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Prominent synovial plicae in radiocapitellar joints as a potential cause of lateral elbow pain: clinico-radiologic correlation

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Background: Thickened synovial plicae in the radiocapitellar joint have been reported as a cause of lateral elbow pain. However, few reports regarding diagnosis based on detailed physical examination and magnetic resonance imaging (MRI) findings are available. The aims of this study were to characterize the clinical manifestations of this syndrome and to investigate the clinical outcomes of arthroscopic surgery.

Methods: We analyzed 20 patients who received a diagnosis of plica syndrome and underwent arthroscopic débridement between 2006 and 2011. The diagnosis was based on physical examination and MRI findings. Elbow symptoms were assessed using a visual analog scale for pain; the Mayo Elbow Performance Index; and the Disabilities of the Arm, Shoulder and Hand score at a minimum of 2 years after surgery. The thickness of plicae on MRI was compared with the normal data in the literature.

Results: Plicae were located on the anterior side in 1 patient, on the posterior side in 15, and on both sides in 4. Radiocapitellar joint tenderness and pain with terminal extension were observed in 65% of patients. MRI showed enlarged plicae consistent with intraoperative findings. The mean plica thickness on MRI was 3.7 ± 1.0 mm, which was significantly thicker than the normal value. The mean lengths (mediolateral length, 9.4 ± 1.6 mm; anteroposterior length, 8.2 ± 1.7 mm) were also greater than the normal values. The visual analog scale score for pain decreased from 6.3 to 1.0 after surgery. The Mayo Elbow Performance Index and Disabilities of the Arm, Shoulder and Hand scores improved from 66 to 89 and from 26 to 14, respectively.

The local Institutional Review Board approved this retrospective case series (Samsung Medical Center Institutional Review Board File No. 2015-12-124).

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Conclusions: Specific findings of the physical examination and MRI provide clues for the diagnosis of plica syndrome. Painful symptoms were successfully relieved after arthroscopic débridement.
Level of evidence: Level IV; Case Series Design; Diagnostic Study

Keywords: Plica; elbow; arthroscopy; synovial fold; lateral epicondylitis; MRI

Lateral epicondylitis is the most common cause of lateral elbow pain. However, we occasionally encounter patients with symptoms or physical signs incompatible with either lateral epicondylitis or other common pathologies. Recently, the presence of pathologic radiocapitellar synovial plica has emerged as a potential source of lateral elbow pain.[1,2,5] A synovial plica, or fold, is a prominent synovial membrane that is a remnant of the normal embryonic development of the synovial membrane.[7,14] Normally, existing plicae have no known function and do not cause any symptoms.[11] However, occasionally, thickened plicae may irritate the radiocapitellar joint during joint motion, especially when they become hypertrophied following trauma or repetitive activities. Symptomatic synovial plicae are infrequently encountered as a cause of lateral elbow pain, and they have been variously termed "plica syndrome," "synovial fringes," or "meniscus-like structures."[1,2,5,6,8,9,12,13,15,19] This lesion is easily misdiagnosed as either a loose body in the joint or lateral epicondylitis owing to the similar pain location.

There is no consensus regarding the diagnosis and treatment of this rare syndrome, and the clinical results after surgery remain a subject of controversy. As current knowledge of the physical signs and magnetic resonance imaging (MRI) findings of pathologic plicae is largely limited, we investigated cases of pure radiocapitellar plica syndrome as a means to elucidate this pathologic entity. The aims of this study were (1) to characterize the clinical properties for diagnostic clues, (2) to analyze the MRI findings, and (3) to evaluate the clinical outcomes after arthroscopic débridement. The findings presented may facilitate the diagnosis of plica syndrome in patients with lateral elbow pain.

