

Comparing Wound Complications between Stapling and Suturing for Incision Closure in Direct Anterior Total Hip Arthroplasty

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INTRODUCTION: Direct anterior total hip arthroplasty (DA-THA) has increased in popularity over recent decades. However, DA-THA has been reported to have higher incidence of superficial wound complications including superficial infection, prolonged wound drainage, and incisional dehiscence compared to other approaches for THA. These complications are likely due to incision location, skin character at the incision site, and impaired wound healing arising from hip movement separating the skin edges. Across orthopaedics, suture closure has been shown to be superior to staple closure; however, this has not been examined in the DA-THA population. This study aims to determine if method of incision closure affects the risk of wound complications following DA-THA.

METHODS: Records of patients who underwent DA-THA by two fellowship-trained arthroplasty surgeons from July 2017 to July 2022 were retrospectively reviewed. Procedural notes were reviewed for skin closure method, and all postoperative notes were reviewed for any wound complications, such as superficial wound infections and incisional dehiscence. Descriptive statistics and chi-squared measures were obtained from collected data.

RESULTS: Records from 346 patients were reviewed. A total of 361 DA-THAs were completed in this cohort. Most incisions were closed with running subcuticular 3-0 Monocryl sutures (203, 56.2%) followed by staples (158, 43.8%). The risk of overall wound complications was 2.5%. Eight of 158 patients (3.9%) with 3-0 Monocryl sutures experienced wound complications, which was significantly more compared to staple closure (1 of 158, 0.6%) ($p = 0.046$).

DISCUSSION AND CONCLUSION: DA-THA carries the risk of superficial wound complications including superficial infection and wound dehiscence. This study is the first to directly compare subcuticular 3-0 Monocryl with staples for skin closure in the DA-THA population. This study demonstrated that staple skin closure may carry a lower risk of wound complications compared to suture skin closure, which had a 6.5x higher rate of complications than staples. This may be attributed to staples improved skin-edge approximation compared to sutures. Overall, this study, indicates that staple closure may be superior to suture closure for the at-risk DA-THA incision site.