

## Case Report

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# SYMPTOMATIC DISCOID MENISCUS: A CASE SERIES

Asep Santoso<sup>1</sup>, Erwin Saspraditya<sup>2</sup>, Muhammad Nagieb<sup>3</sup>, Gilang Persada Aribowo<sup>1</sup>,  
Iwan Budiwan Anwar<sup>1</sup>, Tangkas SMHS Sibarani<sup>1</sup>

<sup>1</sup>Department of Orthopaedic and Traumatology, Prof. Dr. R. Soeharso Orthopaedic Hospital, Faculty of Medicine Universitas Sebelas Maret, Surakarta, Indonesia.

<sup>2</sup>Department of Orthopaedic and Traumatology, Siloam Denpasar Hospital, Denpasar, Bali, Indonesia.

<sup>3</sup>Department of Orthopaedic and Traumatology, OMNI Alam Sutera Hospital, Tangerang, Banten, Indonesia.

## ABSTRACT

**Background:** Discoid meniscus is a rare entity of knee pathology. The discoid meniscus can be encountered incidentally during a treatment of another knee pathology as an asymptomatic entity or can be a symptomatic pathology which warrants treatment.

**Case Presentation :** There were 8 cases of symptomatic discoid meniscus reported in this retrospective case series. The symptoms presented at age range 16-47 years old. Majority of the cases (6 of 8) are lateral discoid meniscus with female gender predominant. Complete type of discoid meniscus was also found in 6 of 8 cases. There were 5 cases of ruptured discoid meniscus, three of them needed repair.

**Conclusion:** Symptomatic discoid meniscus can be presented in a wide range of age of patients. We found female gender, discoid lateral meniscus, and complete type are the predominant pattern of discoid meniscus case presentation.

**Keywords:** *knee; discoid meniscus; symptomatic*

**Level of Evidence:** IV



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### Corresponding Author:

Asep Santoso, MD.  
Department of Orthopaedic and Traumatology, Prof. Dr. R. Soeharso Orthopaedic Hospital, Jl. Jenderal Ahmad Yani, Pabelan, Surakarta. 57162,  
Email: asepsantoso@gmail.com

## Introductions

Discoid meniscus is a rare entity of knee pathology that occurs in only 3.2-4.8 /100,000 patients.<sup>1,2</sup> Discoid meniscus was first described by Young *et al.* in 1889.<sup>3</sup> After that, the number of publications and reports about discoid meniscus cases have significantly increased in the literature.<sup>4</sup> As an asymptomatic entity, the discoid meniscus can be encountered incidentally during a treatment of another knee pathology or can be a symptomatic pathology which warrants treatment.<sup>4,5</sup> A discoid meniscus can occur in either medial, or lateral and both of the menisci.<sup>5,6,7</sup> Furthermore, it also can occur in a ipsilateral or bilateral case.<sup>7,8</sup>

Several classification systems have been proposed in order to better understand about the spectrum of this pathology.<sup>4</sup> Treatments for discoid meniscus are also varied, ranging from conservative, saucerization, excision, repair or combined procedures.<sup>9</sup> Several countries have reported population-based studies on the demographics of discoid meniscus presentation.<sup>1,2,10,11</sup> Our recent study aimed to evaluate the demographics, clinical presentation and treatment of discoid meniscus treated in our centers. To our knowledge, this is the first paper to describe about the profile of discoid meniscus cases from our country.

