MRI evaluation with severity of ankle osteoarthritis.
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Introduction/Purpose: Takakura-Tanaka classification is effective as an X-ray evaluation method for determining the severity of and treatment strategy for ankle osteoarthritis (OA). Concerning OA, MRI is gaining attention as a tool for examining the condition of the articular cartilage over X-ray findings. However, there are few reports on the relationship between MRI and X-ray findings in ankle joints. We assessed MRI findings of ankle OA at each stage of Takakura-Tanaka classification to investigate the effects of bone and articular cartilage.

Methods: We studied the localization of Bone Marrow Edema (BME) partitioned articular surface by MRI in 22 regions at the talocrural, talocalcaneal, talonavicular, and calcaneocuboid joints of 46 feet of 45 patients who had a diagnosis of ankle OA in our hospital. Furthermore, we compared the radiological findings with the localization of BME.

Results: By MRI, the area where BME was seen is located in the anterior medial part of the talocrural joint. Pointedly, 60% of BME was confirmed on the tibial side of the talocrural joint. In addition, as the Takakura-Tanaka classification advanced, the identification of BME tended to increase on the anterior of the talus and the medial malleolus articular surface.

Conclusion: We found on MRI that the localization of BME was identified by Takakura-Tanaka classification in osteoarthritis of the foot. On the other hand, there are some cases of OA without BME that were identified by X-ray in this study. In the future, there is a possibility that the severity of OA can be classified into more inclusive classifications by MRI. We intend to combine the severity of ankle OA with MRI findings and Takakura-Tanaka classification together.

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