Magnetic Resonance Imaging Findings of the Medial Meniscus in Early-stage Osteoarthritis of the Knee

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Disclosure

We have nothing to disclose

Introduction

Diagnostic Criteria for Early Knee Osteoarthritis (OA)

1.Luyten FP et al. Semin Arthritis Rheum. 2018.

- **Knee Injury and Osteoarthritis Outcome Score (KOOS)**
  Positive on two or more of the four subscales (85% or less)

- **Physical Examination:**
  Joint space tenderness or crepitus

- **Simple X-ray Findings**
  Standing position with KL grade 0-1

MRI is NOT included in the diagnostic criteria

Purpose

To clarify MRI findings of the medial meniscus in patients with early knee OA

Materials & Methods

Subjects: Patients diagnosed with early knee OA based on Luyten's criteria from 2018 to 2023 who visited the clinic with chief complaints of knee pain.

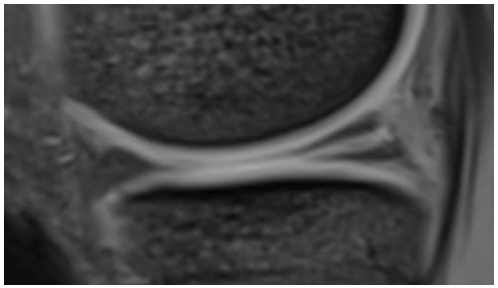
Total 241 knees

- Male: 99 Female: 212
- Average age: 59.9 ± 12.3 years

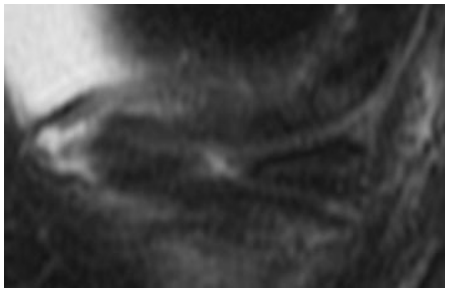
Materials & Methods

Methods:

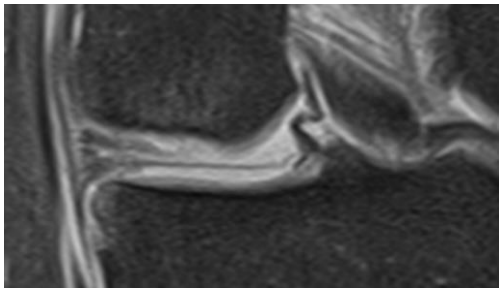
- MRI images were interpreted twice by the examiner with a three-week interval.
- Investigated the presence and type of medial meniscus tears (horizontal, Radial, flap, root tears).
- Defined horizontal tears as Mink classification grade 3 or higher; grade 2 or lower was considered normal.



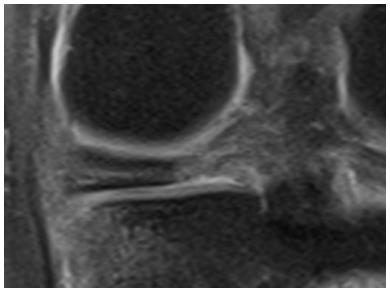
Horizontal tear



Radial tear

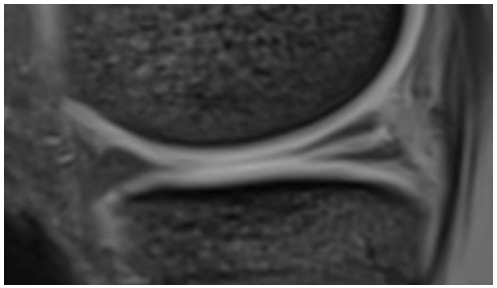


Flap tear

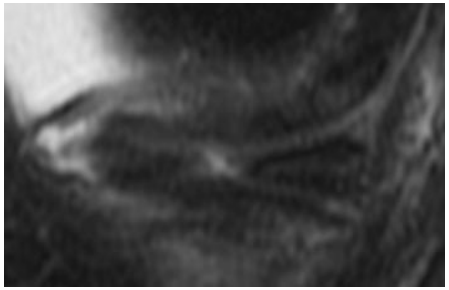


Root tear

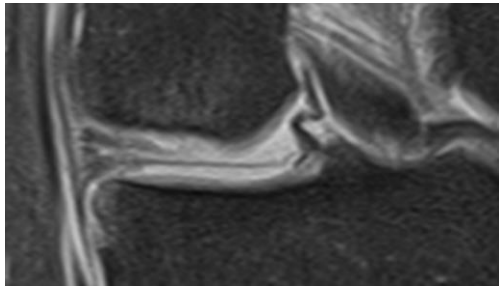
Result



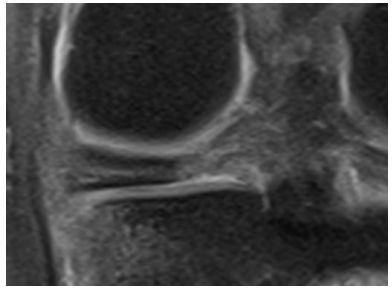
Horizontal tear
140 knees
58.1%



Radial tear
48 knees
19.9%



Flap tear
63 knees
26.1%



Root tear
57 knees
23.7%

No abnormal findings (Mink classification 2 or below): 29 knees (12.0%)

Presence of any meniscus tear: 212 knees (88.0%)

Discussion

Meniscal tears were present in 15% of women and 30% of men in an unselected population between ages 50 and 59, regardless of knee pain.

2.Englund M et al. N EnglJMed. 2008.

MRI is not included in the diagnostic criteria for early knee OA

However, our findings suggest that MRI can detect medial meniscus tears at a high rate (88.0%) in early knee OA patients, even when X-ray findings are normal.

MRI may be useful in considering appropriate treatment strategies for early knee OA.

Conclusion

- In early knee OA patients without significant X-ray abnormalities, MRI frequently detects medial meniscus tears.
- MRI should be considered an **important diagnostic tool** in the assessment and treatment planning for early knee OA.

Reference

1. Luyten FP et al. Toward classification criteria for early osteoarthritis of the knee. Semin Arthritis Rheum. 2018.

2. Englund M et al. Incidental meniscal findings on knee MRI in middle-aged and elderly persons. N Engl J Med. 2008.