

Distraction-Related Complications after Hip Arthroscopy: A Systematic Review and Meta-Analysis of Distraction Techniques

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INTRODUCTION:

Perineal soft-tissue complications unique to the use of extremity traction and perineal countertraction using a post to distract the hip joint in hip arthroscopy has been shown to manifest in a myriad of ways including sexual dysfunction. Although mostly transient, some of these complications are particularly morbid in the young, healthy population in whom hip arthroscopy is usually indicated. This review aims to describe the various distraction techniques, describe how perineal soft tissue injuries manifest, and to compare technique specific rates of these injuries.

METHODS:

A systematic review was performed using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to identify distraction techniques and characterize distraction-related complications following hip arthroscopy. Inclusion criteria were prospective and retrospective Level I-IV evidence investigations that discussed complications following hip arthroscopy in their report. Manuscripts in which distraction technique was not identifiable, non-peer reviewed articles, and those with a low MINORs Criteria evidence quality grade were excluded.

RESULTS:

Sixty peer-reviewed articles between January 2003 and January 2023 with outcomes for 10,122 patients met the inclusion criteria for our review. In 54 studies of 8,668 patients perineal post distraction was used, while in 8 studies of 1,451 patients non-perineal post distraction methods were used. The estimated rate of pudendal nerve complications was significantly greater in studies in which perineal post distraction was employed (0.03 vs. 0.01; $p < 0.0001$). The estimated rate of other soft tissue injury in the perineum did not significantly differ based on distraction technique (0.01 vs. 0.01; $p = 0.460$). The rate of nerve complications reported in prospective studies in which a perineal post was used was significantly greater than in retrospective studies (0.07 vs. 0.02; $p < 0.05$). The modal time to resolution of pudendal nerve complications was 6 weeks with a range from 3 weeks to unresolved after 24 months.

DISCUSSION AND CONCLUSION:

Pudendal nerve and perineal soft tissue complications are rare and often transient in hip arthroscopy with either perineal or non-perineal post distraction methods. The rate of pudendal nerve injuries is significantly decreased when non-perineal post distraction techniques are employed. Nerve complications in the groin after hip arthroscopy are underreported in the literature when they are considered retrospectively.