## Case Presentation

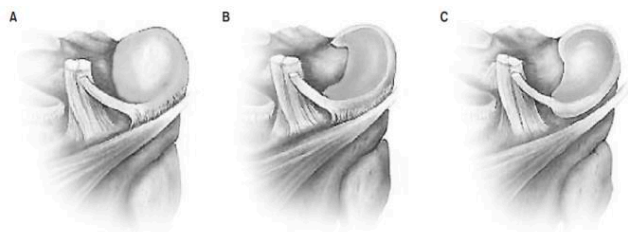
This was a retrospective case series of patients with discoid meniscus treated in three centers in Indonesia. All included case were symptomatic cases. We collected data on demographics including: age, gender, symptoms, and durations of symptoms. We also evaluated the type of pathology including: medial or lateral meniscus involvement, unilaterality, concomitant congenital pathology and classification of the pathology according to the Watanabe classification (Figure 1).<sup>9</sup> All of the cases were treated with arthroscopic surgical procedure. Type of treatment can be classified to partial meniscectomy, saucerization, total meniscectomy, repair or a combined procedure.

A total of 8 cases were included in this study. Discoid meniscus more commonly occurred in female patients with 7 of 8 (87.5%) cases. The symptoms presented in the age range of 16-47 years old. Discoid lateral meniscus was more commonly found with 6 of 8 (75%) cases, while medial and both meniscus involvement were found with one case each. Complete type of discoid meniscus according to the Watanabe classification was found in 6 of 8 (75%) cases, while the rest were incomplete type. The Wrisberg type of discoid meniscus was not found in our series. No concomitant congenital abnormality was found in our series.

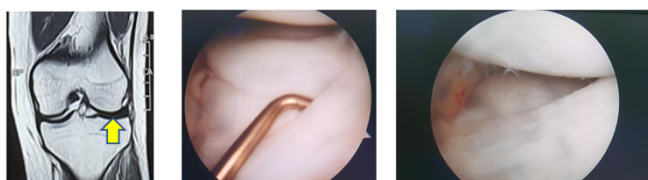
Pain was the most common symptom in discoid meniscus which occurred in all patients of our series. Snapping knee was found in 5 of 8 cases with three of them which occurred in full knee extension position. Knee locking occurred in 4 of 8 (50%) cases. Among four cases with the symptom of locking knee, only three cases were associated with ruptured discoid meniscus. We found 5 of 8 (62.5%) of cases with a ruptured discoid meniscus. All patients received arthroscopy surgical treatment. Saucerization was performed to all of the cases. Among five cases of ruptured discoid meniscus, only three cases needed repair. Table 1 shows the summary of the cases.

Table 1. Summary of symptomatic discoid meniscus cases

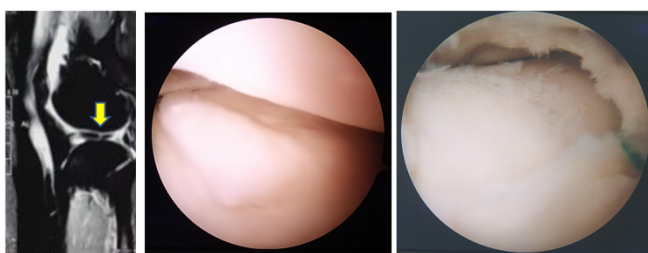
No. Cases	Gender / Age	Medial/lateral/ Both	Watanabe Classification	Symptoms and duration	Rupture	Other congenital abnormality	Treatment
1	F/16 yo	Lateral	Complete Type	Pain, snapping in full extension, 3 years	No	No	Saucerization
2	F/33 yo	Lateral	Incomplete Type	Pain, 3 months	Yes	No	Saucerization, Repair
3	F/47 yo	Lateral	Incomplete Type	Pain, snapping, locking, 3 months	Yes	No	Saucerization
4	F/26 yo	lateral	Complete type	Pain, snapping in full extension, 5 years	No	No	Saucerization
5	F/20 yo	lateral	Complete Type	Pain, snapping in full extension, 2 years	Yes	No	Saucerization
6	F/17 yo	Both	Complete Type	Pain, snapping, Locking, 2 years	No	No	Saucerization
7	F/34 yo	medial	Complete type	Pain, locking knee	Yes	No	Saucerization, Repair
8	M/24yo	Lateral	Complete type	Pain, locking knee	Yes	No	Saucerization, Repair



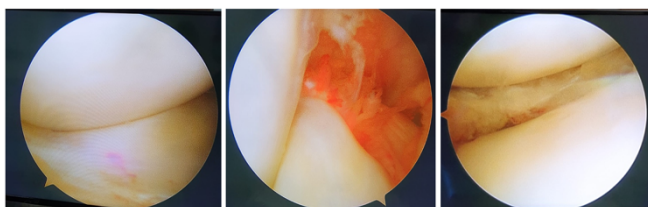
**Figure 1.** Classification of Discoid meniscus according to Watanabe *et al* (9).



