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Internet Promotion of Direct Anterior Approach Total Hip Arthroplasty by Members of the American Association of Hip and Knee Surgeons

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ABSTRACT

Background: The direct anterior approach (DAA) in total hip arthroplasty is of significant interest to both patients and surgeons, largely due to intense marketing. This study addressed the question, “What is the level of promotion of DAA total hip arthroplasty on the internet by American Association of Hip and Knee Surgeons (AAHKS) members?”

Methods: An internet search was performed to identify surgeon-specific websites for each member of the AAHKS using the members' full name and a previously published set of criteria. Each website was evaluated utilizing a questionnaire to systematically identify claims made regarding proposed DAA-specific risks, benefits, as well as the presence/absence of supporting data.

Results: We identified 1855 qualified websites. The DAA was referenced on 22.8% (423/1855) of these websites. Claims regarding DAA-specific benefits included less invasive/muscle sparing (46.3%), quicker recovery (45.2%), decreased pain (28.1%), decreased hospital stay (22.0%), and decreased dislocation risk (16.3%). Potential DAA risks including lateral femoral cutaneous nerve injury, periprosthetic/greater trochanteric fracture, and wound complication/hematoma were addressed on only 4.7%, 3.1%, and 1.7% of websites, respectively. Supporting peer-reviewed literature was identified on only 3.6% of DAA websites. **Conclusion:** Over one-fifth of AAHKS members promoted the DAA on the internet. Member websites claimed DAA benefits such as faster recovery and decreased pain approximately 9 times more frequently than any potential risk of the procedure ($P < .001$). While AAHKS policy does not regulate member marketing, it is the responsibility of all orthopedic surgeons to disseminate accurate, validated information concerning the procedures we perform.

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Total hip arthroplasty (THA) is one of the most successful surgical procedures in orthopedics, allowing patients with intractable pain and functional disability to return to higher levels of activity and experience an improved quality of life [1,2]. Numerous long-term follow-up studies have identified extremely high clinical success rates in terms of pain reduction, functional improvement,

and satisfaction utilizing traditional approaches to the surgery. In an era of decreasing reimbursement and bundled payments, surgeons and hospital systems are increasingly motivated to search for techniques to further reduce recovery time, postoperative pain, and hospital stay, while maintaining the excellent outcomes and safety profile of traditional methods. The direct anterior approach (DAA) to THA has garnered significant attention in part due to claims that the approach is associated with less muscle damage and pain as well as accelerated recovery after hip arthroplasty [3]. Although there has been a surge in popularity and widespread adoption and promotion of DAA THA by surgeons, hospitals, and industry [2], there are few studies which establish long-term clinically significant benefits, safety, and efficacy. Despite claims of superiority and significant marketing, several studies have been published raising concerns regarding nerve damage [4–6], muscle damage [7,8],

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Table 1
Number of Fellow Members and Internet Sites, Overall and by US Region/Territory.

	No. of Fellow Members	No. of Websites
Overall	1625	1855
Midwest region	381	444
Northeast region	339	359
South region	551	616
West region	349	431
US territory	5	5

blood loss [9], wound problems [10], femoral failure [11], and a technical learning curve [12–14].

The internet has become an important tool for patients to learn about their general medical conditions and orthopedic concerns. Moreover, public perception of the importance of the internet as a source of health information has risen substantially [15]. Surgeon websites are an increasingly important venue to market skills and attract new patients. There is little regulatory oversight regarding the validity of claims made on these websites. As physicians, it is the responsibility of each member of the American Association of Hip and Knee Surgeons (AAHKS) to endorse and promote accurate, validated information to our patients.

With this in mind, our study had a 2-fold purpose: (1) to evaluate the level of promotion of DAA THA available via internet sites associated with AAHKS members, and (2) analyze the extent of specific claims made regarding DAA THA risks and benefits, and support from peer-reviewed literature.

Materials and Methods

In January 2016, 1673 active fellow members of AAHKS were identified using the AAHKS membership directory at <http://www.aaahks.org>. We subsequently performed an internet search for personalized websites associated with each AAHKS member. The search engine Google was used, with the physician's name as the main keyword.

After the initial search, we examined potential websites for 7 criteria: physician picture, biosketch, contact information, affiliations, specialty, certifications/education, and interests/research. If at least 4 of the 7 criteria were found on the website, it was included in the study. Utilizing a modification of a previously published questionnaire (see Appendix), each website was then evaluated for claims made regarding the DAA THA-specific benefits, risks, and supporting literature [16–18]. Study websites were further classified based on the region in which AAHKS Fellows practiced using the US Census Bureau regions Midwest, Northeast, South, and West (https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf). If a surgeon was found to have 3 or more websites which met inclusion criteria, the 2 websites which met the greatest number of the 7 criteria were included in the analysis.

