

A Systematic Review of Postless Arthroscopic Hip Preservation Techniques

Alexander P. Decilveo, MD
Matthew J. Kraeutler, MD
Jaydeep Dhillon, BS
Joshua D. Harris, MD
Sydney M. Fasulo, MD
Omer Mei-Dan, MD
Anthony J. Scillia, MD

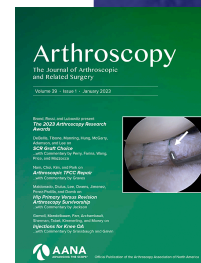


Introduction

- Hip arthroscopy has traditionally been performed with the use of a perineal post, which allows for countertraction to maintain hip distraction while the surgeon performs any central compartment work.
- However, the use of a perineal post is not without complications. Perineal and groin numbness have been reported as high as 41-59% while using a perineal post in hip arthroscopy.¹⁻³

Symptoms of Nerve Dysfunction After Hip Arthroscopy: An Under-Reported Complication?

Christian Dippmann, M.D, Ph.D., Kristian Thorborg, Ph.D., Otto Kraemer, M.D.,
Søren Winge, M.D., and Per Hölmich, M.D.



Introduction

- To combat the incidence of post-related nerve and/or soft tissue injuries following hip arthroscopy, surgeons have developed novel techniques to perform hip arthroscopy without a perineal post.
- Given the significant potential complications which may result from the use of a perineal post, it is important for surgeons to be aware of the different postless techniques for hip arthroscopy.

Hip Distraction Without a Perineal Post

A Prospective Study of 1000 Hip Arthroscopy Cases

Omer Mei-Dan,^{*†} MD, Matthew J. Kraeutler,[‡] MD, Tigran Garabekyan,[§] MD,
Jesse A. Goodrich,^{||} BA, and David A. Young,[¶] MBBS, FRACS (Orth)

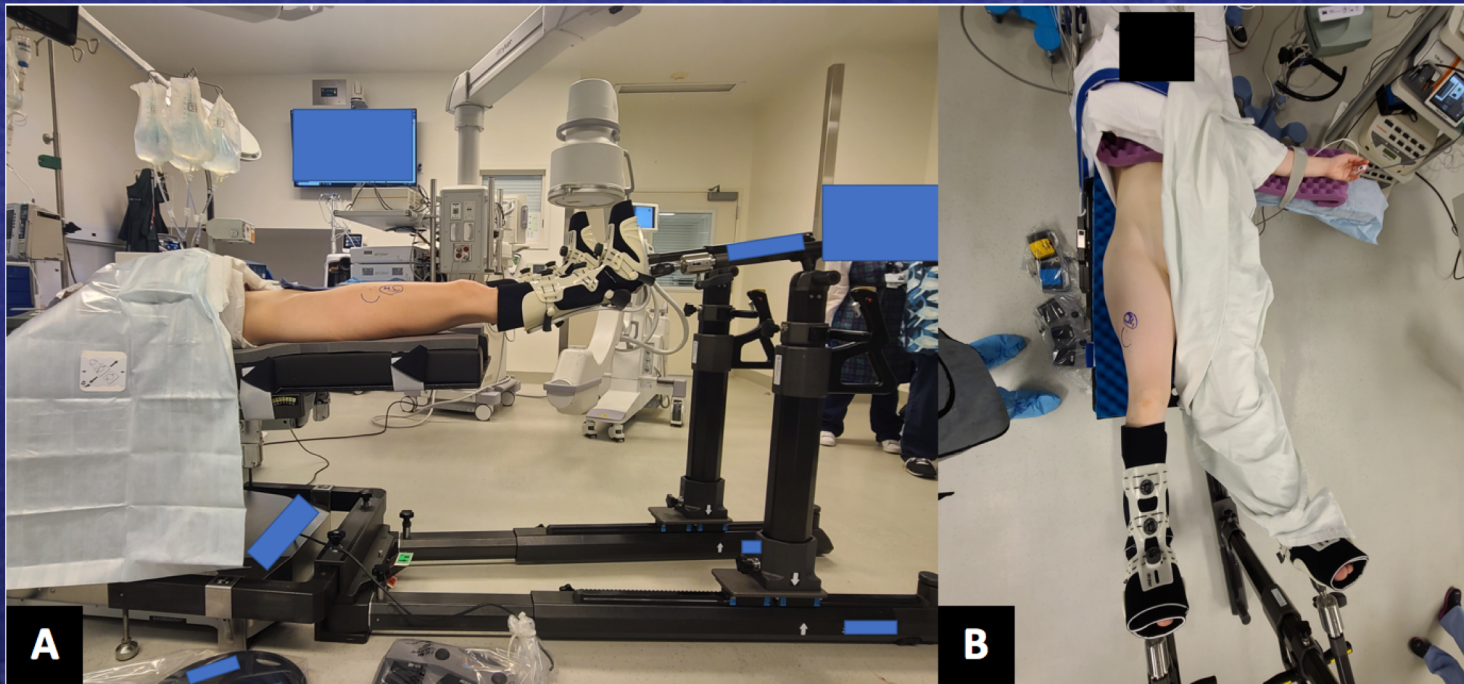
Investigation performed at CU Sports Medicine and Performance Center,

