Systematic Review

Prevalence, Biomechanics, and Pathologies of the Meniscofemoral Ligaments: A Systematic Review

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Purpose: To systematically review the literature to examine current understanding of the meniscofemoral ligaments (MFLs), their function, their importance in clinical management, and known anatomical variants. **Methods:** A systematic review was conducted following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines using PubMed, EMBASE, and Cochrane databases. Studies were included if they reported on the biomechanical, radiographic, or arthroscopic evaluation of human MFLs, or if they reported on an anatomical variant. These were then categorized as cadaveric, radiographic, or clinical. Biomechanical, radiographic, patient-reported, and functional outcomes data were recorded. **Results:** Forty-seven studies were included in the qualitative analysis, and 26 of them were included in the quantitative analysis. Of these, there were 15 cadaveric, 3 arthroscopic, and 9 radiographic studies that reported on the prevalence of MFLs. Overall, when looking at all modalities, the presence of either the anterior or posterior MFL (aMFL, pMFL) has been noted to be 70.8%, with it being the aMFL 17.4% and the pMFL 40.6%. The presence of both ligaments occurs in approximately 17.6% of individuals. Eleven reported on mean MFL length and thickness. When evaluating mean length in both men and women, the aMFL has been reported between 21.6 and 28.3 mm and the pMFL length in this population is between 23.4 and 31.2 mm. Five reported on cross-sectional area. Nine additional papers report anatomical variants. **Conclusions:** This review shows that there continues to be a variable incidence of MFLs reported in the literature, but our understanding of their function continues to broaden. A growing number of anatomic and biomechanical studies have demonstrated the importance of the MFLs in supporting knee stability. Specifically, the MFLs serve an important role in protecting the lateral meniscus and augmenting the function of the posterior cruciate ligament. **Clinical Relevance:** Our findings will aid the clinician in both identifying and treating pathologies of the meniscofemoral ligaments.

The knee is both the largest and most susceptible joint to injury in the body.[1] An accurate and detailed understanding of knee anatomy, including its variants, is necessary to diagnose and treat the numerous pathologies of the knee. Many advances have been made to further elucidate the function of the complex network of ligaments, tendons, and menisci as they work in concert to stabilize the joint. While much is known about each of these structures' contributory effects on knee biomechanics, our understanding is still evolving.

As part of this complex network, there are several ligaments that span the femur and menisci. The medial meniscus is primarily connected to the femur via the deep medial ligament.[2] The lateral meniscus is connected to the femur via 2 ligaments of variable incidence, the meniscofemoral ligaments (MFLs).[3-5] These ligaments are named in relation to the posterior cruciate ligament (PCL). The anterior meniscofemoral ligament (aMFL), also known as the ligament of Humphrey, has been shown to have a variable origin, with approximately 80% attaching distally to the posteromedial bundle of the PCL (depicted in Figs 1 and 2).[3,6] The posterior meniscofemoral ligament (pMFL),

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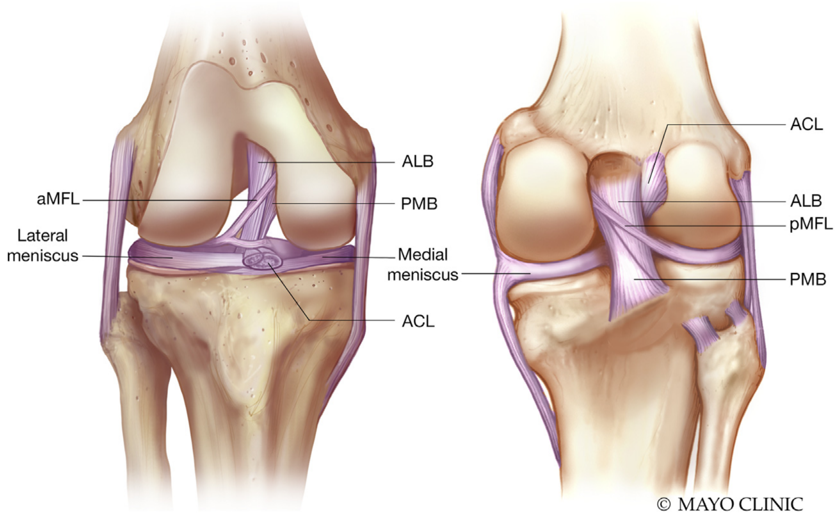