Materials and methods

Clinical demographic characteristics

We undertook a review of cases of synovial plica that were treated surgically at 2 tertiary referral hospitals between March 2006 and February 2011. The inclusion criteria were (1) age of 18 years or older and (2) arthroscopic examination and excision of synovial plica. We identified a total of 29 patients in the database. The exclusion criteria were as follows: (1) lateral epicondylitis, intra-articular loose body, osteochondral lesion, or posterolateral instability in the same elbow; (2) surgical history in the same elbow; and (3) notable osteoarthritic or post-traumatic radiographic changes. After exclusion, 24 patients were eligible for review. Four patients were lost to postoperative follow-up in less than 2 years. Finally, a total of 20 patients (83% follow-up rate) were analyzed.

Strict diagnostic criteria for synovial plica were used to identify a homogeneous group of patients with pure radiocapitellar plica syndrome. Patients typically complained of lateral elbow pain, possibly accompanied by a popping or snapping sensation during elbow movement. Owing to the similar pain location, we carefully differentiated synovial plica from lateral epicondylitis. Typical physical signs associated with lateral epicondylitis were (1) tenderness on deep palpation at the lateral epicondyle over the extensor origin area and (2) pain associated with the lateral epicondyle during resisted dorsiflexion of the wrist with the elbow in full extension. Positive results on these 2 provocative tests indicated a diagnosis of lateral epicondylitis, which excluded patients from the study.

Preoperative demographic data, physical examination results, and intraoperative findings were gathered from electronic medical records to analyze retrospectively. The items examined for the physical signs were tenderness on the soft spot associated with the posterior radiocapitellar joint, any extension deficit of the elbow, pain on the posterolateral side during terminal extension of the elbow joint, and flexion-pronation. The flexion-pronation test was conducted by reproducing snapping with passive flexion of the pronated elbow.[2]

In all subjects, conservative treatment including activity modification, physical therapy, and medication including nonsteroidal anti-inflammatory drugs was attempted for at least 3 months. A corticosteroid injection into the area of discomfort, that is, the maximal tender point, was administered in 7 patients (35%). If conservative measures failed despite appropriate patient compliance, arthroscopic assessment and treatment were considered.

Patients were asked to report visual analog scale (VAS) scores for pain based on the most severe pain during work or activities of daily living throughout the previous week. Postoperative clinical outcomes were collected at the final follow-up by an independent fellowship-trained orthopedic surgeon. Clinical evaluation included repeated physical examination as well as calculation of the Mayo Elbow Performance Index (MEPI) and Disabilities of the Arm, Shoulder and Hand scores. Overall satisfaction after surgery was defined based on a 5-point Likert-type scale as completely dissatisfied, mostly dissatisfied, neutral, mostly satisfied, or completely satisfied.

The mean follow-up duration was 2.9 years (range, 2.0-6.2 years). There were 11 male and 9 female patients with a mean age of 42 years (range, 18-63 years). The dominant arm was involved in 13 patients (65%). The average time interval between the onset of symptoms and arthroscopic surgery was 15.7 months (range, 4-60 months). Of the patients, 5 (25%) were able to recall the traumatic event associated with the elbow. No patient was involved in a workers' compensation case. Plica syndrome was preoperatively diagnosed or suspected in 18 patients, whereas the diagnosis was confirmed intraoperatively in 2.

Analysis of radiologic data

A simple radiograph was used to exclude osteoarthritic changes involving the joint, loose body, deformity, or previous fracture.