Department of Orthopedics, University of Colorado School of Medicine, Boulder, Colorado, USA



Purpose

- To perform a systematic review to identify and evaluate techniques used for postless hip arthroscopy



Methods

- Systematic review conducted according to PRISMA guidelines
- Searched PubMed, Embase, Cochrane Library
- Search terms used were: *“hip” AND “arthroscopy” AND (“perineal post” OR post-less)*
- Study inclusion criteria:
 - Studies that described techniques in hip arthroscopy without the use of a perineal post
- Study exclusion criteria:
 - Postless technique was abandoned intraoperatively
 - Postless technique not clearly defined
 - Described postless techniques for procedures other than hip arthroscopy

Methods

- Data extracted from each clinical study included
 - Country of authorship
 - Number of subjects undergoing postless hip arthroscopy
 - Gender
 - Age
 - Traction force and traction time
 - Body mass index (BMI)

Results

- Ten studies⁴⁻¹³ (1 Level III, 3 Level IV, 6 Level V) met inclusion criteria and 1,341 hips were analyzed
- The overall percentage of males was 51.5%
- The mean age ranged from 16.0 to 66.0 years
- The average traction force and time ranged from 40.0 to 69.2 pounds and 31.0 to 73.5 minutes, respectively
- There was only one incident of pudendal neurapraxia, which resolved spontaneously at 6 weeks without complication
- Sufficient distraction was able to be obtained using postless traction in all cases

Results

Study	Level of Evidence	n	Patient Age, y	Gender, % male	Brief Study Description	Author Country	Traction Force, lb	Traction Time, min
Merrell et al, 2007 ¹³	V	30	NR	NR	Beanbag	U.S.A.	NR	NR
Mei-Dan et al, 2013 ⁹	IV	170	34.0 (16.0-66.0)	65.3	Post located 7-10 cm distal to perineum and 5-10 cm lateral to midline against operative extremity	U.S.A.	NR	NR
Salas et al, 2018 ¹¹	V	NR	NR	NR	Tutankhamun	Mexico	NR	NR
Mei-Dan et al, 2018 ⁴	IV	1,000	NR	NR	Specialized traction table with 11-15° of Trendelenburg	U.S.A.	65.0 ± 24	61.0 (22-111)
Welton et al, 2019 ⁵	IV	40	32.3	40.0		U.S.A.	69.2	73.5
Kollmorgen et al, 2019 ⁷	V	NR	NR	NR	Pink Pad, 5-15° of Trendelenburg	U.S.A.	NR	NR
Ellman et al, 2019 ⁶	V	1	36	100	Specialized traction table (Pivot Guardian Distraction System, Stryker with 10° of Trendelenburg)	U.S.A.	40 kg (88 lb)	31.0
Jimenez et al, 2020 ¹²	V	NR	NR	NR	HAPPI	U.S.A.	NR	NR
Salas et al, 2021 ¹⁰	V	NR	NR	NR	Yoga Mat	Mexico	NR	NR
Schaver et al, 2021 ⁸	III	100	26.9 ± 10.4 (24.9-29.0)	32.0	Pink Pad, 5-10° of Trendelenburg	U.S.A.	NR	40.9 ± 11.1