**Figure 2.** Case illustration of a female 16 years-old with Snapping knee in full extension position. A. Magnetic resonance image (MRI) finding (arrow); B. Intra-operative finding of incomplete discoid lateral meniscus; C. Discoid lateral meniscus after saucerization



**Figure 3.** Case illustration of a female 33 years-old with painful knee without snapping/locking. A. MRI image showed a ruptured incomplete discoid lateral meniscus; B. Intraoperative finding; C. After saucerization and repair.



**Figure 4.** Case illustration of male 24 years-old with a painful knee with snapping and locking. A and B. Intra-operative finding of complete discoid lateral meniscus; C. After Saucerization

## Discussion

The main purpose of this study was to review the demographics and the pattern of clinical presentation in symptomatic discoid meniscus. We found the age range of patients in this series was 16 to 47 years old. A previous population-based study in China showed that symptomatic discoid meniscus can be found within the age range from 3 to 80 years old.<sup>11</sup> The data showed that the age of presentation could be extremely wide from pediatric to elderly patients. Usually, most of the cases were found in younger (adolescent) patients with age range 15-18 years old.<sup>1</sup> We found 7 of 8 cases of symptomatic discoid meniscus were female gender. The finding was similar to a report by Chen *et al.* which found female patients outnumbered male patients with 69.6% versus 30.4%, respectively.<sup>1</sup> However, previous studies in China and US showed that the female versus male incidence of discoid meniscus is similar.<sup>1,6</sup> The majority of discoid meniscus were found as symptomatic cases (77.5%), while the rest was asymptomatic (22.5%) [2]. The most common symptom of discoid meniscus was associated with a ruptured case, which occurred in up to 72% of the case.<sup>1</sup>

Regarding the type, the complete type of discoid meniscus was the most commonly found in our series with 6 of 8 cases. The findings were similar to a previous study by Chen *et al.* with 69.4% of cases which were complete type, followed by incomplete type with 30% and Wrisberg type with 0.6%.<sup>11</sup> Medial and both meniscus involvement is rare.<sup>7,12</sup> Lateral meniscus cases are still the most common presented type of discoid meniscus. We found 6 of 8 cases were a lateral discoid meniscus. We also did not find any concomitant congenital abnormality in all of the cases.

Not all patients with discoid meniscus needed surgical treatment. A report by Grimm *et al.* reported that symptomatic discoid menisci were more likely to be operated on compared with asymptomatic discoid menisci (71% vs 14%). Further, they also reported that 95% of the surgeries were saucerization.<sup>2</sup> All of the patients received saucerization in our recent series. We also found 5 of 8 cases were a ruptured discoid

meniscus case. Although repair was only needed in three cases. Horizontal and bucket-handle are the most commonly type of tear in discoid meniscus cases.<sup>2</sup> Chen *et al.* reported that 11.2% of discoid lateral meniscus also have concomitant ruptured medial meniscus.<sup>11</sup> Sixty patients (75.9%) received surgical treatment during the study period, including 49 (81.7%) patients who underwent partial lateral meniscectomy and 11 (18.3%) patients who underwent lateral meniscus repair in addition to saucerization.<sup>1</sup>

### Conclusions

Symptomatic discoid meniscus can be presented in a wide range of age of patients. We found female gender, discoid lateral meniscus, and complete type are the predominant pattern of case presentation.

### Conflict of Interest

The authors affirm no conflict of interest in this study

### Acknowledgement

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