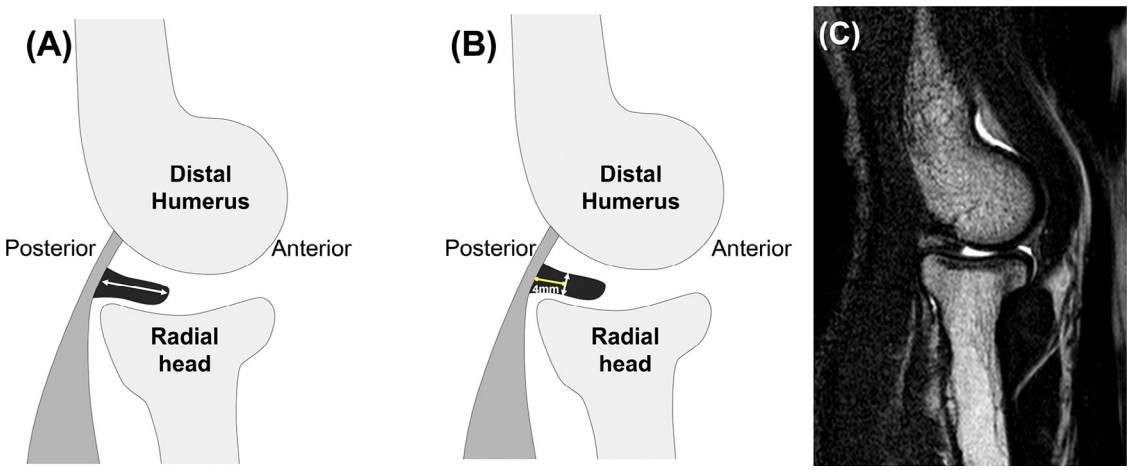

Figure 1 Measurement of length and thickness of posterior plica based on sagittal magnetic resonance imaging. (**A**) The anteroposterior length (*arrow*) of the plica was measured. (**B**) The craniocaudal thickness was measured at a distance of 4 mm (*arrow*) from the capsule. (**C**) A prominent posterior plica was observed on a sagittal T2 magnetic resonance image.

MRI findings were used adjunctively to assess the thickness of the plica and to exclude other pathology. All the available MRI findings in 15 patients (75%) were reviewed. MRI was performed on a 1.5-T imaging system (Genesis Sigma; General Electric Healthcare, Chicago, IL, USA) using an extremity coil in our institution. Patients were imaged in the supine position, with the elbow extended at the side and the forearm supinated. Images were obtained in the coronal, axial, and sagittal planes with T1-weighted spin-echo sequences (repetition time [TR], 350 milliseconds; echo time [TE], 9 milliseconds; section thickness, 3 mm) complemented by T2-weighted turbo spin-echo fat-suppressed images (TR, 2963.5 milliseconds; TE, 100 milliseconds; section thickness, 3 mm). Occasionally, proton density–weighted spin-echo sequences were also examined (TR, 2383.3 milliseconds; TE, 26 milliseconds; section thickness, 3 mm). MRI findings showed a meniscus-like tissue of low signal intensity in the lateral aspect of the radiocapitellar joint that was interposed between the radial head and the capitulum on T2-weighted or proton density–weighted coronal and sagittal images. Synovial plicae were located on either the anterolateral side, posterolateral side, or both sides of the joint. Radiologic measurement was performed by an orthopedic surgeon (H.I.L.) who had sufficient experience in MRI reading.

The dimensions of the synovial plica were measured with electronic calipers using the Centricity Radiology RA 1000 picture archiving and communication system (General Electric Healthcare). The craniocaudal thickness and anteroposterior length of the plica were measured on the sagittal image showing the largest plica (Figs. 1-3). The anteroposterior length was measured in the sagittal plane from the inner tip of the plica to the outer capsule (Figs. 1, *A*, and 2). The craniocaudal thickness was measured at a distance of 4 mm from the capsule, as suggested previously, since the shape of the plica was triangular rather than rectangular (Fig. 1, *B*).[20] The volume (cross-sectional area) of the plica was also measured in the sagittal plane with a free-drawing tool as previously reported (Fig. 3).[20] The coronal image measurement was similar to that of the sagittal image except that the mediolateral length was measured instead of the anteroposterior length (Fig. 4).

Operative procedure

All patients were placed in the lateral decubitus position, and the entire procedure was performed under a tourniquet. A standard arthroscopic technique was used to establish proximal-medial and lateral portals using a 4.0-mm-diameter arthroscope with a 30° angulation. First, the anterior compartment was visualized, and débridement of the anterior component of the plica, if present, was then performed using a motorized shaver (Fig. 5, *A*). An ArthroCare device (Smith & Nephew, London, UK) in ablation mode was also used to remove plicae. The posterior compartment was visualized from the posterolateral portal, and débridement of abnormal plica tissue was performed from a soft-spot portal with a motorized shaver (Fig. 5, *B*). With the arthroscope in the posterolateral portal, the plica was observed as a large enfolded mass that extended over approximately a third of the posterior aspect of the radial head. Care was always taken not to jeopardize the integrity of the lateral ulnar collateral ligament, as overzealous resection of synovial plicae may render the lateral ulnar collateral ligament incompetent, leading to postoperative instability.

