

Good results at 10-year follow-up of arthroscopic "all inside" meniscal sutures without adjuvant technique



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Introduction

- Suture of meniscal lesions is currently recommended,
- Several adjuvant techniques have been proposed to optimize meniscal healing.
- The aim of this study was to analyze the results at 10 years follow-up of a consecutive series of arthroscopic "all inside" meniscal sutures performed without any adjuvant technique.

Methods

- Single-center retrospective study.
- All patients were re-interviewed by phone after 10 years.
- The primary endpoint was the rate of secondary meniscectomy.
- The survival rate of the initial suture (with the criterion of "death" being the need for a repeat operation on the sutured meniscus) and the survival rate of the sutured meniscus (including any repeat suture) were calculated.
- Final functional outcomes were assessed by the Lysholm score

Results

- 73 cases were included, with concomitant reconstruction of anterior cruciate ligament in 31 cases (42%).
- 20 patients required re-intervention on the initially sutured meniscus within a postoperative period of 6 to 96 months: 12 cases of partial meniscectomy (16%) and 8 cases of repeat suture (11%), none of whom underwent subsequent meniscectomy.
- The meniscectomy rate was 16%, not statistically different from the expected rate of 20% ($p=0.45$).
- The survival rate of the initial meniscal suture at 10 years was 67%.
- The rate of initially sutured meniscus at 10 years was 79%
- The median Lysholm score for patients without meniscectomy was 89 points (range, 59 to 100 points).

Conclusion

- This study confirms the long-term success of meniscal sutures.
- The absence of adjuvant techniques during meniscal suturing does not seem to negatively influence the clinical success rate of suture.
- Abandoning these procedures could lead to a broadening of the indications for meniscal suturing.

References

- Abrams GD, Frank RM, Gupta AK, Harris JD, McCormick FM, Cole BJ (2013) Trends in meniscus repair and meniscectomy in the United States, 2005-2011. *Am J Sports Med* 41:2333-2339. <https://doi.org/10.1177/0363546513495641>
- Al-Gburi M, Kristiansen JB, Christensen KB, Krogsgaard MR (2023) Functional performance tests, clinical measurements, and patient-reported outcome measures do not correlate as outcomes 1 year after anterior cruciate ligament reconstruction. *Knee Surg Sports Traumatol Arthrosc* 31:5905-5912. <https://doi.org/10.1007/s00167-023-07648-w>
- Briggs KK, Kocher MS, Rodkey WG, Steadman JR. Reliability (2006) Validity and responsiveness of the Lysholm Knee Score and Tegner Activity Scale for patients with meniscal injury of the knee. *J Bone Joint Surg Am*.88:698-705. <https://doi.org/10.2106/JBJS.E.00339>
- Dai WL, Zhang H, Lin ZM, Shi ZJ, Wang J (2019) Efficacy of platelet-rich plasma in arthroscopic repair for discoid lateral meniscus tears. *BMC Musculoskelet Disord* 20:113. <https://doi.org/10.1186/s12891-019-2500-9>
- Everhart JS, Cavendish PA, Eikenberry A, Magnussen RA, Kaeding CC, Flanigan DC (2019) Platelet-rich plasma reduces failure risk for isolated meniscal repairs but provides no benefit for meniscal repairs with anterior cruciate ligament reconstruction. *Am J Sports Med* 47:1789-1796. <https://doi.org/10.1177/0363546519852616>
- Ghazi Zadeh L, Chevrier A, Farr J, Rodeo SA, Buschmann MD (2018) Augmentation techniques for meniscus repair. *J Knee Surg* 31:99-116. <https://doi.org/10.1055/s-0037-1602247>
- Hagmeijer MH, Kennedy NI, Tagliero AJ, Levy BA, Stuart MJ, Saris DBF, Dahm DL, Krych AJ (2019) Long term results after repair of isolated meniscal tears among patients aged 18 years and younger: an 18-year follow-up study. *Am J Sports Med* 47:799-806. <https://doi.org/10.1177/0363546519844481>
- Koch M, Hammer S, Fuellerer J, Lang S, Pfeifer CG, Pattappa G, Weber J, Loibl M, Nerlich M, Angele P, Zellner J (2019) Bone marrow aspirate concentrate for the treatment of avascular meniscus tears in a one-step procedure-evaluation of an in vivo model. *Int J Mol Sci* 20:1120. <https://doi.org/10.3390/ijms20051120>
- Masaracchio MF, Kirker K, Loghmani P, Gramling J, Mattia M, States R (2022) The prevalence of tibiofemoral knee osteoarthritis following arthroscopic partial meniscectomy is variably reported in general, and over time: a systematic review with a minimum of 5-year follow-up. *Arthrosc Sports Med Rehabil* 4:e1203-e1218. <https://doi.org/10.1016/j.asmr.2022.02.007>
- Ozeki N, Seil R, Krych AJ, Koga H (2021) Surgical treatment of complex meniscus tear and disease: state of the art. *J ISAKOS* 6:35-45. <https://doi.org/10.1136/jisakos-2019-000380>
- Petersen W, Karpinski K, Bierke S, Müller Rath R, Häner M (2022) A systematic review about long-term results after meniscus repair. *Arch Orthop Trauma Surg* 142:835-844. <https://doi.org/10.1007/s00402-021-03906-z>
- Pujol N, Tardy N, Boisrenoult P, Beaufils P (2015) Long-term outcomes of all-inside meniscal repair. *Knee Surg Sports Traumatol Arthrosc* 23:219-224. <https://doi.org/10.1007/s00167-013-2553-5>

