Entheses on US Can Predict Spondyloarthritis

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FROM ANNALS OF THE RHEUMATIC DISEASES

A power Doppler ultrasound examination may provide the most accurate early diagnosis of spondyloarthritis, with a sensitivity of 76% and a specificity of 81% upon the visualization of at least one vascularized enthesis.

The finding may be particularly valuable to rheumatologists because the existing spondyloarthritis diagnostic criteria have, at best, a limited ability to accurately identify the disease in its earliest stages, Dr. Maria Antoinette D'Agostino and her colleagues wrote.

Although the test itself is a "delicate technique," it is within the reach of most ultrasound technicians, said Dr. D'Agostino of Versailles Saint-Quentin-en-Yveline (France) University.

The 2-year prospective cohort study comprised 118 patients with symptoms suggestive of spondyloarthritis. These included inflammatory back pain (48); arthritis or arthralgia (38); enthesitis or dactylitis (12); and HLA B27 plus acute anterior uveitis (20). Their median age was 40 years; the median disease duration at baseline was 2 years.

All patients underwent a standard clinical examination by a rheumatologist who was blinded to the diagnosis of the referring physician. All had provided a pelvic x-ray not more than 6 months old for the scoring of sacroiliitis; if the radiologic findings were equivocal or if there was persistent buttock pain, the patients underwent a pelvic CT scan.

Every patient had a power Doppler ultrasound examination of peripheral entheses by a sonographer who was blinded to the patients' data. Areas examined included plantar fascia, Achilles tendon, patellar ligament on the patella apex, quadriceps femoris, gluteus medius tendon, and the common extensor and common flexor tendons on the lateral and medial epicondyle of the elbow.

Important findings included any morphologic or structural abnormalities and vascularization at bony insertion points. The study evaluated three criteria: any vascularized enthesis, the number of abnormal entheses, and the global ultrasound score.

The referring physician's diagnosis was used as the clinical standard in evaluating ultrasound's diagnostic capability; after 2 years, the patients were reevaluated for a final diagnosis, which the investigators then compared with the original diagnosis to compute ultrasound's diagnostic capability. At the end of the follow-up period, patients were reclassified by their referring rheumatologist (51 diagnosed with SpA, 48 not diagnosed as SpA, and 19 unclassified).

In building the prediction model, the investigators examined the ultrasound findings in light of the final diagnoses. Ultrasound found at least one abnormal enthesis in 88 (75%) of the patients; the enthesis was vascularized in 56 of these patients. At least one vascularized enthesis occurred in 76% of those with an SpA diagnosis, 19% of those with a non-SpA diagnosis, and 42% of unclassified patients (Ann. Rheum. Dis. 2011;70:1433-40).

Ultrasound detected significantly more abnormal and vascularized entheses in SpA patients than in non-SpA patients. Those with a SpA diagnosis also had significantly higher ultrasound global scores than did the other groups.

Overall, two factors independently predicted a final diagnosis of SpA: Patients who had at least one vascularized enthesis on ultrasound were 12 times more likely to have a final diagnosis of SpA, and patients with an Amor criteria score of 6 or greater were nearly nine times more likely to have SpA than patients with a lower score. Further analysis confirmed that the baseline presence of at least one vascularized enthesis predicted SpA at 2 years with a 76.5% sensitivity and an 81% specificity. If there were no vascularized entheses at baseline, SpA could still be predicted with a combination of ultrasound and positive Amor criteria score, the authors said; this method yielded a sensitivity of 90% for SpA and a specificity of 77%. "Strikingly, we confirmed that vascularization of the enthesis insertion by [ultrasound] is a landmark feature for SpA, even in suspected cases," the authors said. ■

VITALS

Major Finding: One vascularized enthesis seen on ultrasound predicted SpA within 2 years with a sensitivity of 76% and a specificity of 81%. An ultrasound finding of a nonvascularized enthesis, combined with positive Amor criteria, predicted the disorder at 2 years with a sensitivity of 90% and a specificity of 77%.

Data Source: A prospective cohort study of 118 patients with symptoms suggestive of spondyloarthritis.

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