Statistical analysis

Statistical analysis was performed with SPSS software (version 16.0; IBM, Armonk, NY, USA) and the GraphPad Prism online software package (http://www.graphpad.com). Normality was assessed using the Kolmogorov-Smirnov test, and the Wilcoxon signed rank test was used to compare preoperative and postoperative clinical data. MRI measurement data were compared with a previously published dataset from normal elbows.[10,20] The mean values of 2 groups were compared using an independent 2-sample *t* test (Welch *t* test). In addition, we generated the receiver operating characteristic curve to estimate cutoff values for the measurement parameters on MRI using the mean and standard deviation in our study and in the previously published dataset (https://kennis-research.shinyapps.io/ROC-Curves/).

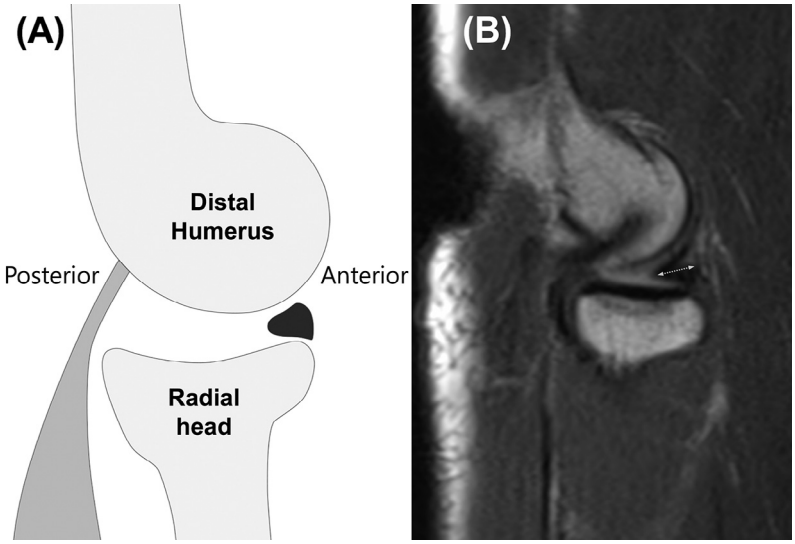

Figure 2 Measurement of length of anterior plica based on magnetic resonance imaging. (**A**) Schema. (**B**) Sagittal T2 magnetic resonance image with measurement of length (*arrow*).

Figure 3 The volume of a posterior plica (*dotted lines*) was measured on sagittal magnetic resonance imaging using a free-drawing tool.

Results

Location and physical signs

Plicae were classified as the anterolateral or posterolateral type based on the arthroscopic location.[11] The dominant location of the plicae was on the posterior side in 15 patients. Only 1 patient showed a plica in the anterior compartment, and the remaining 4 patients showed prominent plicae in both compartments.

Tenderness over the radiocapitellar joint line (so-called soft spot) was found in 13 patients (65%) (Table I). Sharp pain with terminal extension was also noted in 13 patients (65%). A catching sensation and painful snapping were observed in 10 patients (50%) and 9 patients (45%), respectively. The flexion-pronation test was positive in 8 patients (40%). A mild extension deficit ranging from 5° to 20° was noted in 6 patients (30%). The small number of patients with anterior plicae prevented characterization of the physical signs according to the plica location.

