher reoperation rate (42.9% vs. 10.2%,p=0.003). There were no differences between groups in dislocation rate, revision for infection, or revision for fracture.

DISCUSSION AND CONCLUSION:

The results of this multicenter study suggest approach concordance slightly improves length of stay for patients who underwent pTHA via DL, though there was no effect on dislocation, infection, or fracture rates for any approach combination. Additionally, patients who received pTHA via the DA were more likely to receive a non-anterior approach rTHA compared to other primary approaches.

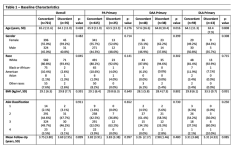

Table 2 – Frequency of Primary and Revision THA Surgical Approaches

Primary Approach	Revision Approach	Concordance	N
Posterior (n=640)	Posterior	Concordant	615 (96.1%)
	Anterior	Discordant	5 (0.8%)
	Lateral	Discordant	20 (3.1%)
Anterior (n=86)	Anterior	Concordant	48 (55.8%)
	Posterior	Discordant	29 (33.7%)
	Lateral	Discordant	9 (10.5%)
Lateral (n=72)	Lateral	Concordant	59 (81.9%)
	Posterior	Discordant	12 (16.7%)
	Anterior	Discordant	1 (1.4%)