Fig 1. Anterior and posterior illustrations of the right knee depicting the origin and insertion sites of the aMFL and pMFL in relation to the PCL and menisci. (ACL, anterior cruciate ligament; ALB, anterolateral bundle; aMFL, anterior meniscofemoral ligament; PCL, posterior cruciate ligament; PLB, posterolateral bundle; PMB, posteromedial bundle; pMFL, posterior meniscofemoral ligament;)

also known as the ligament of Wrisberg, originates directly proximal to the medial intercondylar ridge, proximal to the posteromedial bundle of the PCL.[6]

Extensive research has detailed the position and incidence of the MFLs.[7-19] However, a limited number of studies have proposed theories regarding their function.[20-24] As their role in knee biomechanics continues to unfold, these structures have potential implications for the advancement of surgical intervention on the PCL and menisci. The purpose of this study was to systematically review the literature to examine current understanding of the MFLs, their function, their importance in clinical management, and known anatomical variants. We hypothesize that these ligaments have a variable incidence in the literature, with at least one being present in the majority of people, and that full understanding of their clinical significance is still evolving.

Methods

Institutional review board reviewed this study, and it was deemed to be exempt. This systematic review was conducted using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[25] Two independent reviewers (D.G.D. and S.T.) conducted the initial literature search in December 2020 using PubMed, EMBASE, and Cochrane Central Register of Controlled Trials databases. A broad-based search was conducted to ensure no studies were missed using the following search terms: "meniscofemoral ligament" OR "meniscofemoral ligaments." All searches were conducted using a date range from database inception to current time of search. Studies were included in the systematic review if (1) they reported biomechanical, radiographic, or arthroscopic evaluation of human meniscofemoral ligaments or (2) described an anatomical variant. Only full-text manuscripts written in the English language were included and no level of evidence restrictions were imposed. Technique articles, review articles, letters to the editor, animal studies, or studies not published in the English language were excluded. Case reports of unique anatomical variants were included.

Statistical Analysis

Studies were classified as either cadaveric, radiographic, or arthroscopic analyses. Papers were assessed for reporting prevalence of MFLs. These data were recorded as total number of specimens or patients, a single ligament, aMFL only, total number of aMFLs, pMFL only, total number of pMFLs, and presence of both ligaments. Biomechanical data regarding length, width, and cross-sectional area also were collected if

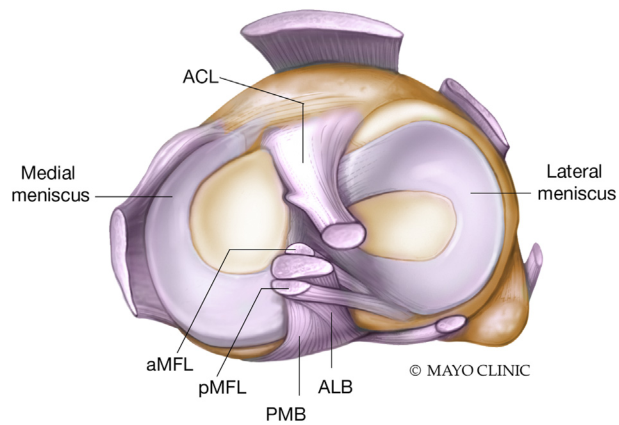

Fig 2. Axial illustration of the knee depicting insertion sites of the meniscofemoral ligaments in relation to the PCL on the tibia. (ACL, anterior cruciate ligament; ALB, anterolateral bundle; PCL, posterior cruciate ligament; PMB, posteromedial bundle.)