MRI findings

Plicae were seen on the anterior or posterior side of the radiocapitellar joint on sagittal images (Figs. 1, *C*, and 2, *B*). The location of prominent synovial plicae on MRI was correlated with arthroscopic findings in all patients. Typically, prominent plicae are located either anterolaterally or posterolaterally and a pure lateral location is rare, as reported previously in a cadaveric study.[11]

The size of the plica was measured and compared with normal values presented in a previous study (Table II). On coronal MRI images, the mean thickness of pathologic plicae was 3.7 ± 1.0 mm, which was significantly thicker than the normal value (1.8 ± 1.4 mm, $P = .007$).[20] In 13 patients (13 of 15, 86.7%), we observed plica thicknesses exceeding 2.6 mm, which was the cutoff value in a previous report.[20] On sagittal images, the mean thickness of posterior plicae was 3.4 ± 0.9 mm, and 13 patients (86.7%) showed thicknesses greater than 2.6 mm. Plica lengths on coronal and sagittal images (coronal length, 9.4 ± 1.6 mm; sagittal length, 8.2 ± 1.7 mm) were also greater than the normal values (coronal length, 3.9 ± 1.5 mm; sagittal length, 4.3 ± 1.5 mm; $P < .0001$ for each). On sagittal images, the mean volume of posterior plicae was 32.2 ± 8.1 mm^2. The calculated cutoff

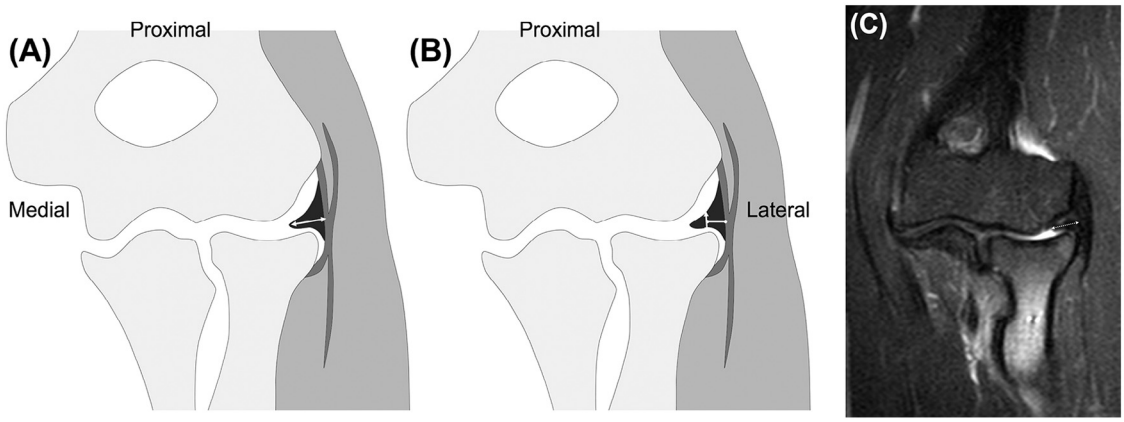

Figure 4 Measurement of length and thickness of plica based on coronal magnetic resonance imaging. (**A**) The mediolateral length of the plica (*arrow*) was measured. (**B**) The craniocaudal thickness was measured at a distance of 4 mm (*arrow*) from the capsule. (**C**) A prominent plica (*arrow*) was observed on a coronal T2 magnetic resonance image.

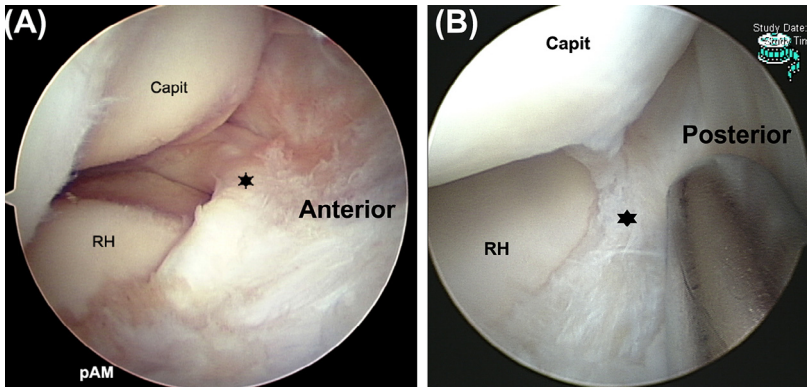

Figure 5 Arthroscopic finding of plica syndrome. (**A**) A prominent and thick anterior plica was (*star*) observed in the anterior compartment, covering the radial head. (**B**) A prominent posterolateral plica (*star*) was removed from the posterior compartment using a shaver. *Capit*, capitellum; *RH*, radial head; *pAM*, proximal anteromedial.

