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The Adequate Volume Of Midbody During The Intraoperative Finding Is 11Mm For Reshaping Surgery Of Discoid Lateral Meniscus

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Faculty Disclosure Information

- Nothing to disclose of all authors



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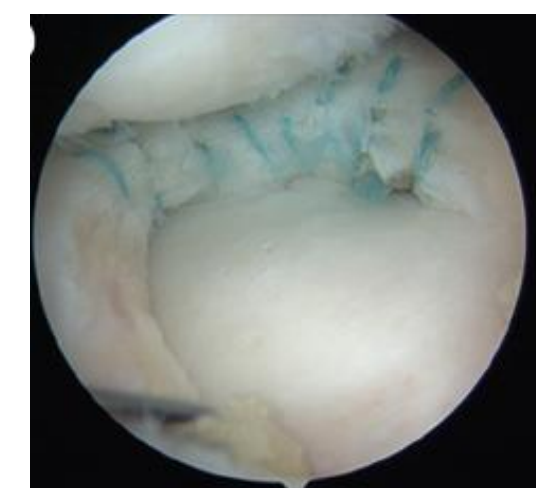
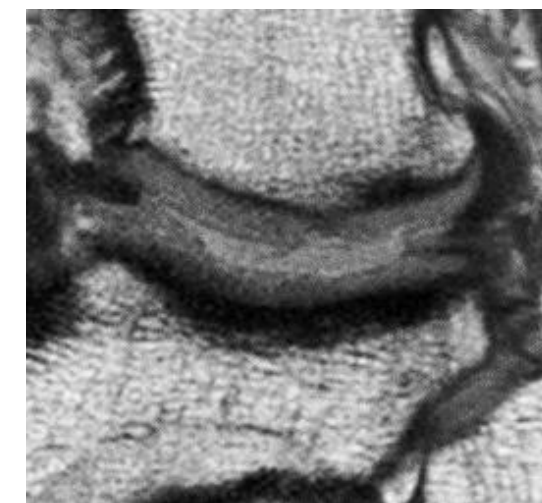
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Introduction

- **Total/subtotal meniscectomy of discoid lateral meniscus (DLM)**

high rate of Osteochondritis dissecans [1] /
Osteoarthritic change [2]

reshaping surgery
(saucerization/saucerization and repair) to
preserve 6~8mm of peripheral rim[3,4]



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The adequate residual volume of reshaping surgery is unclear.



AIM

The purpose of this study was to compare the change in the width of the midbody just after surgery to 2 years follow-between three groups: higher, middle, and low volume of residual meniscus.



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Methods

□ patients

- ✓ 86 patients with a symptomatic DLM were performed saucerization alone or saucerization and repair

- ✓ Mean age: 17.4 years, Male 40 Female 46

□ MRI evaluation;

- ✓ 1 week, 3 and 24 month after surgery , T2 FATSAT or proton mid sagittal/coronal images

□ Clinical evaluation;

- ✓ complication rate (retear, revision, OCD)

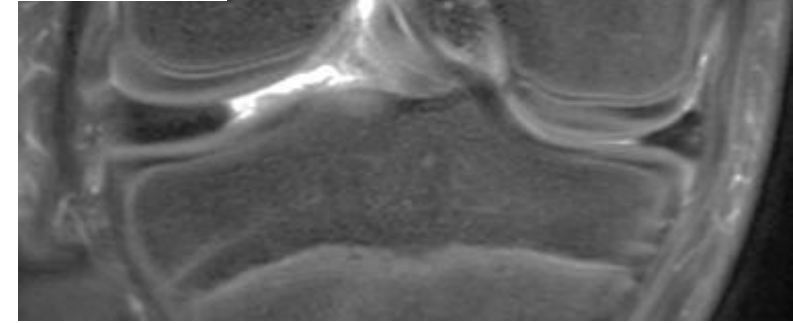


Grouping: 1 week after the surgery

- ✓ high volume group (more than 13mm) (H group),
- ✓ middle volume group (9mm or more and less than 13mm) (M group)
- ✓ low volume group (less than 9mm) (L group)



