



ELSEVIER

Contents lists available at ScienceDirect

The Journal of Arthroplasty

journal homepage: www.arthroplastyjournal.org

Complications - Other

The Direct Anterior Approach is Associated With Early Revision Total Hip Arthroplasty

Shuichi Eto, MD, PhD ^{a, b}, Katherine Hwang, MS ^b, James I. Huddleston, MD ^b,
Derek F. Amanatullah, MD, PhD ^b, William J. Maloney, MD ^b,
Stuart B. Goodman, MD, PhD ^{b, *}

^a Department of Orthopedic Surgery, Faculty of Medicine, Saga University, Saga, Japan

^b Department of Orthopaedic Surgery, Stanford University Medical Center Outpatient Center, Stanford School of Medicine, Redwood City, California

ARTICLE INFO

Article history:

Received 25 May 2016
Received in revised form
13 September 2016
Accepted 19 September 2016
Available online 8 October 2016

Keywords:

surgical approach
hip arthroplasty
direct anterior approach
anterolateral approach
posterior approach
revision

ABSTRACT

Background: The direct anterior approach for total hip arthroplasty (THA) has generated increased interest recently. The purpose of this study was to compare the duration to failure and reasons for revision of primary THA performed elsewhere and subsequently revised at our institution after the direct anterior vs other nonanterior surgical approaches to the hip.

Methods: All primary THAs performed elsewhere and referred to our institution for revision were divided into the direct anterior approach (30 cases) or nonanterior approach groups (100 cases, randomly selected from 453 cases) based on the original surgical approach. Because all primary direct anterior THAs were originally performed after 2004 to eliminate temporal bias, we identified a subset of the nonanterior group in which the primary THA was performed after 2004 (known as the recent nonanterior group, 100 cases, randomly selected from 169 available cases).

Results: The mean duration from primary to revision THA was 3.0 ± 2.7 years (direct anterior approach), 12.0 ± 8.8 years (nonanterior approach), and 3.6 ± 2.8 years (recent nonanterior), respectively. There was a significant difference in time to revision between the direct anterior and nonanterior approach groups ($P < .001$). Aseptic loosening of the stem was significantly more frequent with the direct anterior approach group (9/30, 30.0%) when compared with the nonanterior group (8/100, 8.0%, $P = .007$) and the recent nonanterior group (7/100, 7.0%, $P = .002$).

Conclusion: Revision of the femoral component for aseptic loosening is more commonly associated with the direct anterior approach in our referral practice.

© 2016 Elsevier Inc. All rights reserved.

Different surgical approaches may be used for primary total hip arthroplasty (THA) with each having specific advantages and disadvantages. The direct anterior approach for THA has generated increased interest recently. The direct anterior approach is performed through an internervous and intermuscular plane that avoids splitting or detaching muscles from the femur and pelvis [1–3]. The proposed benefits include reduction of postoperative dislocation, improved rehabilitation and gait patterns, faster

recovery, less pain, shorter hospital stay, and quicker cessation of ambulatory aids [4–8]. Alternatively, some studies have been reported that there are no differences in functional ability or gait kinematics between the direct anterior approach and the posterior approach beyond 6 weeks, and the direct anterior approach even has a higher intraoperative proximal femoral or greater trochanteric fracture rate when compared with the posterior approach [9–15]. Furthermore, the direct anterior approach has been shown to have a significant learning curve that may affect implant longevity and complication rate [15–19]. This may be due to difficulties in exposure and visualization of the proximal femur as well as implanting the femoral component using special instrumentation, and implants assuring adequate initial stability of the implant.

Detailed information of the numbers of and reasons for revision THA whose primary THA used the direct anterior approach or another surgical approaches will help in the understanding of the potential utility of different surgical approaches. The purpose of

One or more of the authors of this paper have disclosed potential or pertinent conflicts of interest, which may include receipt of payment, either direct or indirect, institutional support, or association with an entity in the biomedical field which may be perceived to have potential conflict of interest with this work. For full disclosure statements refer to <http://dx.doi.org/10.1016/j.arth.2016.09.012>.

* Reprint requests: Stuart B. Goodman, MD, PhD, Department of Orthopaedic Surgery, Stanford University Medical Center Outpatient Center, 450 Broadway Street, M/C 6342, Redwood City, CA 94063.