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EXTENDED OFFSET FEMORAL STEM USE IN ANTERIOR APPROACH TOTAL HIP ARTHROPLASTY

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Objective: Dislocation remains a feared complication of total hip arthroplasty (THA). To decrease the risk of dislocation, extended offset (EO) femoral stems are used to increase muscle tension around the implant following posterior THA. The anterior approach is suggested to reduce dislocation risk and thus reduce the need for EO stems. The purpose of this study was to report on the overall usage rates of EO stems and compare radiographic outcomes and complications between EO stems and a matched standard offset cohort following anterior approach THA.

Methods: A retrospective review was performed on 1515 consecutive anterior approach THA to determine rates of EO use. The most recent 100 EO were included in the radiographic and complication analysis and were matched to 100 standard offset stems based on stem size, procedure (unilateral/bilateral), sex, body mass index and age. Data collection included patient demographics, pre- and post-operative radiographic outcomes, and complications within one year. Independent t-tests and Chi-squared analyses were performed to compare extended offset and standard offset groups.

Conclusion: EO was used in 8% of all THA. Rates for extended offset use in Asian, Caucasian, and NH/PI patients were 1.6%, 13.1%, and 7.1%, respectively. Despite rigorous matching procedures, the distribution of ethnicity was different between extended and standard offset groups: Caucasian (75% vs 43%), Asian (12% vs. 35%), NH/PI (9% vs. 13%), and other (4% vs. 9%) ($p < 0.001$). No fractures, dislocations, or revisions occurred within one-year after surgery, and one deep infection was noted in the standard offset group. Hip offset difference was greater than 6mm in 24% and 18% of extended and standard offsets ($p = 0.193$), respectively. Leg length difference was greater than 6mm in 19% and 15% of extended and standard offsets ($p = 0.223$), respectively. EO was utilized much less frequently in this single surgeon, anterior approach THA cohort compared to previously reported rates for posterior approach THA (8% versus 49%, respectively). Additionally, the lack of dislocations and the ability to achieve limb symmetry suggests the use of EO is required to restore hip symmetry and not to achieve stability with anterior approach THA. The difference in the proportion of extended offset use between ethnicities was likely due to racial differences in hip anatomy.