Discoid meniscus in children and adolescents: Correlation between morphology and meniscal tears

Abstract
Background: Some authors have suggested that the diminished vascular blood supply, peripheral stability and thickness of the discoid meniscus (DM) would make it more prone to tears. The aims of this study are two-fold: 1) To analyse morphological characteristics by magnetic resonance (MRI), and 2) To correlate the size of the meniscus with the presence of meniscal tears.

Methods: The MRI of patients ≤18 years-old over a period of 5 years were reviewed, and patients with DM were identified. We analysed demographic data, location (medial or lateral), morphology (Watanabe), meniscal tears (Crues classification), pattern, displacement, and other associated findings. Meniscal height and thickness per width (TxW) were also calculated. The correlation between variables: morphology, height and TxW with the presence of meniscal tears were statistically analysed.

Results: Six hundred and eighty-five MRI (675 patients) were analysed. Forty-three knees (38 patients, 20 males) were found to have a DM (6.3%). The average age was 12.2±3.8 years (range: 4-18 years). Sixty-three percent had some type of meniscal injury. Patients with complete MD had a higher incidence of injuries (77.3 vs. 47.6%; P=.001). Longitudinal (bucket handle) and complex tears (n ??=11) only occurred in patients with complete DM. DM with tears presented a nonsignificant tendency to have higher meniscal height and higher TxW (6.29±1.26 vs 5.75±.66mm; P=.20 and 107.5±36.02 vs. 91.54±16.5mm2; P=.162).

Conclusion: The results of this series support the theory that a larger meniscal size would be one of the main predisposing factors for the DM to be injured.

Study design: Cross-sectional study (Level of evidence: III).

Keywords: Altura; Discoid meniscus; Height; Injury; Lesión; Magnetic resonance; Menisco discoide; Morfología; Morphology; Resonancia magnética.