Table I Clinical characteristics of patients with plica syndrome

Clinical characteristic	No. of patients	%
Tenderness over radiocapitellar joint line	13	65
Sharp pain with terminal extension	13	65
Catching sensation	10	50
Painful snapping	9	45
Positive flexion-pronation test	8	40
Mild extension deficit	6	40

values for thickness on coronal images, length on coronal images, and length on sagittal images were 2.5 mm (area under the curve [AUC], 0.86), 6.0 mm (AUC, 0.99), and 5.6 mm (AUC, 0.95), respectively, according to the data in our study.

Clinical results after surgery

VAS scores for pain improved from 6.3 preoperatively to 1.0 postoperatively ($P = .001$); the Disabilities of the Arm, Shoulder and Hand scores (from 26.4 to 14.1) and MEPI scores (from 66 to 89) also improved ($P = .016$ and $P = .005$, respectively). The MEPI scores showed that 6 patients (30%) had an excellent outcome, 12 (60%) had a good outcome, and 2 (10%) had a fair outcome.

Subject symptom relief was rated by patients according to the following 4 grades: "completely subsided," "improved or partly subsided," "same," or "worse." Symptoms subsided completely in 8 patients (40%) and partly in 12 (60%). No patients had persistent preoperative pain. The range of motion did not change postoperatively (data not shown). Most patients regained full range of motion by 1 month after surgery. In addition, the extension deficit improved in all patients postoperatively. Regarding patient satisfaction, 7 patients (35%) were completely satisfied, 9 (45%) were mostly satisfied, and 4 (20%) were neutral.

Complications

No direct complications resulting from the operation occurred, and postoperative posterolateral instability did not develop in any patient. In 1 patient, an intra-articular loose

Table II Thickness and length of plicae on magnetic resonance imaging

	Coronal image		Sagittal image					
			Anterior plica			Posterior plica		
	Length, mm	Thickness, mm	Length, mm	Thickness, mm	Volume, mm^2	Length, mm	Thickness, mm	Volume, mm^2
Mean	9.4	3.7	8.9	4.0	42.9	8.2	3.4	32.2
Standard deviation	1.6	1.0	0.6	0.9	6.6	1.7	0.9	8.1
Normal value	3.9*	NA	NA	NA	NA	4.3*	1.8†	19.4†

NA, not available.
* Median value measured in study of Husarik et al.[10]
† Average value measured in study of Ruiz de Luzuriaga et al.[20]

body and early osteoarthritis of the elbow were later diagnosed, and additional arthroscopic surgery was required to remove the loose body and resect osteophytes around the coronoid tip 5 years after the index operation.

Discussion

This case series involved a little-known syndrome in which a synovial plica was present in the adjacent radiocapitellar joint. We carefully selected patients with lateral elbow pain caused by plicae. In mixed cases of lateral epicondylitis, it was not possible to establish the origin of pain in the pathologically thickened plica or the degenerated extensor tendon. In the current homogeneous series, we observed thick plicae using MRI and arthroscopy and found no other pathology associated with the pain. Postoperatively, all patients had decreased pain in the elbow. The presence of a thickened synovial plica in the radiocapitellar joint should be considered in the differential diagnosis.