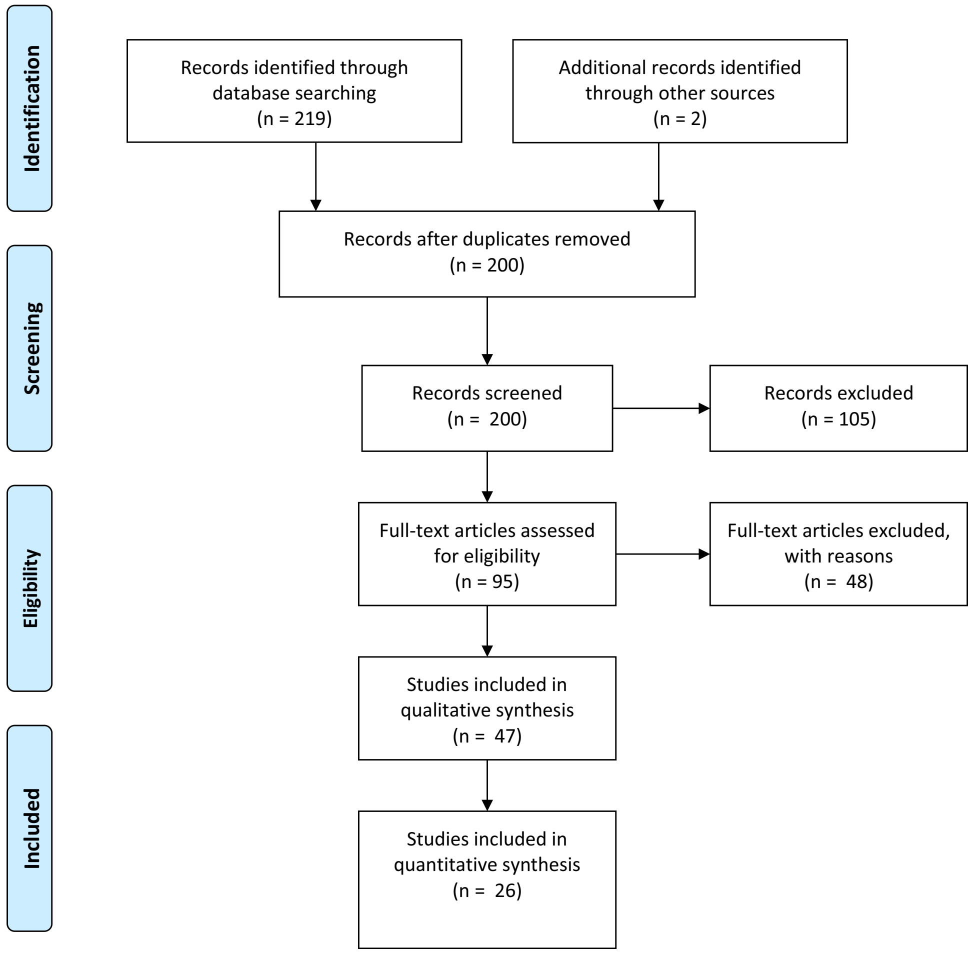

Fig 3. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flowsheet demonstrating literature review process.

reported. Descriptive statistics (mean, range, percentage, and standard deviation) were performed using Microsoft Excel (Redmond, WA).

