



Can you Dig? Returning to Volleyball after Arthroscopic Medial Plica Excision

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BACKGROUND AND PURPOSE:

Plica is an embryologic remnant membrane found in the synovial lining or synovial capsule of the knee joint.¹ The function of plica is not known, and normally, plica is asymptomatic.^{1,2}

Most surgeons have protocols to guide physical therapy progression for meniscal or anterior collateral ligament (ACL) repair, but in regards to plica excision arthroscopically, there are no published rehabilitation and return-to-sport protocols.

The purpose of this case report is to describe the rehabilitation and return-to-sport process following arthroscopic medial plica excision for a patient who had previously undergone unsuccessful conservative management for anterior knee pain.

CASE DESCRIPTION:

BODY STRUCTURE

- 8/10 L Knee Pain
- 2.5cm L Mid-Patellar Swelling
- 11 days post-arthroscopic medial plica excision
- 7 days post-drainage

PERSONAL FACTORS

- 17 years old
- Male

ENVIRONMENTAL FACTORS

- High school student

ACTIVITY LIMITATIONS

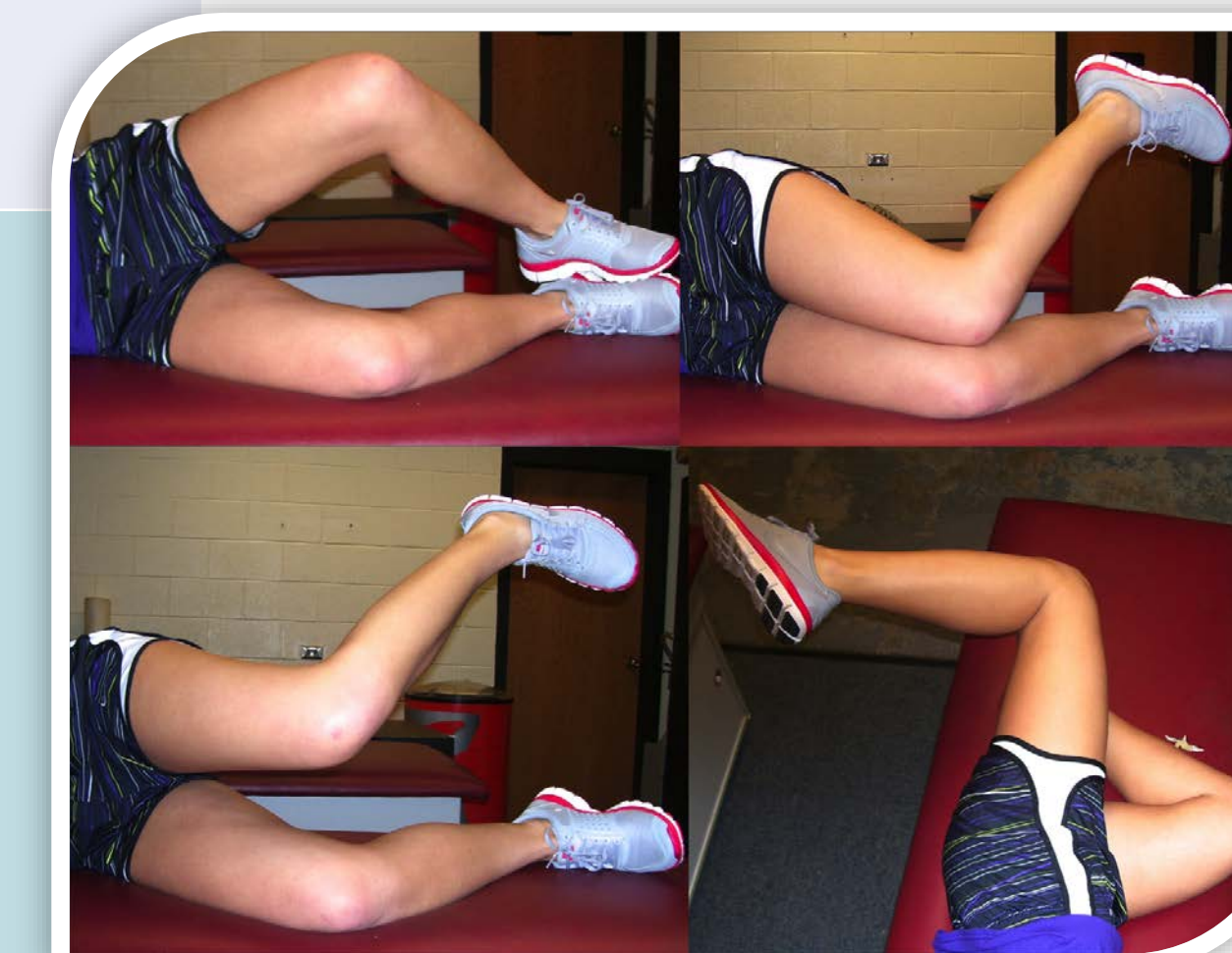
- Pain with weight-bearing
- Pain with getting in and out of car
- Pain going up and down stairs