After arthroscopic resection of the plica, most patients reported improvement in pain. Complete symptom relief occurred in 40% of patients, and their final average pain VAS score was 0.4. The remaining 60% of patients subjectively reported that their pain improved (or partly subsided). Although these patients reported residual pain, their VAS score decreased from 6.5 to 1.6 ($P < .001$). Following the first report of this syndrome in 3 patients by Clarke,[5] a number of case series have also reported successful clinical outcomes with arthroscopic resection. Antuna and O'Driscoll[2] showed that 12 of 14 patients had symptomatic improvement. Ten patients showed complete relief, but 2 patients had mild pain with strenuous use of the elbow. The other 2 patients had recurrent or persistent pain for unknown reasons. Steinert et al[23] reported that 1 of 3 patients showed chondromalacia of the radial head or capitellum during arthroscopic observation, which could be a source of persistent pain. In the case series by Ruch et al,[19] whose group of patients was the most similar to that in our series, all 10 patients were reported to have complete pain relief, with the authors insisting that arthroscopic management represents a successful treatment option. The exact reason some patients in our study complained of residual symptoms remains unclear. We have often encountered patients whose symptoms were substantially improved but who did not have complete relief for unknown reasons even after a simple and reliable surgical procedure such as rotator cuff repair or carpal tunnel release. It is possible that the persistent pain may be induced by pre-existing chondromalacia or scar formation after surgical trauma, but this is a merely speculative assumption. One of our patients received a diagnosis of early osteoarthritis 5 years later, which may have been a late consequence of chondromalacia. One important aspect of our case series is that no patient reported a postoperatively worse or unchanged level of pain compared with preoperatively.

We sought to identify any specific physical examination that might facilitate obtaining a diagnosis. The most frequent and meaningful symptoms were tenderness over the soft spot and sharp pain on terminal extension. Tenderness on the posterolateral soft spot was previously reported as a reproducible physical finding that could be used to differentiate plica syndrome from lateral epicondylitis.[13] The soft spot is located slightly distal and posterior to the lateral epicondyle, and if the pain is localized at the soft spot rather than at the lateral epicondyle, it may be attributed to a pathologic plica.[19] Large posterior plicae may also mechanically block terminal extension, leading to terminal pain on extension.[6,21] In 1 case series, pain during extension was reported in 67% of patients.[13] In another case series of 10 patients, 3 patients with posterolateral plicae showed a loss of extension ranging from 7° to 20°.[19] In an extreme case, a 70° passive extension deficit was reported in a 15-month-old infant with pearly white and posterolaterally located interposed tissue.[8] Snapping is another specific sign of a plica. In some cases, snapping was reproduced grossly and arthroscopically observed during elbow range of motion.[23] Snapping usually occurs between 90° and 110° of flexion with the forearm in pronation; it seems to be more pronounced in cases of anterior plicae rather than posterior plicae. In our series, half of the patients complained of a snapping sensation, consistent with another case series in which this sign was found to be reproducible in 50% of patients.[2] While these physical signs may be useful in distinguishing plicae from lateral epicondylitis, they may be accompanied by advanced osteoarthritis or loose bodies in the elbow, suggesting caution before arriving at plica syndrome as the sole diagnosis.

In this study, MRI analysis showed long and thick plicae in patients with plica syndrome. Three previous reports investigated plicae using MRI in a normal population.[4,10,20] In one such study, MRI of 60 normal elbows showed a median anteroposterior length of 4.3 mm, mediolateral length of 3.9 mm, and craniocaudal thickness of 1.9 mm.[10] The 90th percentile values for these dimensions were 6.8 mm, 6.3 mm, and 2.6 mm, respectively. Another study measuring 15 normal elbows showed that the mean thickness and cross-sectional area of the plicae on sagittal images were 1.8 ± 1.4 mm and 19.4 ± 5.7 mm^2, respectively.[20] The craniocaudal thickness in these 2 studies was very similar (1.9 mm and 1.8 mm). When we compared our results with these normal values, the thickness, length, and volume were all statistically different.[10,20] Since our measurement methods were based on those used in the 2 previous studies, we were able to directly compare our results. A recent study reported that the median mediolateral and sagittal dimensions—which are represented by length in our study—of plicae in the asymptomatic group were 3.8 mm and 4.7 mm, respectively.[4] The median dimensions reported in the plica group were 7.0 mm and 7.4 mm, respectively. These values are similar to those found in our study and historical control studies.

