

COMPARISON OF REOPERATION RATES AFTER SAUCERIZATION VERSUS SAUCERIZATION WITH REPAIR IN ADOLESCENTS WITH LATERAL DISCOID MENISCUS TEARS

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Background: Symptomatic pediatric patients with lateral discoid menisci are surgically treated with various procedures including saucerization alone or in combination with meniscus repair. Previous studies have demonstrated that discoid menisci are more friable and have higher rates of failure after index procedures, regardless of the type of procedure. It is unknown how surgical procedure and suture configuration impact re-operation rates. Our hypothesis is that saucerization alone leads to a higher re-tear rate than saucerization with repair.

Methods: This is a retrospective chart review of 90 patients between 2014-2024 that were surgically treated for lateral discoid menisci at a single surgical center and their rate of reoperation. Patients were grouped by surgical procedure type, descriptive statistics were calculated, and t-Tests (student’s or Mann-Whitney) assessed statistical significance.

Results: 90 patients (Age=14.6±2.5 years, Sex= 63.6% female) were included that were treated for lateral discoid meniscus pathology. 32% (n=29) of patients underwent saucerization and 68% (n=61) underwent saucerization and meniscal repair. 4/29 saucerization patients (13.8%) received a subsequent operation, while 17/61 saucerization with repair patients (27.9%) had another procedure. Of the 61 cases in the saucerization and repair group, 33 operations required 1-3 sutures, while the remaining 28 operations required 4 or more sutures. Within the group of 33 patients receiving 1-3 sutures, there was a 33% failure rate and 18% transplant rate. Of the 28 patients receiving 4 or more sutures, there was a 21% failure rate and 11% transplant rate. The vast majority of the 1-3 suture groups were isolated for anterior or posterior horn laxity, while most of the 4+ suture cases were for meniscal tears.

Conclusions: The greater percentage of patients requiring subsequent procedures in the saucerization with meniscal repair group compared to the saucerization group indicate that the operation received to treat a discoid meniscus may influence post-operative outcomes. Reoperation may be more likely following a saucerization and meniscal repair, as reflected by a higher failure rate than saucerization alone. The anterior and posterior horns were a localized source of sutures in the minimal repair group, which may imply an innate vulnerability to the area regardless of the effectiveness of the meniscal repair. Suture placement and quantity may alter loading and impact healing, as those with fewer sutures had higher failure rates. Fewer sutures also tended towards a higher transplant rate, further indicating that a minimal repair construct may lend itself towards instability, re-tear, and eventual transplant.

Significance/Clinical Relevance: Our findings suggest that a minimal repair of a discoid post-saucerization may lead to point-loading, a higher re-tear rate, and subsequently a higher transplant rate than either saucerization alone or saucerization and comprehensive repair. This data could lead surgeons to only saucerize appropriately stable discoids while comprehensively repairing unstable torn discoids.

Table 1. Patient Demographics and Surgical Information Based on Procedure Type

	Total (n=90) Number (%)	Saucerization (n=29) Number (%)	Saucerization + Meniscal Repair (n=61) Number (%)	<i>p</i>
Age at DOS, years	14.6±2.5	15.4±2.0	14.2±2.6	0.023*
Biologic Sex				
Male	32(36.4)	9(31.0)	23(37.7)	
Female	58(63.6)	20(69.0)	38(62.3)	
Race				
White or Caucasian	41(50.0)	17(63.0)	24(44.4)	
Black or African American	12(14.6)	4(14.8)	8(14.8)	
Other	29(35.4)	6(22.2)	23(42.6)	
Not Reported	8(8.9)	2(6.9)	6(9.8)	
Ethnicity				
Hispanic or Latino	32(37.6)	7(24.1)	25(44.6)	
Not Hispanic or Latino	53(62.4)	22(75.9)	31(55.4)	
Not Reported	5(5.6)	0(0.0)	5(8.2)	
Days from injury to Surgery	293.2±495.0	259.5±361.4	309.2±549.3	0.731
Height (cm)	159.1±15.7	159.3±21.6	159.1±12.2	0.653
Weight (kg)	67.4±23.8	74.1±25.9	64.3±19.5	0.110
BMI	30.0±43.6	40.6±75.9	24.9±6.6	0.157