References

- Rodriguez AN, Reist H, Liechti DJ, Geeslin AG, LaPrade RF (2022) Shuttling technique for directed Fibrin clot placement during augmented inside-out repair of horizontal meniscus tears. *Arthrosc Tech* 11:e2205 e2211. <https://doi.org/10.1016/j.eats.2022.08.027>
- Schweizer C, Hanreich C, Tscholl PM, Blatter S, Windhager R, Waldstein W (2023) Meniscal repair outcome in 3829 patients with a minimum follow-up from 2 years up to 5 years: a meta-analysis on the overall failure rate and factors influencing failure. *Am J Sports Med* 52:822-831. <https://doi.org/10.1177/03635465231158385>
- Shelbourne KD, Benner RW, Nixon RA, Gray T (2015) Evaluation of peripheral vertical nondegenerative medial meniscus tears treated with trephination alone at the time of anterior cruciate ligament reconstruction. *Arthroscopy* 31:2411–2416. <https://doi.org/10.1016/j.arthro.2015.06.024>
- Solheim E, Hegna J, Inderhaug E (2016) Long-term outcome after all-inside meniscal repair using the RapidLoc system. *Knee Surg Sports Traumatol Arthrosc* 24:1495-1500. <https://doi.org/10.1007/s00167-015-3642-4>
- Steadman JR, Matheny LM, Singleton SB, Johnson NS, Rodkey WG, Crespo B, Briggs KK (2015) Meniscus suture repair: minimum 10-year outcomes in patients younger than 40 years compared with patients 40 and older. *Am J Sports Med* 43:2222-2227. <https://doi.org/10.1177/0363546515591260>
- Thaunat M, Vrgoc G, O'Loughlin PF, Jan N, Clowez G, Fayard JM, Sonnery-Cottet B (2018) Arthroscopic all inside repair of medial meniscus grade 2 horizontal cleavage tear using additional posteromedial portal. *Arthrosc Tech* 7:e939-e943. <https://doi.org/10.1016/j.eats.2018.05.002>
- Uchio Y, Ochi M, Adachi N, Kawasaki K, Iwasa J (2003) Results of rasping of meniscal tears with and without anterior cruciate ligament injury as evaluated by second-look arthroscopy. *Arthroscopy* 19:463–469. <https://doi.org/10.1053/jars.2003.07073x>
- Woodmass JM, LaPrade RF, Sgaglione NA, Nakamura N, Krych AJ (2017) Meniscal repair: Reconsidering indications, techniques, and biologic augmentation. *J Bone Joint Surg Am* 99:1222-1231. <https://doi.org/10.2106/JBJS.17.00297>
- Zimmerer A, Sobau C, Nietschke R, Schneider M, Ellermann A (2018) Long-term outcome after all inside meniscal repair using the FasT-Fix system. *J Orthop* 15:602-605. <https://doi.org/10.1016/j.jor.2018.05.042>
- Wright RW, Huston LJ, Haas AK (2023) Ten-year outcomes of second-generation, all-inside meniscal repair in the setting of ACL reconstruction. *J Bone Joint Surg Am* 105:908-914. <https://doi.org/10.2106/JBJS.22.01196>
- Zicaro JP, Garrido N, Garcia-Mansilla I, Yacuzzi C, Costa-Paz M (2023) Failure rate, return-to-sports and magnetic resonance imaging after meniscal repair: 119 patients with 7 years mean follow up. *World J Orthop* 14:612-620. <https://doi.org/10.5312/wjo.v14.i8.612>