DAA THA information was often found on institutional websites linked peripherally to a physician's primary website. Therefore, we made an effort to distinguish between claims made by a physician (direct claims) vs claims associated with the physician but endorsed by an institution (indirect claims). Claims found on the primary physician website or within 2 clicks away from the primary site are more likely to be interpreted by a patient as being endorsed by the surgeon and were included in the analysis. Claims and information linked more peripherally to the surgeon website were not included in this analysis. Previously published reports [16–18] set the precedent for this distinction, and it was used to minimize arbitrary evaluation of surgeon sites.

Results

Fifty (3.0%) of the 1673 members of AAHKS in our review did not have an internet presence. We identified 1855 websites associated with 1623 AAHKS members for study inclusion. Study websites were classified as private practice/clinic ($n = 979$; 52.8%), surgeon specific/personnel ($n = 253$; 13.6%), university system/hospital ($n = 257$; 13.9%), nonuniversity hospital ($n = 351$; 18.9%), and other ($n = 15$; 0.8%). Other websites consisted of organizational directory, foundation/institute, and industry websites. Table 1 shows the breakdown of the 1855 internet sites by US region and territory. The largest number of internet sites reviewed (616; 33.2%) were related to AAHKS Fellows from the Southern United States, followed by the Midwest (444; 23.9%), West (431; 23.2%), and Northeast (359; 19.4%) United States. Five additional sites (0.3%) were maintained by members in a US territory.

Overall, the DAA was mentioned on 22.8% ($n = 423$) of the 1855 internet sites in our review. In comparison, the anterolateral ($n = 43$) and posterior ($n = 87$) approaches to THA were mentioned on 2.3% and 4.7% of sites, respectively ($\chi^2 = 520.5$, $P = .00001$). Figure 1 shows the proportion of internet sites mentioning the DAA by region and territory. Excluding US territories due to low numbers, the prevalence of internet mention of the DAA did not statistically differ by US region ($\chi^2 = 2.200$, $P = .532$).

For internet sites on which the DAA was mentioned, Table 2 presents the proportion overall and by US region that explained the DAA to hip replacement. Explanation of the DAA ranged from a low of 34.7% in the South to a high of 47% in the Northeast but did not statistically differ based on region ($P = .313$). Table 2 also presents the proportion of internet sites by region that promoted various benefits of the DAA. In general, few internet sites made a direct claim that the DAA approach was the best approach to THA, but sites associated with Western Fellow Members of AAHKS were significantly more likely to do so than sites in other regions of the country (Table 2; $P = .006$). Internet mention of 12 specific benefits associated with the DAA did not statistically differ by region (Table 2; $P \geq .174$), but less tissue damage/minimally invasive/muscle sparing and faster recovery/earlier independence were the most frequently mentioned benefits (45% or more of all sites). The least frequently mentioned benefit was lower risk of revision (1%–2% of sites).

Few internet sites referenced any DAA-specific risks, and the proportion doing so did not vary by region (Table 2; $P \geq .103$). Overall, 4.7% of sites mentioned the risk of lateral femoral cutaneous nerve injury, 3.1% mentioned femoral or trochanter fracture, 1.7% mentioned hematoma and wound healing problems, and 0.7% mentioned increased radiation exposure. Citation of peer-reviewed literature in support of benefits and risks associated with the DAA was relatively rare, ranging from a low of 1.3% of Southern US internet sites to a high of 7.2% of Northeast US internet sites ($P = .068$) (Table 2).

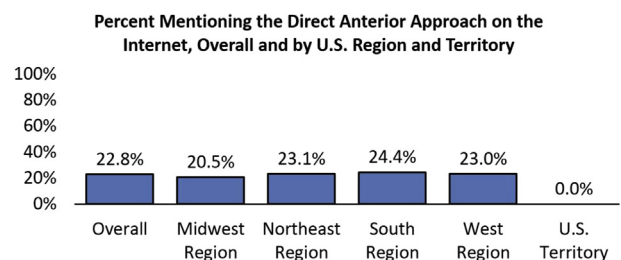


Fig. 1. Regional breakdown of percent of websites mentioning DAA to THA on the internet.

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