Results

The search results were reviewed independently by 2 authors (D.G.D. and S.T.) to select studies for inclusion in the review. After removal of duplicates, the initial keyword literature search produced a total of 219 references. Ninety-five studies were identified for inclusion from the literature search based on appropriateness of title and abstract content. These 95 studies then underwent full-text review to confirm appropriateness for inclusion. The reference list and text of each latter manuscript was cross-referenced to identify any additional studies related to the study topic not previously found. Following full-text review and cross-referencing, 47 studies met all criteria for inclusion and were included in the review.[7-24,26-54] After each step of the review process, any disagreement on inclusion of a study was resolved by discussion and agreement between the two reviewers. If consensus could not be reached, then inclusion was decided by the senior author (A.C.). A flow diagram outlining the selection process is found in Figure 3. Of these 47 studies, 26 were subsequently included for quantitative review based on study design to allow for simplified organization and improved comparison between similar studies.[7,8,10,13,15-20,24,27,29,30,32-35,37-40,46,51,53,54] All studies describing anatomical variants were summarized.

Prevalence

The prevalence of aMFL, pMFL, or both has been variably reported in the literature as seen in Table 1.[7,8,10,13,15-20,24,27,29,30,32-35,37-40,46,51,53,54] Several different modalities have been used to evaluate its prevalence, including cadaveric dissection, arthroscopy, and magnetic resonance imaging (MRI). Of these, there were 15 cadaveric, 3 arthroscopic, and 9 radiographic studies that reported on the prevalence of MFLs. Most of the reported prevalence data cited in the literature is derived from cadaveric dissection studies, although these present a wide range of values.[8,10,13,15,17,18,27,29,35,36,38-40,51,54] The presence of either the aMFL or pMFL has ranged from 16.7-100%, with it being only the aMFL 10% to

Table 1. Summary of Reported Prevalence of MFLs in the Literature

Study	Number of Subjects/Specimens	Single Ligament n, (%)	aMFL Only n, (%)	Total aMFL n, (%)	pMFL Only n, (%)	Total pMFL n, (%)	Both n, (%)
Cadaveric Dissection							
Brantigan and Voshell[29]	50	50 (100)	20 (40)	23 (46)	30 (60)	33 (66)	3 (6)
Heller and Langman[40]	140	99 (70.7)	42 (30)	50 (35.7)	41 (29.3)	49 (35)	8 (5.7)
Yamamoto and Hirohata[54]	100	100 (100)	27 (27)	76 (76)	24 (24)	73 (73)	49 (49)
Kusayama et al.[17]	26	26 (100)	6 (23.1)	18 (69.2)	8 (30.8)	20 (76.9)	12 (46.2)
Harner et al.[39]	8	8 (100)	2 (25)	4 (50)	4 (50)	6 (75)	2 (25)
Poynton et al.[10]	42	42 (100)	8 (19)	35 (83.3)	11 (26.2)	38 (90.5)	27 (64.3)
Gupte et al.[37]	28	15 (53.6)	7 (25)	18 (64.3)	8 (28.6)	19 (67.9)	11 (39.3)
Gupte et al.[34]	84	78 (92.9)	20 (23.8)	62 (73.8)	16 (19)	58 (69)	42 (50)
Nagasaki et al.[15]	30	5 (16.7)	5 (16.7)	5 (16.7)	0 (0)	0 (0)	0 (0)
Amadi et al.[27]	5	1 (20)	1 (20)	5 (100)	0 (0)	4 (80)	4 (80)
Ramos et al.[8]	30	n/a	n/a	n/a	n/a	12 (40)	n/a
Han et al.[38]	100	86 (86)	0 (0)	1 (1)	86 (86)	87 (87)	1 (1)
Osti et al.[13]	30	n/a	n/a	n/a	n/a	25 (83.3)	n/a
Aggarwal et al.[18]	38	38 (100)	4 (10.5)	14 (36.8)	24 (63.2)	34 (89.5)	10 (26.3)
Tanifuji et al.[51]	28	n/a	n/a	6 (21.4)	n/a	24 (85.7)	5 (17.9)
Arthroscopy							
Gupte et al.[35]	68	64 (94.1)	60 (88.2)	66 (97.1)	10 (14.7)	16 (23.5)	6 (8.8)
Nagasaki et al.[15]	38	32 (100)	n/a	14 (36.8)	n/a	27 (71.1)	n/a
Ranalletta et al.[7]	140	n/a	n/a	140 (100)	n/a	n/a	n/a
MRI							
Watanabe et al.[53]	200	131 (65.5)	65 (32.5)	71 (35.5)	66 (33)	72 (36)	6 (1.2)
Vahey et al.[24]	109	23 (21.1)	10 (9.2)	11 (10.1)	13 (11.9)	14 (12.8)	1 (2.0)
Cho et al.[30]	100	79 (79)	3 (3)	17 (17)	76 (76)	90 (90)	14 (14)
Lee et al.[16]	138	112 (81.2)	4 (2.9)	6 (4.3)	108 (78.3)	110 (79.7)	2 (1.4)
Abreu et al.[20]	49	29 (59.2)	5 (10.2)	27 (55.1)	24 (49.0)	46 (93.9)	22 (44.9)
Bintoudi et al.[19]	500	381 (76.2)	59 (11.8)	140 (28)	322 (64.4)	403 (80.6)	81 (16.2)
Erbagci et al.[33]	100	82 (82)	12 (12)	40 (40)	42 (42)	70 (70)	28 (28)
Ebrecht et al.[32]	448	294 (65.6)	77 (17.2)	97 (21.7)	217 (48.4)	237 (52.9)	20 (4.5)
Röhrich et al.[46]	342	324 (100)	79 (23.1)	241 (70.6)	82 (24)	244 (71.3)	162 (47.4)
Overall totals	3021	2,138 (70.8)	526 (17.4)	1,212 (40.1)	1,227 (40.6)	1,841 (60.9)	531 (17.6)