Results

- In 4 studies, Trendelenburg position with a foam pad was used at 5-20 degrees
- The remaining studies used the Yoga Mat technique, the Tutankhamun technique, the Hip Arthroscopy Postless Procedure Impingement (HAPPI) technique (Figure), and the Beanbag technique

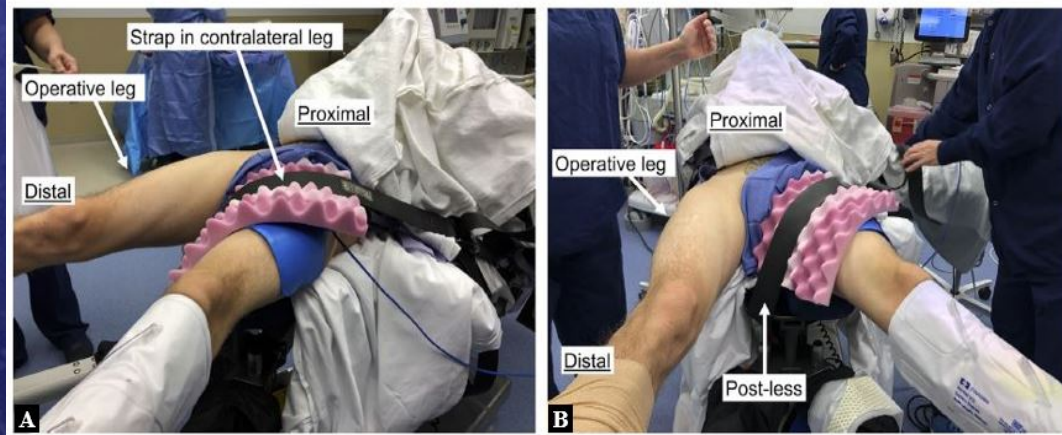


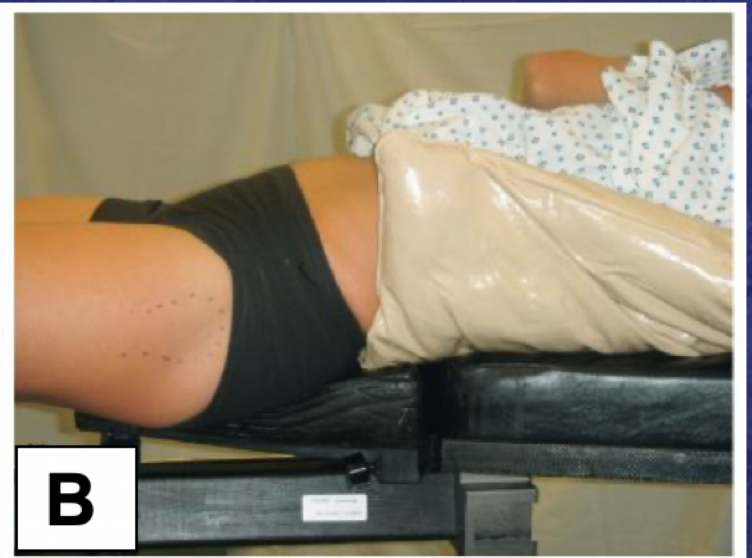
Figure. Hip Arthroscopy Postless Procedure Impingement (HAPPI) egg crate positioning.

