

Sports Medicine **Literature Matters**

Hip Distraction without a perineal post – a prospective study of 1,000 hip arthroscopy cases

Mei-Dan O, Kraeutler MJ, Garabekyan T, Goodrich JA, Young DA

American Journal of Sports Medicine, 2017. DOI: 10.1177/0363546517741704.

Top Level Summary:

Hip arthroscopy has traditionally been performed with a perineal post used as counter traction to distract the joint to visualize the central compartment. This results in high forces against the patient's groin, leading to various complications including pudendal nerve neurapraxias, vaginal tears, and scrotal necrosis. The purpose of this study was to assess the safety of a technique for hip distraction without the use of a perineal post.

Methods:

This study prospectively analyzed a consecutive cohort of 1,000 patients who presented hip pain and were subsequently treated with hip arthroscopy. Demographic variables, hip pathology, lateral center edge angle (LCEA), and Beighton Hypermobility Score were recorded for each patient.

In the operating room with the patient in supine position, the patient's feet were placed in traction boots in a specifically designed distraction set-up and the operative table was placed in varying degrees of Trendelenburg position. Using this technique, enough resistance was created by gravity and friction between the patient's body and the bed to allow for successful hip distraction without the need for a perineal post. The average Trendelenburg angle used among all patients was 11 ± 2 degrees. The average initial distraction force necessary was 90 ± 28 lbs, which decreased to 65 ± 24 lbs by 30 minutes after traction initiation. The degrees of Trendelenburg as well as the distraction force were recorded for 309 hips in 281 patients.

Patients were seen by the operating surgeon immediately after surgery, as well as 10 to 14 days post-operatively, with a physical examination performed and questions asked regarding side effects and complications of the procedure. Subsequent follow-ups were also conducted for up to 2 years.

Results:

Through the duration of this study, a total of 1,000 hip arthroscopies were performed and no groin-related soft tissue or nerve complications were documented. Postless distraction of the hip was adequate to permit safe placement of a fluoroscopically guided anterolateral portal in all but two patients.

Based on these findings, the authors concluded that the use of the Trendelenburg position and a specially designed distraction set-up during hip arthroscopy allowed for safe hip distraction without a perineal post, thereby eliminating groin related soft tissue and nerve complications. Furthermore, they postulated that the use of the post-less technique for hip arthroscopy can offer additional advantages (**Table 1**).

Patient characteristics that significantly influenced initial traction force, and traction force at 30 minutes (after the establishment of 2 surgical portals and performance of an interportal capsulotomy) were, in order of magnitude: sex, patient weight, and LCEA.

Sex: males in this cohort required a mean 27lb of greater initial force than females

Patient weight: for every 1lb increase in patient weight, there was a corresponding 0.29lb increase in traction force

LCEA: for every 1° increase in LCEA, the traction force required increased by 0.59lb

These three predictors accounted for 49% of the variability in initial traction force, and 45% of the variability in traction force after 30 minutes.

Table 1. Potential advantages of hip arthroscopy without a perineal post.

Advantage	Details
Can position the leg in neutral position or slight abduction during traction	This relieves pressure from the sciatic nerve (adduction places more stress on the nerve); additionally, a perineal post forces femoral adduction
Ability to use AP and true lateral fluoroscopy views when establishing portals or during cam lesion work	This enables safer, faster, and more reproducible work which reduces the learning curve for inexperienced surgeons
Improved blood return to the heart and brain perfusion	The inclined Trendelenburg position may make it easier to control and maintain a lower blood pressure, thereby enabling the use of lower pump pressure
Faster recovery for patients with bilateral disease	The ability to perform simultaneous bilateral hip arthroscopy without accumulated groin-related stress and increased groin-related complications
Ability to work with and without traction (central and peripheral compartments) during surgery without needing to move a post out of the way, and then put it back	This is very helpful when cam resection is performed while the assistant prepares the graft for labral reconstruction

Clinical Relevance:

Compression neurapraxias and soft tissue damage to the perineum have been well documented as complications directly related to the use of a perineal post during hip arthroscopy. **This study is the first to report the use of a new technique for patient positioning during hip arthroscopy without the need for a perineal post at any point during positioning.**

Most patients undergoing hip arthroscopy are young, athletic, and sexually active. Furthermore, hip arthroscopy is an elective procedure. Therefore, perineal nerve- and soft tissue-related complications should be considered unacceptable in this population undergoing this procedure. With the use of a perineal post, the largest barrier for new hip arthroscopists and the most significant concern for experienced surgeons is not the procedure itself but rather the potential complications which may arise due to patient positioning.

5670 Greenwood Plaza Blvd. Ste. 200
Greenwood Village, CO 80111
t: 201 831 5000
www.stryker.com
www.sportsmedicine.stryker.com

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

Dr. Mei-Dan and Dr. Garabekyan are paid consultants of Stryker. Their statements represent their own opinions based on personal experience and are not necessarily those of Stryker.

The information presented is intended to demonstrate the breadth of Stryker product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

Stryker Corporation or its divisions or other corporate affiliated entities own, use or have applied for the following trademarks or service marks; Stryker. All other trademarks are trademarks of their respective owners or holders.

1000902524 Rev A
Copyright © 2018 Stryker
Printed in USA