aMFL, anterior meniscofemoral ligament; MFL, meniscofemoral ligament; MRI, magnetic resonance imaging; n/a, not available; pMFL, posterior meniscofemoral ligament.

40% of the time and only the pMFL 24% to 86% of the time. The presence of both ligaments has varied from 1% to 64.3%. Among the 3 arthroscopic studies of these structures, the presence of either the aMFL or pMFL has been seen >94% of the time, with it being the aMFL 88.2% and the pMFL 14.7%.[7,15,35] The presence of both ligaments has been seen 8.8% of the time. Finally, in the 9 included MRI studies, the presence of either the aMFL or pMFL has ranged from 21.1% to 100%, with it being the aMFL 2.9% to 32.5% and the pMFL 11.9% to 78.3%.[16,19,20,24,30,32,33,46,53] The presence of both ligaments has varied from 1.2% to 47.4%. Overall, when we looked at all modalities, the cumulative mean of either the aMFL and/or pMFL being present was found to be 70.8%.[7,8,10,13,15–20,24,27,29,30,32–35,37-40,46,51,53,54] The presence of both ligaments occurs in approximately 17.6% of individuals.[7,8,10,13,15–20,24,27,29,30,32-35,37-40,46,51,53,54]

Table 2. Mean MFL Lengths and Thickness

Study	Mean aMFL Length, mm ± SD	Mean pMFL Length, mm ± SD	Mean aMFL Thickness, mm ± SD	Mean pMFL Thickness, mm ± SD
Abreu et al.[20]	n/a	n/a	1.9 ± 0.6	1.8 ± 0.7
Aggarwal et al.[18]	25.7 ± 2.0	31.6 ± 4.9	4.9 ±0.7	4.9 ± 1.2
Poynton et al.[10]				
Male	27.1 ± 2.2	31.1 ± 2.5	n/a	n/a
Female	24.4 ± 3.4	27.6 ± 3.7	n/a	n/a
Yamaoto and Hirohata[54]	28.3	31.2	n/a	n/a
Candiollo and Gautero[55]	21.6	23.4	n/a	n/a
Ebrecht et al.[32]				
Male	n/a	28.2 ± 3.7	n/a	2.2 ± 1.3
Female	n/a	25.4 ± 3.2	n/a	2.3 ± 1.3
Erbagci et al.[33]				
Male	11.1 ± 2.6	28.8 ± 5.5	2.5 ± 0.9	2.3 ± 1.2
Female	9.9 ± 4.8	25.6 ± 5.5	2.5 ± 1.0	2.3 ± 1.2
Osti et al.[13]	n/a	23.8 ± 3.17	n/a	n/a
Röhrich et al.[46]	22 ± 3	28 ± 4	n/a	n/a
Total	21.3 ±7.0	27.7 ± 2.9	3.0 ± 0.8	2.6 ± 1.2

