7:35-7:42 am

SPECT-CT: a New Imaging Diagnostic Tool for Osteochondral Lesions (OCL) of the Talus - Comparison to MRI

Presenting:
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Summary:
This study compared the influence of MRI and SPECT-CT on decision making in 26 patients in osteochondral lesions (OCL) of the talus and showed the additional information provided by the SPECT-CT.

Abstract:

Introduction:
Magnet resonance imaging (MRI) is the gold-standard of non-invasive diagnostics in OCL. Single photon emission computed tomography – computed tomography (SPECT-CT) shows additional, high-resolutioned information of osteoblastic activity and bony morphology. The study aimed for evaluating the influence of the SPECT-CT on decision-making in OCL therapy.

Methods:
MRI and SPECT-CT of 26 patients (average age: 32y) were analyzed separately by 3 blinded, independent orthopaedic foot and ankle surgeons experienced in treating OCL and working with MRI and SPECT-CT for treatment decision-making.

Results:
By the SPECT-CT, a change in treatment was documented in 46 of 78 decisions (59%) in comparison to the MRI. Following treatment decisions were chosen most often: Retrograde drilling: 41.0%; microfracture: 17.9%; osteochondral autologous transplantation: 14.8%; excision and debridement: 10.3%; others: 16.0%. However, overall distribution of therapies remained unchanged between MRI and SPECT-CT. Main differences in imaging interpretation were found for: subchondral bone plate morphology (65%), subchondral sclerosis (62%), subchondral cysts (42%), and kissing lesions (38%). The area of szintigraphic activity in
comparison to bone bruise was found to be smaller in 50% of cases and bigger in 27%.

**Discussion:**
The additional information provided by the SPECT-CT influences the decision-making for the treatment of OCL significantly. This is due to changed interpretation of subchondral bone plate morphology and subchondral bone activity. No study reported on SPECT-CT in OCL yet. SPECT-CT may become important in diagnostics and treatment decision-making in OCL.