



Clinical profile and treatment outcomes of Discoid lateral meniscus in Children -A Cohort Study



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ABSTRACT

Aim: The aim of this study was to describe the clinical profile of children with lateral discoid meniscus and to evaluate the long term functional outcome following arthroscopic surgery. **Materials and Methods:** Single centre, prospective study conducted in Department of Paediatric Orthopaedics, Christian Medical College, Vellore from 2010-2020. Total 24 children with a minimum of 1 year follow up were included. Demographics, symptoms, physical, MRI and arthroscopic findings were recorded. Outcome assessment was done using Lysholm scoring by telephonic interview.

Results: The mean age of the children at the time of surgery was 9.28 ± 2.75 years with 13 boys and 11 girls. At final follow up the Lysholm score was excellent for 12(50%), good for 10(41.66%), satisfactory for 1(4.16%) and poor for 1(4.16%). No intra-operative complications occurred and no recurrences were observed except for one patient who continued to have unresolved pain.

Conclusion: Discoid meniscus is a rare meniscal anomaly which requires clinical suspicion, detailed history, physical and imaging examination at presentation. Following the arthroscopic treatment excellent to good results are observed in the majority of patients.

Intradition: Discoid meniscus is an atavistic anomaly in which the meniscus of the knee, predominantly the lateral meniscus, is discoid rather than semilunar in shape. Treatment has consisted of either partial or complete meniscectomy performed either arthroscopically or by open arthrotomy. Our aim was to determine the outcome of treatment of discoid meniscus in children.

Materials & methods:

Sample size: 24

Inclusion criteria: All children with Discoid Meniscus from Age 4 upto the age of 16 who underwent surgery between 5/01/2010 and 10/02/2020.

Exclusion criteria: Declines participation; Previous Knee surgery; Less than one year followup.

Primary Outcome

- Lysholm score (Telephonic Interview)

Secondary Outcome

- Range of motion as recorded in EMR
- Resolution of preop Symptoms- YES/NO
- Serious adverse events

Statistics: To assess the relationship between Lysholm Knee score versus clinical profile Pearson correlation was used. P value less than 0.05 was considered to be statistically significant. The analysis was carried out using STATA 22.0.

Results: At final follow up the lysholm score was Excellent for 12(50%), good for 10(41.66%), satisfactory for 1(4.16%) and poor for 1(4.16%). No intraoperative complications and no recurrence were observed. No degenerative changes were evident radiologically.

Discussion: In literature, the positive predictive value for diagnosis of discoid lateral meniscus has been reported to be 92–99%. The results according to the International Knee Society (IKDC) was an average of 96 (95–98). In our study, at 4 weeks follow up, no pain was noted and clinical examination showed resolution of clicking of the knee. In the 2 cases with knee contractures preoperatively, the knee mobility was 5–130° at the 4 weeks post op visit.

Conclusion: In our study, following arthroscopic debridement and partial meniscectomy, in the majority of the children, excellent to good results are observed. Clicking in the knee and knee contractures resolved with treatment.

Figure 1: Intraoperative clinical image



Table1: Descriptive characteristics

Variables	N	%	Mean ± SD	P	
Gender	Male	13	54.17	91.38 ± 9.85	0.494
	Female	11	45.83	93.82 ± 6.62	
Locking	No	18	81.82	91.39 ± 9.35	0.464
	Yes	4	18.18	95.00 ± 3.74	
Effusion	No	17	73.91	92.12 ± 8.99	0.804
	Yes	6	26.09	93.17 ± 8.18	
Tear	No	13	54.17	94.85 ± 7.7	0.358
	Yes	11	45.83	89.73 ± 8.78	
Watanabe	Type-1	18	75.00	92.72 ± 9.32	0.829
	Type-2	6	25.00	91.83 ± 5.6	
Age(mean)			9.28 ± 2.75		
LSH Score(mean)			92.50 ± 8.44		

Table 2. Results of Treatment for Discoid Meniscus by Age at Surgery

Age,	N	Excellent	Good	Satisfactory	Poor
< 12	12	6 (50%)	5 (41.66%)	0	1(8.33%)
> 12	12	6 (50%)	5 (41.66%)	1 (8.33%)	0
Total	24	12 (50%)	10 (41.66%)	1 (4.16%)	1 (4.16%)

Table 3. Results by Type of Meniscal Resection According to the Ikeuchi Scale

Type of resection	N	Excellent	Good	Satisfactory	Poor
Partial	13	6 (46.15%)	5 (38.4%)	1 (7.7%)	1(7.7%)
Complete	12	6 (50%)	4 (33.33%)	2 (16.66%)	0
None	1	0	1(100%)	0	0
Total		12 (46.15%)	10 (38.46%)	3 (11.58%)	1 (3.84%)



Figure 2: post-op follow up clinical image

	N	Excellent	Good	Satisfactory	Poor	P
Presence of Locking	4	2 (50%)	2 (50%)	0	0	1.0
Presence of effusion	6	4 (60%)	0	2 (40%)	0	0.85
Presence of FFD	9	4 (44.4%)	3(33.3%)	2(22.2%)	0	0.75
Tear	11	5 (45.45%)	3(27.27%)	2(18.18%)	1(9.09%)	0.456
Watanabe-type I	18	10 (55.5%)	6(33.3%)	2(11.1%)	0	0.045*
Watanabe-type II	6	4 (60%)	2 (40%)	0	0	0.57