aMFL, anterior meniscofemoral ligament; MFL, meniscofemoral ligament; n/a, not available; pMFL; posterior meniscofemoral ligament; SD, standard deviation.

Length, Width, and Cross-Sectional Area of aMFL and pMFL

The mean aMFL and pMFL length and thickness was reported in several studies as seen in Table 2. When we evaluated the mean length in both men and women, the aMFL has been reported between 21.6 and 28.3 mm. The pMFL length in this population was between 23.4 and 31.2 mm. The length in both aMFL and pMFL has been reported as longer in men than women although not always statistically significant.

When we evaluated mean thickness in both men and women, the aMFL has been reported between 1.9 ± 0.6 and 25.7 ± 2.0 mm. The pMFL length in this population was between 1.8 ± 0.7 and 31.6 ± 4.9 mm. The cross-sectional area of the aMFL and pMFL as reported in the literature can be seen in Table 3. The aMFL ranges from 2.2 ± 1.7 to 14.7 ± 14.8. The pMFL ranges from 3.3 ± 2.6 to 20.9 ± 11.6.

Clinical Pathology

Meniscofemoral Ligaments and Pseudotears of the Lateral Meniscus

Investigations by of the aMFL and pMFL by Gupte et al.[34] and Poyton et al.[9] have demonstrated an interplay between them and the posterior horn of the lateral meniscus during knee flexion and extension which has led to speculation that these ligaments may have a role meniscal pathology. Despite this relationship, Abreu et al.[20] found no association between presence of one or both MFLs and occurrence of medial or lateral meniscal tears.

Given their intimacy with the menisci, MFLs have falsely been diagnosed as tears of the posterior horn of the lateral meniscus, or "pseudotears" on MRI with up to a 63% incidence.[12,20,24] These pseudotears have particularly been found to have an oblique orientation from anterosuperior to posteroinferior and less commonly with a vertical orientation.[20,24]

Discoid Meniscus and pMFL Attachment

In patients with complete discoid menisci, it has been noted that the pMFL has an increased thickness and presents with a higher riding attachment as compared with non-discoid menisci.[26,41,43] Further, a lower riding attachment has been related to a decreased incidence of lateral meniscus tears.[42]

Anatomic Variants of Meniscofemoral Ligaments

The following anatomical variants are summarized in Table 4.

Table 3. Mean MFL Cross-Sectional Areas

Study	Mean aMFL CSA, mm^2 ± SD	Mean pMFL CSA, mm^2 ± SD
Kusayama et al.[17]	7.8 ± 4.7	6.7 ± 4.1
Gupte et al.[37]	14.7 ± 14.8	20.9 ± 11.6
Nagasaki et al.[15]	2.3 ± 1.2	7.5 ± 2.5
Osti et al.[13]	n/a	3.62 ± 1.0
Röhrich et al.[46]	2.2 ± 1.7	3.3 ± 2.6

aMFL, anterior meniscofemoral ligament; CSA, cross-sectional area; MFL, meniscofemoral ligament; n/a, not available; pMFL; posterior meniscofemoral ligament; SD, standard deviation.