Discussion

- The principle finding of this study is that there are multiple techniques that can be used for postless hip arthroscopy without the need for endorsing a particular company/product
- There was only one incident of pudendal neurapraxia, which resolved spontaneously at 6 weeks without complication
- Eight of the 10 articles included in our review have been published since 2018, which suggests that postless hip arthroscopy has recently gained popularity in an effort to avoid the potential complications associated with the use of a perineal post

Conclusion

- Postless hip arthroscopy can be adequately performed with a variety of techniques. Obtaining adequate traction and countertraction may be achieved through these postless methods.



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Systematic Review

Postless Arthroscopic Hip Preservation Can be Adequately Performed Using Published Techniques

Alexander P. Decilveo, M.D., Matthew J. Kraeutler, M.D., Jaydeep Dhillon, B.S., Joshua D. Harris, M.D., Sydney M. Fasulo, M.D., Omer Mei-Dan, M.D., and Anthony J. Scillia, M.D.

References

1. Dippmann C, Thorborg K, Kraemer O, Winge S, Hölmich P. Symptoms of nerve dysfunction after hip arthroscopy: an under-reported complication? *Arthroscopy*. 2014;30(2):202-207.
2. Mas Martinez J, Sanz-Reig J, Morales Santias M, et al. Femoroacetabular impingement: prospective study of rate and factors related for nerve injury after hip arthroscopy. *J Orthop*. 2019;16(5):350-353.
3. Reda B, Wong I. Postoperative Numbness: A Survey of Patients After Hip Arthroscopic Surgery. *Orthop J Sports Med*. 2018;6(5):2325967118771535.
4. Mei-Dan O, Kraeutler MJ, Garabekyan T, Goodrich JA, Young DA. Hip distraction without a perineal post: A prospective study of 1000 hip arthroscopy cases. *Am J Sports Med*. 2018;46(3):632-641.
5. Welton KL, Garabekyan T, Kraeutler MJ, et al. Effects of hip arthroscopy without a perineal post on venous blood flow, muscle damage, peripheral nerve conduction, and perineal injury: A prospective study. *Am J Sports Med*. 2019;47(8):1931-1938.
6. Ellman MB, Scheidt M, Skendzel JG, Bhatia S. Successful Hip Arthroscopy Using Postless Distraction in a Professional Basketball Player: A Case Report. *JBJS Case Connect*. 2019;9(4):e0080.
7. Kollmorgen RC, Ellis T, Lewis BD, Harris JD. Achieving Post-Free Distraction in Hip Arthroscopy With a Pink Pad Patient Positioning Device Using Standard Hip Distraction Tables. *Arthrosc Tech*. 2019;8(4):e363-e368.
8. Schaver AL, Mattingly N, Glass NA, Willey MC, Westermann RW. Hip Arthroscopy With and Without A Perineal Post: A Comparison of Early Postoperative Pain. *Arthroscopy*. 2021;37(9):2840-2845.
9. Mei-Dan O, McConkey MO, Young DA. Hip arthroscopy distraction without the use of a perineal post: prospective study. *Orthopedics*. 2013;36(1):e1-5.
10. Salas AP, Mendez-Perez E, Mazek J, Velasco-Vazquez H, Castillo-Trevizo A. The Yoga Mat Technique in Postless Hip Arthroscopy. *Arthrosc Tech*. 2021;10(6):e1525-e1530.
11. Salas AP, Mazek J, Araujo-Reyes D, Gonzalez-Campos M, Castillo-Trevizo A, Garcia JM. The Tutankhamun Technique in Hip Arthroscopy. *Arthrosc Tech*. 2018;7(11):e1167-e1171.
12. Jimenez ML, Haneda M, Pascual-Garrido C. The Hip Arthroscopy Post-less Procedure Impingement (HAPPI) Technique: Achieving Distraction With Standard Hip Tables at Zero Additional Cost. *Arthrosc Tech*. 2020;9(11):e1697-e1701.
13. Merrell G, Medvecky M, Daigneault J, Jokl P. Hip arthroscopy without a perineal post: a safer technique for hip distraction. *Arthroscopy*. 2007;23(1):107.e1-3.