PARTICIPATION RESTRICTIONS

- Wants to participate in volleyball tournament

METHODS:

	Rehab Goals	Intervention/Exercises
Session 1 Initial Evaluation	<ul style="list-style-type: none"> • Eliminate swelling • Improve range of motion 	<ul style="list-style-type: none"> • Effleurage • Active assisted heel slides • 4-way Straight Leg Raise(SLR) • Sit-to-stand • NMES + cryotherapy • Kinesio tape for swelling
Session 2	<ul style="list-style-type: none"> • Eliminate swelling • Improve range of motion • Improve single leg balance 	<ul style="list-style-type: none"> • Recumbent bike • 4-way SLR • Sit-to-stand • Bridges • Single leg stance • Clam progression • NMES + cryotherapy • Kinesio tape
Session 3	<ul style="list-style-type: none"> • No pain with weight-bearing with knee flexion • Increase strength of glutes • Eccentric control for functional activities 	<ul style="list-style-type: none"> • Recumbent bike • Single leg sit-to-stand • Single leg balance • Bridges on bosu • Clam progression with theraband • Lateral hip hikes to neutral • Monster walking and side-stepping • NMES + cryotherapy • Kinesio tape
Session 4 Post- Drainage	<ul style="list-style-type: none"> • Test strength • Improve eccentric control and balance • Improve glute strength • No pain with functional movements 	<ul style="list-style-type: none"> • Elliptical • 1RM Test single leg press and single leg extension • Supine bridge with hamstring curls • Bulgarian squat • TRX lunges • Monster walking and side-stepping • Rose wall slides
Session 5	<ul style="list-style-type: none"> • Improve Strength • Sport-specific plyometric training 	<ul style="list-style-type: none"> • Elliptical • Box jumps • Depth drops + sprints • Agility ladder drills • Volleyball drills (vertical jumps, bumping, setting) • Volleyball passing on bosu variations • Single-leg Leg press (70% 1RM) • Single-leg leg extension (70% 1RM)
Session 6 Discharge	<ul style="list-style-type: none"> • Sport-specific plyometric training 	<ul style="list-style-type: none"> • Treadmill • Hop Test • Volleyball drills (jump serving, jumping, setting, bumping, digging) • Agility ladder drills



RESULTS:

Outcome Measure		Initial Exam	Discharge
		Left	Left
Circumference	Mid-Patella	38cm	35.5cm
Active Range of Motion	Extension	0°	0°
	Flexion	93°	140°
Passive Range of Motion	Flexion	97° with pain	147°
	Superior Patellar Glide	Hypomobile, swelling end-feel	Normal
Muscle Strength	Gluteus Medius	4/5	5/5
	Quadriceps	Unable due to pain	5/5
	Hamstrings	4+/5	5/5
	Gluteus Maximus	5/5	5/5
1 Repetition Maximum (1RM)	Single-leg Leg Press	NT	105% of Right
	Single-leg Knee Extension	NT	95% of Right
Balance	Single Leg Stance	5s unable to maintain level pelvis, expressed pain and chose to stop	>60s on bosu with volleyball bumps and sets
		Functional Self-Report	Knee Outcome Survey (KOS)
	Numeric Pain Rating Scale (0-10)	2-8/10	0-2/10
Return-to-sport Hop Test		NT	>90% compared to Right side

CONCLUSION:

This case demonstrates positive outcomes using balance training, plyometric exercises, agility drills and sport-specific volleyball drills as rehabilitation for a young athletic male following arthroscopic medial plica excision. This allowed the patient to return to volleyball without symptoms or limitations less than four weeks after his arthroscopic surgery.

For References, Scan Here →