Currently, there is no concrete cutoff value for determining the abnormal thickness or length that indicates a diagnosis of a pathologic plica. Husarik et al[10] concluded that plica pathology was indicated when the thickness of the plica was greater than 3 mm, since none of the normal elbows had posterolateral plicae with craniocaudal thickness measurements of 3.1 mm or greater. In another study, 2.6 mm was used as the cutoff value for posterior plica thickness[20] based on the study by Husarik et al that reported the 90th percentile of thickness as 2.6 mm in the normal population. In our study, 13 of 15 patients (87%) had positive findings for pathologic plicae with 2.6 mm used as the cutoff value, whereas 11 of 15 patients (73%) had positive findings with 3.0 mm used as the cutoff value. Since the 90th percentile value for length (mediolateral or anteroposterior) is around 6.8 mm, this value can serve as the cutoff for length.[10] With 6.8 mm used as the cutoff value for the length of pathologic plicae, 13 of 15 patients (87%) in our study showed plicae that were wider than 6.8 mm. The cutoff value for volume in the sagittal plane was suggested to be 20 mm^2.[20] On the basis of this cutoff value, plica syndrome was diagnosed in all patients with available MRI data. When we used our data to estimate cutoff values for MRI measurements, we obtained similar values to those suggested by other authors. Thickness on coronal images was 2.5 mm, which is very close to 2.6 mm. The newly calculated cutoff values for length on coronal and sagittal images are 6.0 mm and 5.6 mm, respectively. By use of these cutoff values for length, long plicae could be diagnosed in 13 of 15 patients (87%) and 12 of 15 patients (80%), respectively. Although MRI examination was a helpful diagnostic tool, the decision to proceed with surgery must be based on clinical symptoms and physical examination findings. Owing to significant variations in thickness and length among individuals, a considerable overlap may occur in the size of symptomatic and asymptomatic plicae.

Synovial plica syndrome can be clinically confused with epicondylitis because of similarities in the pain location, which frequently delays accurate diagnosis. There is some controversy regarding the relationship between lateral epicondylitis and plica syndrome. Some surgeons believed that the synovial plica represented a source of pain in lateral epicondylitis, requiring routine excision as part of the surgical treatment for tennis elbow.[3,7,16,22] A recent anatomic study showed that the plica is contiguous with the radiocapitellar joint capsule, with a common extensor origin, indicating that it could be a potential source of pain in lateral epicondylitis owing to a shared single enthesis.[24] Another study contended that the removal of the plica is more important than débridement of the extensor origin in recalcitrant cases.[17] However, Rhyou and Kim[18] recently showed that the removal of plicae was not associated with better clinical outcomes after arthroscopic surgery for tennis elbow. In our opinion, these 2 diseases appear to be independent disease entities. If patients show the typical signs of lateral epicondylitis, plica resection does not yield additional benefit. However, when lateral epicondylitis is treated using an arthroscopic approach, concomitant débridement of the joint for plica removal may be easily added with a posterior portal. In cases of intractable lateral epicondylitis, the possibility of accompanying plica syndrome must be suspected. In a previous study, among a total of 480 patients with lateral epicondylitis, 40 had persistent symptoms for more than 6 months.[19] Among these 40 patients, 10 showed pathologic posterolateral plicae during arthroscopy, suggesting the possible misdiagnosis of plica syndrome as lateral epicondylitis.

The limitations of our study relate to its small sample size and the absence of a control group without surgery. Given the rarity of this disease entity, such a comparative study was impossible. Owing to the retrospective nature of the study, we could not provide a sufficient number of cases to obtain a sample size with adequate power. Another limitation is the lack of direct comparison with normal MRI findings at the same institution. Larger prospective case series with normal individuals, as well as patients, are necessary to yield useful diagnostic MRI data.

Conclusions

Plica syndrome should be considered a potential cause of pain in patients presenting with atypical posterolateral elbow pain. Familiarity with this rare condition may obviate problematic delays in diagnosis, and careful physical examination is essential for the initial differential diagnosis. Moreover, MRI may play an adjunctive role in the diagnosis of thickened synovial plicae, and arthroscopy is not only a diagnostic tool but also a therapeutic measure in these patients.

Disclaimer

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