Table 4. Summary of Previously Described Anatomical Variants

Study	Anatomical Variant
Ahn et al.[26]	Discoid lateral meniscus and pMFL
Anderson et al.[28]	Anterior MFL of the medial meniscus, found in 0.44% of 2,745 patients
Verhey et al.[56]	Description of an intra-substance MFL of the PCL; "internal MFL (iMFL)"
Hamada et al.[23]	Anteromedial meniscofemoral ligament (amMFL) in an ACL-injured knee
Kim et al.[43]	Description of amMFL
Kim et al.[44]	Anterolateral MFL of the lateral meniscus (alMFL)
Rosenberg et al.[47]	Discoid lateral meniscus and pMFL
Silva and Sampaio[48]	alMFL mimicking course of native ACL
Soejima et al.[49]	Three amMFL cases with variable attachments to lateral meniscus and tibia
Sonin and Resiter[50]	Intra-articular ganglion of the knee arising from aMFL

ACL, anterior cruciate ligament; alMFL, anterolateral meniscofemoral ligament; amMFL, anteromedial meniscofemoral ligament; aPFL, posterior meniscofemoral ligament; pMFL, posterior meniscofemoral ligament.

Anteromedial Meniscofemoral Ligament (amMFL)

A number of studies reviewed reported the presence of the amMFL as a rare structure arising from the root ligament of the anterior horn of the medial meniscus, running anterior to the anterior cruciate ligament and attaching to the posterolateral wall of the femoral intercondylar fossa.[43,44,49,52] Kim et al. have suggested there may be a relation of the amMFL to medial meniscus injury secondary to abnormal motion and a larger absolute size as compared with knees without an amMFL.[43,44,49] This is particularly true in patients where the amMFL variant does not attach to the tibia and the amMFL acts as an anchor for the anterior horn of the medial meniscus.[23,43,49]

Anterolateral Meniscofemoral Ligament

The anterolateral meniscofemoral ligament has been described by Kim et al. and Silva et al. as an extremely rare anomaly of the anterior horn of the lateral meniscus which merged with an anteromedial meniscofemoral ligament in some cases and may be associated with agenesis of the anterior cruciate ligament.[43,44,48]

Discussion

We report, when including MRI, cadaveric, and arthroscopic studies, that the presence of either the anterior or posterior MFL (aMFL, pMFL) to be 70.8%, although this can be highly variable. The presence of both ligaments occurred in approximately 17.6% of individuals. The mean length in both men and women varies, but on average, the aMFL has been reported between 21.6 and 28.3 mm and the pMFL length between 23.4 and 31.2 mm. These ligaments contribute to the complex biomechanics of the knee to synergistically provide stability. In particular, the meniscofemoral ligaments may play a role in allowing the lateral meniscus to augment femorotibial congruency and reduce meniscal contact pressure in both flexion and extension.[21] Thus, it is the authors' goal that this review will continue to advance the understanding of the MFLs, their function, and their importance in clinical management.

Multiple mechanisms have been proposed regarding the precise function of the MFLs during flexion and extension, including a taut pMFL in both flexion and extension versus a reciprocal tightening and loosening of the aMFL and pMFL, both of which result in tangential traction applied to the posterior horn.[57-59] In this review, studies by Gupte et al.[34] and Poyton et al.[9] noted an interplay between these ligaments and the lateral meniscus which could play a role in meniscal pathology. It should also be noted that transection of the MFLs has previously shown an increase in femorotibial contact pressure.[21] However, as noted in this review, MFLs have previously been incorrectly been diagnosed as tears of the lateral meniscus and should be kept in mind when addressing this pathology.

The medial meniscus has long been thought of as largely fixed, responding only to the direct force applied by the medial femoral condyle and to the modest pull of the deep medial ligament.[60] In this review, Kim et al. noted that the presence of an amMFL may be related to medial meniscal injury secondary to abnormal motion. This ligament may anchor to the anterior horn of the medial meniscus altering its motion in flexion and extension.