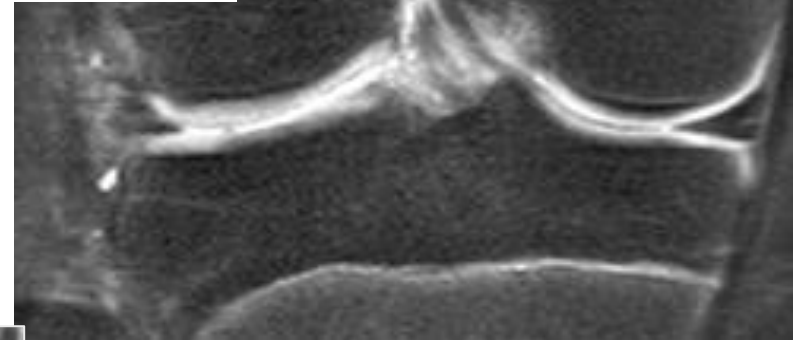
H group



M group

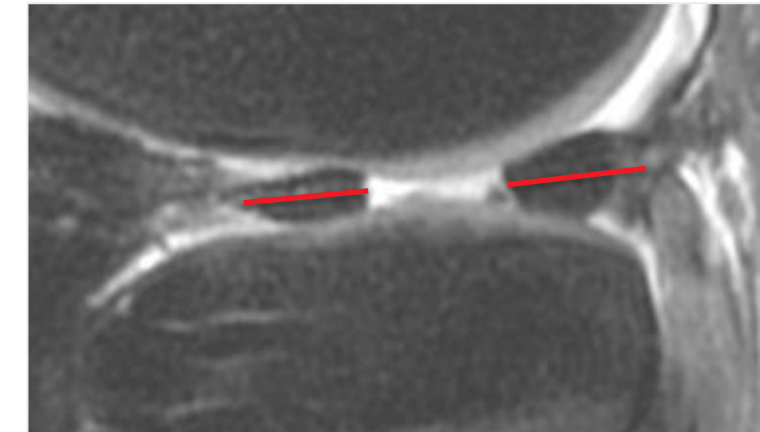
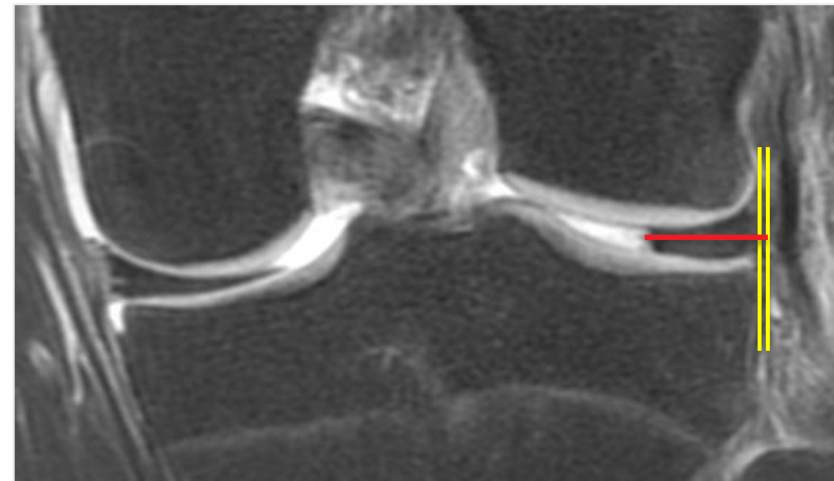


L group



□ MRI measurement;

- ✓ Residual meniscal width (anterior, midbody, posterior) and extrusion.



Result

Demographic data @1W	High group n=21	Middle group n=36	Low group n=28	P value
Age	13.2±3.1	20.4±13.9 ^b	16.6±12.6	.034*
Sex	M:14 F:7	M:15 F:21	M:11 F:17	.099
Height	152.1±12.1	155.3±13.1 ^b	145.9±15.8	.010*
Body weight	45.0±12.3	49.2±14.7	45.4±17.5	.348
Anterior horn	11.0±2.1 ^b	9.9±2.1 ^b	8.4±2.7	<.001*
Middle body	14.5±1.5 ^{a,b}	10.8±1.0 ^b	7.3±1.0	<.001*
Posterior horn	11.2±1.8 ^{a,b}	10.0±1.7 ^b	8.1±1.7	<.001*
Extrusion	0.1±0.4	0.1±0.5	0.2±0.6	.730
24 months data				
Complication, n(%)	5 (23.8) ^{a,b}	2 (5.5)	1 (3.5)	.032*
Midbody width≤5mm, n(%)	6 (28.5) ^b	5 (13.8) ^b	19 (65.5)	<.001*
LM extrusion>2mm, n(%)	12 (57.1) ^{a, b}	8 (22.2)	8 (27.5)	.012*

a: vs Middle (P<.05), b: vs Low (P<.05)



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Result

Variable	High group n=21	Middle group n=36	Low group n=28	P value		
				Group	Time	Group×Time
Anterior horn, mm				.010	<.001	.440
3-months	9.4±2.6 ^c	9.3±2.7 ^{b,c}	7.6±1.9			
24-months	8.3±1.8	8.1±2.0	7.1±1.7			
Midbody body, mm				<.001	<.001	<.001
3-months	11.0±3.2 ^{a,b,c}	8.9±2.0 ^{b,c}	5.8±1.3 ^c			
24-months	6.4±2.9 ^b	6.7±1.8 ^b	4.5±1.1			
Posterior horn, mm				<.001	<.001	.265
3-months	10.2±2.0 ^{b,c}	9.5±1.6 ^{b,c}	7.7±1.5			
24-months	9.0±1.6 ^b	8.5±2.0 ^b	7.2±1.3			
Extrusion, mm				.012	.286	.523
3-months	2.1±1.5 ^b	1.7±1.5	1.1±1.2			
24-months	2.1±1.2 ^b	1.3±1.2	1.2±1.0			

a: vs Middle (P<.05), b: vs Low (P<.05), c: vs 24-months (P<.05)



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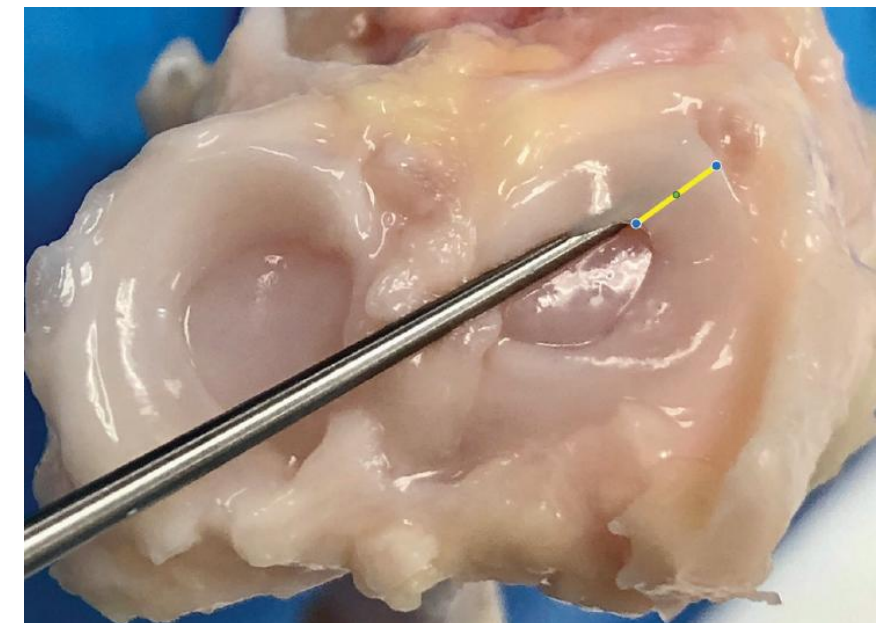
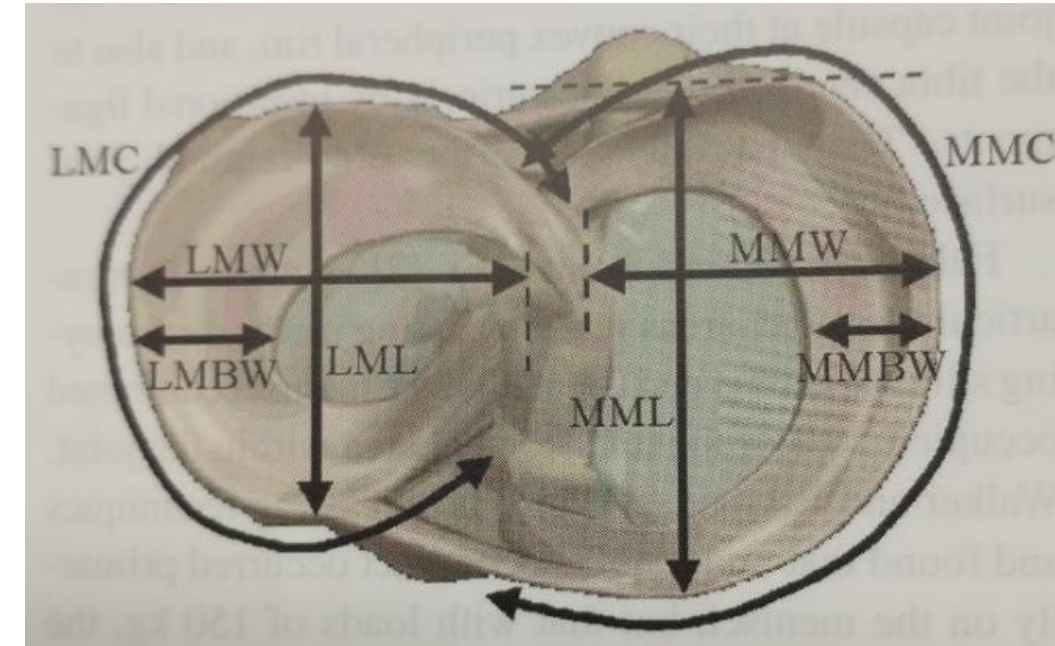
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Discussion

Normal width of midbody in Lateral Meniscus

- **Adult**
9-11mm [5,6,7]
- **From hiatus** [8]

~3 yo 5.5mm
10 yo 12mm
18 yo 16mm



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Discussion

Previous recommendation of residual width of DLM

Hayashi et al 6-8 mm: [9]

8mm> retear (saucerization only) [9]

5mm@24M < OCD, OA change [4,10]

**No report of the saucerization and repair
of more than 8mm cases**



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Discussion

Shrink the residual meniscus after DLM surgery

Midbody	0M	3M	6M	24M	
	11mm	→ (Δ4mm)	6.9mm	36%↓	[11]
		7.5mm →	6.9mm →	6.1mm	19%↓ [12]
			(Δ1.4mm)		
high	14.5	→ 11	→	6.4	56%↓
middle	10.8	→ 8.9	→	6.7	38%↓
low	7.3	→ 5.8	→	4.5	38%↓

The size was decreased to more than a half of the size in more than 13mm groups

Conclusion

The residual meniscus width with the midbody is recommended to be around 11 mm during surgery.

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