In addition to possible protection of the lateral meniscus, the MFLs also support the posterior cruciate ligament in limiting anteroposterior laxity, both as a mechanical and proprioceptive restraint.[36] As a mechanical restraint, the MFLs provide similar loading capabilities to the posterior fiber bundle of the PCL.[4,40,61] Consequently, an isolated injury to the PCL with preservation of the MFLs may be associated with a reduced posterior draw relative to a combined injury of the PCL and MFLs.[62] As a proprioceptive restraint, neural structures contained within the MFLs near their meniscal attachments found in both human cadaveric and animal studies suggest that the MFLs participate in a feedback loop with muscles around the knee to limit posterior draw.[36] In the context of injury to the PCL and lateral meniscal root, specific evaluation of the MFLs by arthroscopy or MRI may be supported as an indicator of residual function, as intact MFLs may warrant more conservative management of PCL injury. Despite the aforementioned findings, further studies are necessary to elucidate differences in patient outcomes between intact and injured MFLs in a PCL-deficient knee.

The integral connection between the MFLs, the lateral meniscus, and the PCL has several implications for surgical management. In the case of lateral meniscus tear with disruption of the MFLs, the resulting increase in femorotibial contact pressure necessitates a root repair. As described by Forkel et al., posterior horn fixation reduces lateral compartment pressure to normal values prior to MFL transection.[21] In associated ACL and posterior root tears, the authors describe a "pullout repair" of the meniscal root through the tibial ACL tunnel, which also normalizes lateral compartment intra-articular pressures.[21] Additional studies based on finite element analyses further support these findings, as fixation of posterior root during ACL reconstruction in the MFL-deficient knee is postulated to prevent meniscal subluxation and premature osteoarthritis secondary to elevated intra-articular pressures.[63]

For partial or total meniscectomy in which removal of the posterior horn is indicated, care must be taken to first transect the MFLs to avoid iatrogenic injury to the posterior knee compartment. The MFL could potentially disrupt the PCL complex upon removal of the posterior horn.[37] MRI study with evaluation of MFLs before surgery and specific arthroscopic assessment of MFL status intraoperatively may reduce the risk of PCL damage.

In instances in which meniscal preservation is no longer an option, the MFLs might also be considered in meniscal allograft transplantation. In meniscal transplantation, current techniques involve total meniscectomy (including release of the MFLs) and attachment of a cryopreserved meniscal allograft to the tibia by open or minimally invasive arthroscopy.[64] Many studies demonstrate high rates of complications for meniscal transplant, including tears requiring repair and allograft removal.[65-69] Preservation of MFLs these procedures may help to maintain normal biomechanical function and reduce complication rates.

Future studies making use of computer-based motion analysis would be useful in confirming the proposed biomechanical function of MFLs. These studies might also reveal other functions of the MFLs that have not previously been described. Finally, the extent to which MFLs should be considered in management of meniscal, PCL, and combined knee injuries is yet to be determined. Examining outcomes of PCL-deficient knees with intact versus injured MFLs and their response to surgical and nonsurgical treatment would be beneficial in guiding patient-centered treatment.

Limitations

The findings of this study should be interpreted in the context of the following limitations. First, many retrospective reviews were included in this study, which are limited by the quality of the data, completeness, and accuracy of reporting. Second, many cadaveric studies are limited by small numbers. Third, the wide range in incidence of MFLs seen could be due to varying modalities of identification, from radiographic to arthroscopic. In addition, owing to the large number of studies reported, study quality was not formally assessed. However, this is a systematic review, which is strengthened by the comprehensiveness of the review, and is a summary of our current, possibly incomplete, understanding of the MFL.

Conclusions

This review shows that there continues to be a variable incidence of MFLs reported in the literature, but our understanding of their function continues to broaden. A growing number of anatomic and biomechanical studies have demonstrated the importance of the meniscofemoral ligaments in supporting knee stability. Specifically, the MFLs serve an important role in protecting the lateral meniscus and augmenting the function of the PCL.

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